University of Surrey

Surrey Business School

Faculty of Arts and Social Sciences

The followership effect:

Charismatic oratory, hypnoidal and altered states of consciousness

by

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Abstract

Charismatic leadership and hypnosis are frequently associated in the literature. This thesis contributes to charismatic theory by illustrating there may be more to this association than mere speculation. The research used Phenomenology of Consciousness Inventory (PCI), and adapted PCI-Hypnotic Assessment Protocol items, to explore the within-subject effects of world-class oratory compared to a baseline condition (eyes open sitting quietly) and pseudo attention placebo (archive film from the same date and context).

Drawing on the PCI’s ability to generate predicted Harvard Group Scores (pHGSs) (a general measure of trance depth (or ‘hypnoidal state’)), charismatic oratory deepens trance but not to the same degree as found in prior Harvard induction research. Despite this, 8.26% of people attain trance depths commensurate with a high hypnoidal state (pHGS > 7.0). There are also similar relationships between self-reported depth, imagoic suggestibility and hypnoidal state to those found in prior hypnosis studies. Oratory, in addition, generates an altered state of consciousness. However, while it yields a similar PCI major dimension intensity profile to hypnotic induction, it appears to produce different pattern effects (notably the association of amplified levels of negative and positive affect and bonding relationships to altered state, altered experience and visual imagery). Additional analyses, applying methods previously used to define hypnotic type, identify five follower types with (for those obtaining high and low depth of trance during the speech) characteristics similar to high and low hypnotic susceptibility individuals during hypnosis.

Paralleling recent theorising about the nature of hypnosis, charismatic effects could also be seen as a sub-domain of the wider domain of suggestion, but one placing greater emotional demands on consciousness. In the right circumstances, world-class oratory (or similar charismatic media) could fulfil a comparable function to the suggestibility test during stage hypnosis (i.e. as a selection mechanism for identifying those most susceptible to influence).
Declaration of originality

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Signature:

[Signature]

Name in Print: Richard Mark Churches

Date: 18th January 2016
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This research would not have been possible without the generous support of Dr Ronald J. Pekala who gave permission to use the PCI questionnaire and to adapt PCI-Hypnotic Assessment Protocol pre- and post-items for use before and after the charismatic leadership speech. Dr Pekala and Elizabeth J. Forbes also kindly supplied a previously unpublished set of intercorrelation matrices related to a large hypnosis study (Pekala and Forbes, 1988) that allowed for a direct comparison of pattern effect during hypnosis to those found during the speech condition in the present study. Information about the PCI questionnaire and the PCI-Hypnotic Assessment Protocol is available at www.quantifyingconsciousness.com.

Thanks should also go to the supervisors who have supported this study from the Faculty of Business, Economics and Law at the University of Surrey: Dr Paul Tosey (main supervisor), Professor Colin Hales, Professor Mark Saunders and Dr Vurain Tabvuma. Gratitude and thanks are offered to Education Development Trust (formerly CfBT Education Trust) who gave permission for a large number of employees to take part in the study. Finally, thanks go to my examiners, Professor Jo Silvester (Professor of Psychology, Cass Business School, City University London) and Professor Eugene Sadler-Smith (Professor of Organisational Behaviour, Surrey Business School, University of Surrey), for their helpful observations and revisions.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>d-ASC</td>
<td>Discrete altered state of consciousness (Tart, 1975)</td>
</tr>
<tr>
<td>b-SoC</td>
<td>Baseline state of consciousness (Tart, 1975)</td>
</tr>
<tr>
<td>i-SoC</td>
<td>Identity state of consciousness (Tart, 1975)</td>
</tr>
<tr>
<td>d-SoC</td>
<td>Discrete state of consciousness (Tart, 1975)</td>
</tr>
<tr>
<td>ISS</td>
<td>Imagoic suggestibility score (Pekala, Kumar and Maurer, 2005)</td>
</tr>
<tr>
<td>PCI</td>
<td>Phenomenology of Consciousness Inventory (Pekala, 1991)</td>
</tr>
<tr>
<td>PCI-Hypnotic Assessment Protocol</td>
<td>Phenomenology of Consciousness Inventory – Hypnotic Assessment Protocol. Often further abbreviated in the literature to PCI-HAP (Pekala, Kumar and Maurer, 2005)</td>
</tr>
<tr>
<td>pHGS</td>
<td>Predicted Harvard Group Score (also known as 'hypnoidal state' (Pekala and Kumar, 2007))</td>
</tr>
<tr>
<td>RI</td>
<td>Reliability index. Specifically, the measure of intra-reliability produced by the PCI Excel scoring protocol (Pekala, Maurer and Ott, 2009)</td>
</tr>
<tr>
<td>srDI</td>
<td>Self-reported depth of influence. The title chosen for the adapted srHD item used in the present study</td>
</tr>
<tr>
<td>srHD</td>
<td>Self-reported hypnotic depth (Pekala, Kumar and Maurer, 2005)</td>
</tr>
</tbody>
</table>
A note on the statistical conventions used

Numbers with a value greater than 100 have been reported to the nearest whole number (for example, M = 7,325). Numbers between 10 and 100 are reported to one decimal place (for example, M = 39.2). For numbers between 0.10 and 10, two decimal places are reported (for example, M = 4.52, SD = 0.98). Numbers that have a value less than 0.10 have been reported to three decimal places; however, as many digits as necessary have been used for numbers close to zero (for example, M = 0.016, SEM = 0.0002). In relation to p-values, the report uses exact numbers (to three decimal places), with the exception of occasions where SPSS has reported .000, reported in this thesis as p < .0005. Occasionally, when it was not possible for the writer to convert evidence from previous research to the conventions above, results appear as in the original paper (for example, p < .05). Because of the large number of hypotheses and the mixture of directional and non-directional predictions within these, the author has clarified the reporting of one-tailed and two-tailed p-values in brackets following the p-value.
## Statistical abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>β</td>
<td>Standardised coefficient</td>
</tr>
<tr>
<td>B</td>
<td>Unstandardised regression coefficient</td>
</tr>
<tr>
<td>ε</td>
<td>Epsilon – used to adjust the degrees of freedom for results which had violated the assumption of sphericity (Greenhouse and Geisser, 1959)</td>
</tr>
<tr>
<td>$\chi_F^2$</td>
<td>Friedman's ANOVA test statistic</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>Chi squared. In the case of PCI research, in addition to common uses of chi squared, the Jennrich Test produces a measure of overall change in pattern effect. A significant chi squared result is considered to be an indication of altered state of consciousness according to Tart’s theories (1972, 1975, 1977).</td>
</tr>
<tr>
<td>$\eta_p^2$</td>
<td>Partial eta squared</td>
</tr>
<tr>
<td>$\sqrt{(k-x)}$</td>
<td>Used to indicate a reflect and square root transformation</td>
</tr>
<tr>
<td>$\sqrt{x}$</td>
<td>Used to indicate a square root transformation</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
</tr>
<tr>
<td>Box M</td>
<td>Box M test statistic (Box, 1949)</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence interval (always 95% in the present study results)</td>
</tr>
<tr>
<td>df</td>
<td>Degrees of freedom</td>
</tr>
<tr>
<td>$d_z$</td>
<td>Revised form of Cohen’s $d$ applied to dependent groups, in which the standard deviation of the difference score applies instead of standard deviation (used in the <em>a priori</em> power analyses) (Rosenthal, 1991). Where $d$ is reported, in relation to present study within-subject results, Morris and DeShon’s (2002) equation 8 has been used to correct for dependence among the means – in which case the abbreviation has also been used with uncorrected $d$ also offered for comparison.</td>
</tr>
<tr>
<td>$f$</td>
<td>Cohen’s effect size $f$ as applied by G*Power (see Faul et al., 2007; 2009) in <em>a priori</em> power analyses. Defined as: $\sigma_m/\sigma$, in which $\sigma_m$ is</td>
</tr>
</tbody>
</table>
the standard deviation of the group means, and \( \mu_i \) and \( \sigma \) the common standard deviation within each of the \( k \) groups. The total variance is then \( \sigma_i^2 = \sigma_m^2 + \sigma^2 \).

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>F</td>
<td>F-ratio, ANOVA test statistic</td>
</tr>
<tr>
<td>M</td>
<td>Mean</td>
</tr>
<tr>
<td>MANOVA</td>
<td>Multiple analysis of variance</td>
</tr>
<tr>
<td>MATLAB</td>
<td>Matrix laboratory statistics package from MathsWorks (version 2012a)</td>
</tr>
<tr>
<td>MD</td>
<td>Mean difference</td>
</tr>
<tr>
<td>n, N</td>
<td>Sample size</td>
</tr>
<tr>
<td>p</td>
<td>Probability</td>
</tr>
<tr>
<td>r</td>
<td>Pearson’s correlation coefficient</td>
</tr>
<tr>
<td>R</td>
<td>Multiple correlation coefficient</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>Coefficient of determination – the proportion of data explained by the model</td>
</tr>
<tr>
<td>( r^2(\times 100) )</td>
<td>Variance in common (calculated using the square of ( r )). Used in PCI research to operationalise Izard’s concept of bonding between sub-dimensions of consciousness (see Pekala and Kumar, 2007).</td>
</tr>
<tr>
<td>( r_s )</td>
<td>Spearman’s rank correlation coefficient</td>
</tr>
<tr>
<td>( r_s^2(\times 100) )</td>
<td>Proportional reduction in errors calculated using the square of ( r_s )</td>
</tr>
<tr>
<td>SE</td>
<td>Standard error</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences (version 20)</td>
</tr>
<tr>
<td>( sr^2 )</td>
<td>Semipartial correlation</td>
</tr>
<tr>
<td>t</td>
<td>t-test test statistic</td>
</tr>
<tr>
<td>U</td>
<td>Mann-Whitney test statistic</td>
</tr>
<tr>
<td>V</td>
<td>Pillai’s trace. The sum of the proportion of explained variance on the discriminant functions</td>
</tr>
<tr>
<td>Z</td>
<td>Data point expressed in standard deviation units, used in the present study as the Wilcoxon test statistic</td>
</tr>
</tbody>
</table>
Chapter 1 – Introduction

This chapter begins by stating the purpose of the research and research aims, and by giving a summary of the approach used. There then follows an explanation of the use of terms such as ‘hypnosis’ within the thesis (including ‘hypnotic’, ‘hypnoidal’ and ‘hypnotic induction’). Following this, and in order to clarify for the reader the territory that the association between hypnosis and charismatic leadership occupies within the literature, this introduction goes on to summarise the writings that inspired the research in the first instance. Chapters 2 and 3 give more extensive reviews of the literature.

The current chapter continues with an explanation of the personal experiences that informed the decision to complete a PhD in this area. After this, there is a description of the research phases undertaken and their association with the remaining chapters. This appears together with a map (Figure 1.1) illustrating the key stages and steps that took place during the research. Lastly, there is a statement of the research model and framework for investigating the effects of charismatic oratory showing relationships to key constructs discussed in the thesis (Figure 1.2). Within this section, four formal propositions are stated alongside the 14 interrelated hypotheses that adopting the Phenomenology of Consciousness (PCI)’s ‘empirical phenomenological’ method (Pekala and Kumar, 2007; Pekala, 2015) allowed for the testing and investigation of. A table containing key terms and their definitions can be found in Appendix A. The reader may find this particularly helpful during this initial chapter where, inevitably, the author has cited some of the more complex concepts in isolation from the extensive discussion and definition provided later in the thesis.

1.1 Research purpose, aims and approach

1.1.1 Purpose and aims of the research

For over a century, the terms ‘hypnosis’ and ‘hypnotic’ has often been associated with leadership, particularly charismatic leadership and related group processes (see for examples, Bryman, 1992; Estabrooks, 1943/1957; Fishman, 1964; Freud, 1921/2001; Gardner and Avolio, 1998; Harris, 1979;
Kellerman, 2008; Le Bon, 1895/1947; Popper, 2000, 2002a; Reed, 1999; Schjoedt et al., 2010; Willner, 1984). Drawing on this literature, the purpose of the present research was as follows:

**To explore the frequently hypothesised relationship between charismatic leadership and hypnosis, and examine whether research could identify if there was evidence to support this proposition**

Within this, there were two aims.

**Research Aim 1 – To identify a means of operationalising the effects of charismatic leadership in a way that could allow a comparison of such effects to hypnosis**

**Research Aim 2 – To use the approach identified in Research Aim 1 to find out whether the effects of charismatic leadership are similar to, or the same as, the effects of hypnosis**

Hence this thesis seeks to contribute to the charismatic literature and thus, by extension, to the wider management and leadership literature by establishing whether the associations frequently made have any basis and relevance. If the two conditions were to be found to be related, this could have important implications for understanding situations in which businesses fail under the influence of charisma (see, for example, Beenan and Pinto, 2009; Tourish and Vatcha, 2005), or in situations where unthinking crowd behaviour appears to take over with financial repercussions (see Bordon, Schmid and Schmidt, 2014). On the other hand, finding no relationship could help to throw light on and tackle what may be a myth and an enduring misrepresentation within the literature. Inevitably, because of the read-across to organisational behaviour related findings from psychology and recent cognitive neuroscience studies, elements of the thesis by extension contribute to the wider investigation of consciousness and the growing body of PCI literature from a wide range of domains (see Pekala and Kumar, 2007; Pekala, 2015; Appendix B for those from which trance depth can be summarised). Likewise, there could be implications for other social contexts that appear to involve charisma, such as
cults like the Islamic State of Iraq and the Levant (ISIL), and some political circumstances (see Popper, 2002a).

1.1.2 The approach

In the pursuit of a means of exploring whether charismatic leadership and hypnosis are related, a number of activities took place (desk research, attendance at stage hypnosis training, Pilot Analytical Study and four Main Studies which build progressively on one another). Following reviews of the charismatic leadership, hypnosis and altered state of consciousness literature, charismatic leadership oratory became the focus (and thus the independent variable (IV)) in a within-subject (repeated measures) experimental research design. As a means of operationally defining the effect of oratory, the Phenomenology of Consciousness Inventory (PCI) and adapted PCI-Hypnotic Assessment Protocol items (Pekala, 1991; Pekala and Kumar, 2007) assessed alterations to the subjective experience of consciousness during Martin Luther King’s 1964 Lincoln Memorial Address.

A comparison was then made of these results to previously published and peer-reviewed evidence about the effects of hypnotic induction. A pseudo attention placebo (archive film from the same date and location as the speech, including crowd scenes up to the beginning of the speech) facilitated the ability to control statistically for filmic and contextual influences within the analyses.

The research design used in the Pilot Analytical Study and four Main Studies incorporated full counterbalancing of the levels of the IV to control for order effects, with random allocation to the order in which participants experienced the three conditions. The participant group as a whole consisted of people who volunteered from within a random sample drawn from a single workplace population. PCI questionnaire items, grouped according to the dimensions of phenomenological experience of consciousness that the PCI seeks to measure, can be found in Appendix C; PCI-Hypnotic Assessment Protocol items and their adaptations can be found in Appendix D.

At a final debrief session, following completion of all conditions, participants experienced suggestibility tests from the pre-induction phase of stage hypnosis,
both to assess baseline levels of motor susceptibility and to replace the motor susceptibility tests embedded within the clinical version of the PCI-Hypnotic Assessment Protocol. This additional assessment took place at the end of the research process, with the intention of counteracting any potential demand characteristics (cues that could lead participants to gain awareness of what is expected) (Orne, 1962b). Such influences had the potential to confound the research if, within the context of the experiment, there was prior exposure to an actual procedure associated with hypnosis. In terms of the PCI’s construction generally, Pekala and colleagues (2010b) argue that in respect of the measurement of trance depth, the PCI is not only less prone than other self-report measures to distortion by demand characteristics, but also by response sets (participant tendency to agree) (Wagstaff, Cole and Brunas-Wagstaff, 2008). These features made the PCI highly desirable as a means of operationalising the effects of charismatic oratory within the current research’s overall purpose.

Supplementing the data collected during the randomised controlled trial, the creator of the PCI, Dr Ronald J. Pekala, supplied intercorrelation matrices from a large peer-reviewed hypnosis study (Pekala and Forbes, 1988) for use within the final analysis (Appendices N and O). This facilitated direct comparison of results during oratory to hypnosis according to the approach applied by Pekala and colleagues to operationalise Izard’s (1977) and Tart’s theories (1972; 1975; 1977) about altered state of consciousness (see Pekala and Kumar, 2007). These analytical methods enabled further exploration of the research question in a non-invasive way (i.e. without the direct use of hypnotic induction) – a more ethically appropriate and practical approach in the light of the investigation being based in a business school and because of the speculative nature of many claims about an association between charismatic and hypnotic effects. There is a detailed description of the research used, and a diagram of the research design (Figure 4.1) in Chapter 4. The methods (participants, procedures, materials and apparatus) and Pilot Analytical Study results are shown in Section 1 and Section 2 of Chapter 5, respectively. Remaining chapters present the four Main Study results (Chapters 6–9), limitations (Chapter 10) and overall conclusions (Chapter 11).
1.2 The use of the terms ‘hypnosis’, ‘hypnotic induction’, ‘hypnotic’ and ‘hypnoidal’ within the chapters that follow

1.2.1 The challenge of defining what hypnosis is for the purpose of the research

Because psychologists conduct most studies related to hypnosis, a major goal was to ensure that, whatever findings emerged, these were comprehensible (and had construct validity) not only from the perspective of the management and leadership literature, but also by the field of psychology. Arguably, this would be particularly important for a management school investigation, if that investigation were to add to academic understanding in a field previously and appropriately dominated by psychology research. This presented challenges because of terminological difficulties that have existed for a long time within the study of hypnosis (see Chapter 3) and the varied (see for contrast: Kaplan, 2007; Kellerman, 2008; Popper, 2002a) and sometimes ‘metaphorical’ way in which labels like ‘hypnotic’ have been used in the management and business literature (for example, Bordon, Schmid and Schmidt, 2014). Indeed, even once the decision had been made to adopt a particular research design, the research still faced a number of obstacles regarding precisely what is and what is not hypnosis.

1.2.2 Use of the terms ‘hypnosis’ and ‘hypnotic induction’ in the present thesis

When it comes to the use of the terms ‘hypnosis’ and ‘hypnotic induction’ within the results chapters below (Chapter 6 to 9) and subsequent discussions in the conclusions, these terms are used according to the 2003 American Psychological Association Division 30 definitions (Green et al., 2005). Adopting such an approach restricted the meaning of the word ‘hypnosis’ (and related terms) to: ‘procedures that are used in research and clinical practice’ (Green et al., 2005: 262). Appendix E gives the APA 2003 definition in full. The consequence of adopting the definition of hypnosis above is that comparison of present research charismatic oratory results to hypnosis only occurs in connection with PCI hypnosis research that uses hypnotic inductions.
which meet the 2003 APA section 30 interpretation of the terms above. Deciding to do this was important for a number of reasons.

The primary reason for doing this, as we will see in Chapter 3 (where the hypnosis literature is reviewed), is that there are many definitions of and theoretical perspectives about the nature of hypnosis. A second feature within this debate, and contributing to the adoption of this position, relates to arguments about the importance of aspects of the Section 30 definition that were contemporary to the conducting of the research. At that time, a number of authorities were pointing to the language of the 2003 APA section 30 definitions as being critical to ensuring a scientific and precise operational understanding for experimental purposes. As an illustration of this, Barnier and Nash (2008) argue that the APA 2003 definition clarifies the two ‘necessary’ components of a true hypnotic induction:

1. **Introduction**: the person administering the procedure tells the subject that what is to follow involves suggestions for imaginative experiences…

2. **The first suggestion**: the definition stipulates that the first imaginative suggestion is administered and operates as the induction. This is an exceedingly important point. If the committee had merely stated ‘and then the hypnotic induction happens’ it would be begging the question: So what exactly is a hypnotic induction? (Barnier and Nash, 2008: 7)

Thirdly, it likewise seemed logical to adopt the APA stance as the PCI hypnosis findings which oratory is compared to (in this thesis) are largely from journals based in the United States.

Rightly, ideas in scientific fields rarely stand still, and just at the point that this thesis was in submission, Section 30 issued a new and revised definition of hypnosis – a definition that no longer contains the refinement above and is much shorter (see Elkins et al., 2015). Significantly, the new APA definition for the first time has taken a decisive side within the state/non-state debate and arguably one that from the perspective of the research method taken up in the present investigation adds more validity to the findings, as the definition of hypnosis offered is now:
A state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion. (Elkins et al., 2015: 6)

with hypnotic induction now merely articulated as:

A procedure designed to induce hypnosis. (Elkins et al., 2015: 6)

The Section 30 definition of hypnotisability and normal distribution of hypnotic susceptibility within the general population is equally compressed, and is:

An individual's ability to experience suggested alterations in physiology, sensations, emotions, thoughts, or behaviour during hypnosis. (Elkins et al., 2015-16)

No doubt, much ink will spill over this shift in position over the next few months, particularly from opponents of an altered state hypothesis. Therefore, in the present thesis it seemed prudent to maintain the 2003 definition when comparing oratory with hypnotic induction because of the precision of the earlier definition with regard to what is to be considered an induction and the arguments advanced by authorities such as Barnier and Nash (2008).

More generally, when it comes to the literature reviews and particularly the uses of the terms 'hypnosis', 'hypnotic' and 'hypnotism' the author has taken (by necessity and for practical reasons) a more liberal stance, with these terms applied in the way used by the authors cited.

1.2.3 Hypnoidal state (Pekala, 1991) and the specific definition of 'hypnotic' that using this makes possible

If defining the 'hypnotic condition' (the input side of the process) is controversial, this is nothing compared to the varied views about how to define the effects of hypnosis (the output). Although this may be true, one of the reasons for being drawn to the PCI and its related analytical approaches is that it offers a more precise definition of the term 'hypnotic' (when it comes to the effects of hypnosis) and one which allows for the assessment of trance depth (hypnoidal state) outside of a hypnotic induction. Thus, with regard to the current research, the term 'hypnoidal' (Pekala, 1991) only appears when
describing the statistic yielded by the PCI regression equation, shown to predict Harvard Group Scale of Hypnotic Susceptibility Scores (Shor and Orne, 1962) (Pekala and Kumar, 2007). Further, ‘hypnotic’ is seen as a hypnoidal state exceeding a predicted Harvard Group Score (pHGS) in excess of pHGS = 7.0 (the average state experienced by high hypnotisables during hypnosis). Chapter 6, in the introduction to Main Study A, gives a full explanation of the construction of this measure together with evidence supporting its validity and reliability.

Adopting the PCI and its associated analytical approaches allowed not only for the exploration of trance depth during oratory, and for a clear definition of the term ‘hypnotic’ but also for a read-across to the wider hypnosis literature that has explored the condition using the questionnaire and the related PCI-Hypnotic Assessment Protocol. In the context of the present research, and the search for a means to identify ‘hypnotic’ effects outside of a formal induction, this permitted the following analyses, whilst maintaining the integrity of the definitions above:

- measurement of trance depth (Pekala and Nagler, 1989; Pekala, 1991) during oratory and a further comparison beyond the present research conditions to all available data relating to Pekala and colleagues’ ‘general measure of trance’ (or hypnoidal state), through the construction of trance tables (Appendix B). The tables contain mean hypnoidal state scores for 142 conditions and sub-groups within conditions and represent the largest summary of PCI research data to date.
- use of adapted PCI-Hypnotic Assessment Protocol items (Pekala, Kumar and Maurer, 2005; Pekala and Wickramasekera, 2007) enabling some of the protocol’s pre- and post-questions to be applied to a charismatic speech. This facilitated the exploration of areas such as expectancy, imagoic suggestibility and self-reported depth of influence, as well as comparison with the pattern of relationships between these variables.
- analyses of the structure of consciousness according to Singer (1977), Izard (1977) and Tart’s theories (1972, 1975, 1977) through the assessment of intensity, bonding and overall pattern effect change,
respectively (Pekala, 1985; Pekala, 1991; Pekala and Kumar, 2007); again, the findings were then able to be compared to the known effects of hypnosis

- cluster analysis to identify follower types paralleling the identification of hypnotic types during hypnosis (Pekala and Forbes, 1997). In particular, it was possible to compare the ‘phenomenological intensity profile’ (Pekala, 1991) of the most deeply influenced follower type (labelled in Study D as Type V followers) with what is known about the response of hypnotic ‘virtuosos’ to deep hypnosis (Cardeña, 2005). The identification of types by extension enabled reflection on theories related to follower type in the management literature, particularly those of Kellerman (2007; 2008). Kellerman has, for example, used the term ‘hypnotic’ with regard to what she called ‘diehards’ (the most engaged of followers).

These four approaches in turn form the basis for the four Main Studies’ specific propositions and the interrelated hypotheses that the research design afforded evaluation of (stated at the end of this chapter).

Extensive review of the literature showed that, even without the direct use of hypnosis, the PCI would be able to detect significant changes in the subject experience of consciousness associated in the literature with hypnosis, such as increased trance depth, altered state of consciousness, and intensity changes associated with Singer’s theories of altered state (Singer, 1977) – for example, attenuated volitional control and self-awareness. In parallel to this, the PCI provides operationally precise measures related to altered state and altered experience (including altered time sense) – areas that one would expect to find amplified in any condition that was creating a parallel effect to hypnosis.

1.3 The literature that inspired this research

1.3.1 The frequent association made between the general use of the term ‘hypnotic’ and the concept of charisma

There are common themes uniting writers who have associated hypnosis and particularly the word ‘hypnotic’ with charismatic leadership. This is true for a range of fields and disciplines (Bryman, 1992; Estabrooks, 1943/1957;
Fishman, 1964; Gardner and Avolio, 1998; Harris, 1979; Kellerman, 2008; Popper, 2000, 2002a; Reed, 1999; Schjoedt et al., 2010; Willner, 1984). Some have suggested that certain forms of group behaviour are explainable, in part, by looking at the way that hypnosis appears to work (Le Bon, 1895/1947; Estabrooks, 1943/1957; Freud, 1921/2001). In particular, writers will sometimes speak of the inspirational effects of charismatic leadership oratory as being ‘hypnotic’. Gardner and Avolio (1998), for instance, provide a good illustration of the way many writers have juxtaposed the terms ‘charismatic’ and ‘hypnotic’; and in doing so have associated hypnosis and charisma:

Their inspirational effects [charismatic leaders] are readily apparent from audience reactions. For instance, people describe the voices of charismatics as captivating and their eyes as magnetic and hypnotic (Bryman, 1992; Willner, 1984). Charismatics also project a powerful, confident, and dynamic presence through their body posture, speaking rate, gestures, smiles, eye contact, and touch. (Bass, 1985a, 1988; Gardner and Avolio, 1998: 38)

Such descriptions are far from limited to the leadership literature. In similar vein, Estabrooks (1943/1957), a leading authority on hypnosis in the 1940s, and one of the pioneers of modern scientific research in the field, once suggested that:

We can, I think, make out a convincing case that basically Hitler’s emotional domination of the crowd . . . was only the attack of the stage hypnotist one step removed. (Estabrooks, 1943/1957: 120-121)

Estabrooks’ assertions, which include proposing a direct relationship between oratory itself and the effects of hypnosis, prompted the author to attend stage hypnosis training (outlined below, section 1.3.2) with the intention of examining these claims more carefully. As Estabrooks expressed it in the opening of the final chapter of the same book:

The reader will, in general, be familiar with two types of hypnotism, that used by the psychologist in his laboratory and that used by the stage performer. . . The writer would call attention to a third type. . . The orator, in
general, be he on the radio or directly addressing an audience, uses all the psychological tricks of the hypnotist and gets most of the results achieved by the latter. (Estabrooks, 1943/1957: 235)

The implications for the results of the way that the stage performer embeds hypnosis within a social process led publicly by an ‘orator’ (the stage hypnotist), and the importance of the experience of suggestibility tests as a precursor to a ‘call for volunteers’, are discussed in depth in the final conclusions.

Although it is true to say that the charismatic literature referencing hypnosis is largely from the political sphere, the relevance of the debate about this possible aspect of charisma is nonetheless important across domains (including management). Many writers have documented the disastrous consequences of inappropriate charismatic influence on business practice in some circumstances (see for examples, Clarke, 1997; Tourish and Vatcha, 2005), with a parallel made to the way ‘cults’ function around a leader (Tourish and Vatcha, 2005). Some employees in such situations have even associated the word ‘hypnotic’ with the business’s failure, as in the case of the collapse of Enron:

Another reason was Skilling’s leadership. He was charismatic and intimidating. He was very hypnotic, and convincing. He is sharp and could sell anything. If you were going to ask a bunch of questions, he would intimidate you and make you feel you were not smart enough to get it. (Beenan and Pinto, 2009: 6)

Such references are not only limited to employee testimony but often appear within the overarching claims of academics. Referring to the boards of companies that fail, and ‘dysfunctional’ CEOs associated with them, Barnard (2008) goes so far as to claim that ‘they seduce victims with a hypnotic charm that masks their true nature as pathological liars, master con artists, and heartless manipulators’ (Barnard, 2008: 406). Furthermore, and perhaps even more remarkably, commentators in the world of economic and financial policy analysis have also made such associations when discussing contemporary financial crises. For example, the Institut für Makroökonomie und Konjunkturforschung (Macroeconomic Policy Institute) recently produced a
paper entitled ‘Hypnosis Before Wake-up Call? The Revival of Sovereign Credit Risk Perception in the EMU-Crisis’, in which the following argument is given:

Hence, we argue that the optimism which spread with the EMU [European Monetary Union] convergence process involved a hypnotic effect around the perception of fundamentals in pricing sovereign credit risk. In accordance with the terminology of Giordano et al. (2013), the increased sensitivity for fundamentals with the onset of the financial crisis represents the wake-up call for leaving that state of hypnosis. (Bordon, Schmid and Schmidt, 2014: 7)

1.3.2 Attendance at stage hypnosis training as a participant

Somewhat surprisingly, the current academic literature hardly documents the stage hypnosis process at all – although there are many popular treatises. Instead, it has tended to focus on the debate about whether there are negative effects of participation in such entertainment as a subject on stage, or not (see Heap and Aravind, 2002). This said, there are some short descriptions of the procedures generally applied, in Yapko (2003) and Barber (1976b).

To support a deeper understanding of the argument presented by Estabrooks (1943/1957) (that Hitler’s and other charismatic orators’ abilities to manipulate crowds relate to stage hypnosis), the present author attended stage hypnosis training by Jonathan Chase, a working stage hypnotist and author of a number of publications (Chase, 2000, 2006, 2007), delivered with his partner, Jane Bregazzi. The training, entitled The Art and Safe Application of Stage Hypnosis, took place between 5 and 7 December 2008. The final chapter outlines learning from this attendance that was relevant to the findings in the four Main Studies. Additionally, attending this training supported the decision-making process regarding what motor suggestibility tests to use to replace some tests in the PCI-Hypnotic Assessment Protocol.
1.3.3 Explaining the frequent association between charismatic leadership and hypnosis, and the origins of the association, whilst being cautious about such associations

In the ensuing years since Le Bon and Freud’s observations, many writers in a wide range of fields have associated hypnosis with crowds, group process and, of course, leadership. One explanation for the ostensibly lax use of the term ‘hypnotic’ in academic fields outside psychology is that it is a consequence of the extensive and liberal use of the term more widely. For whilst such references are frequent within the formal literature, it is in respect of popular culture and thinking that they abound, as is shown by numerous internet discussions and articles – a fact that the academic field of hypnosis occasionally notes and comments on. Kihlstrom (2008), for example, reports that ‘a Google search for the terms Hitler and hypnotist yielded 48,000 hits, including “The George W. Bush Hypnosis File” ’ (Kihlstrom, 2008: 38). The reader can easily find similar mythologies using an internet search surrounding leaders such as Richard Branson and indeed Martin Luther King and the Lincoln Memorial Address (used in the present investigation). There are, of course, two main possibilities for this: in the first case, that there is a basis for the association (direct or indirect); alternatively, that there is the possibility that the rather vague and sometimes inaccurate uses of the term ‘hypnotic’ are merely examples of the sort of misattribution of ideas that Feynman described as ‘cargo cult’ thinking (Feynman, 1974).

Feynman (1974) famously criticised educational and psychological studies of the 1970s, comparing their approaches to the beliefs of a ‘cargo cult’ people from the South Seas who during the Second World War continued to put fires along the side of runways where transport plans had landed until long after the conflict was over. This group of people also made a wooden hut for a ‘controller’ to occupy. The controller wore mock headphones on his head with bamboo sticks like antennae. Cause and effect had been confused and the people had come to believe that if they were to follow the ritual correctly the effects would be as before (the delivery of cargo). The analogy in respect of hypnosis is a strong one, for (as we shall explore in Chapter 3) the early use of the procedures (such as in Mesmerism) were dominated by beliefs that the
effects were caused by the person leading the process and their ability to tap into external forces, rather than the trait susceptibility of the subject. This thesis finds its inspiration in the modern recognition of what lies at the heart of the hypnotic process. In other words, the desire has not been to explore the concept of the charismatic leader as a form of hypnotist; rather the author’s intention has been to explore whether the effects of trait susceptibility (as they emerge within the hypnotic process) are found within followers during leadership contexts, and therefore to determine whether forms of follower susceptibility exist. By extension, the current research has attempted to establish if such susceptibilities (should they exist) relate to, or function in a similar way to, hypnotic susceptibility in respect of what is known about the phenomenology of altered state of consciousness in response to a hypnotic induction.

Returning to the frequent association of the term ‘hypnotic’ to leadership and related group processes, to begin to explain the association phenomenon from the perspective of the literature, we need to look a little deeper and further into the past. To begin with, returning to Estabrooks’ contentions, it is not only the case that strong associations between war and mass hypnosis occurred after the Second World War was over. In May 1939, before the outbreak of war, and in a serious attempt to connect the then current psychological theory with the emerging political situation, Waeder (the noted psychoanalyst who studied under Anna Freud and Herman Nunberg), put the hypnotic leadership association in this way:

> The mass situation has often been compared with hypnotism. This is more than simply an analogy. Psychoanalysis teaches us that in hypnosis the person looks to the hypnotist to some extent for inner authority. Hypnosis is, so to speak, a mass à deux and masses are hypnotized multitudes in which the individual members identify themselves with one another. It is a matter of choice whether one treats group hypnosis in psychology under the heading ‘Hypnosis of Masses’. (Waelder, 1939: 25)

Waelder extends the argument more generally to leadership by making a reference to the debates about whether there is a limit to the extent that a
hypnotist can place demands on his subjects and comparing this to the leader who demands too much of his followers:

Frequently, the qualities of leadership are lost because the leader has demanded far too much of his followers, just as people who are hypnotized suddenly awaken when the hypnotist makes excessive demands on them. (Waelder, 1939: 27)

Here again, the debate in hypnosis about whether there are limitations to what the hypnotist can make even high hypnotically susceptible individuals do (it should be said) is a long one and in connection with the hypnotic leadership hypothesis, a highly relevant one. Indeed, it reaches back to the early study of the subject (see Orne (1962a) for a comprehensive review).

Orne (1962a) summarises the debate that existed contemporaneously to Estabrooks’ claims as follows, making a similar argument: namely, that if reality were to be ‘falsified’ sufficiently, high susceptibility individuals might be capable even of things they would otherwise find distasteful:

Heron (1952), Weitzenhoffer (1949), and Lyon (1954) have pointed out that there is a significant difference between directly or indirectly suggested antisocial behaviour. . . in effect, that one cannot compel the subject to do what he does not want to do, but one can falsify reality to make antisocial behavior appear acceptable. In this regard, Wells (1941), for example, has argued that it is not necessary to falsify reality, and he concludes that the ability to compel the subject to undertake whatever action is suggested is indeed the very definition of hypnosis. (Orne, 1962a: 149)

Estabrooks, for one, as well as seeing a connection to leadership, thought that should the conditions be right it would be perfectly possible to make high hypnotisables act in a way that otherwise they would not (1943/1957; 1951) and potentially act as a weapon of war (Estabrooks, 1971).

That these discussions appear in the hypnosis and psychological literature of the mid-to-late twentieth century makes it hardly surprising that academic dialogue about the possibility of a relationship between charismatic leadership and hypnosis occurs so frequently and to this day, particularly with regard to
leadership’s most extreme forms and in totalitarian and cultic leadership (Popper, 2002a). It is, after all, easy to see the notion of ‘falsified’ reality as comparable to the forms of technique and influential processes used in brainwashing (Lifton, 1969) and cults such as ‘love bombing’ (Singer, 1996/2003). Some have even directly suggested the existence of forms of ‘unethical hypnosis’ within such social situations (Dubrow Eichel, 1985; Dubrow Eichel and Dubrow Eichel, 1985). In relation to love bombing, for example, the already recruited group of cult members falsify reality around a new recruit in respect of feelings of attachment and bonding:

As soon as any interest is shown by the recruits, they may be love bombed by the recruiter or other cult members. . . Love bombing is a coordinated effort, usually under the direction of leadership, that involves long-term members’ flooding recruits and newer members with flattery, verbal seduction, affectionate but usually nonsexual touching, and lots of attention to their every remark. (Singer, 1996/2003: 114)

Techniques such as love bombing clearly represent forms of ‘falsified reality’: the extent to which hypnotically susceptible individuals may be more open, or not, to influence involving such techniques; and the wider question of cult membership remains an area which is frequently discussed but again remains without empirical research, as noted by Katchen (1992).

Secondly, it is important to recognise that a hypothesised relationship extends much earlier into the past, being made by many credible authorities of their day. Looking back in this way, the origin of the association within the formal literature is almost certainly Le Bon’s The Crowd: a Study of the Popular Mind (Le Bon, 1895/1947). For Le Bon the then model of hypnosis provided a basis for understanding the irrational crowd and a ‘scientific’ justification for his negative depiction of such groups. As is argued by McGuire (1987) in his discussions of Le Bon, applying the notion of hypnosis and suggestion to the behaviour of crowds supported an assumption of underlying automatic pathology in the case of all social processes and interactions. Le Bon expressed it thus: ‘one of the general characteristics of crowds is excessive suggestibility . . . in all human agglomerations, a suggestion is contagious’ (Le Bon, 1895/1947: 25).
Contagion, in Le Bon’s view, ultimately produced a state of ‘group mind’ in which individuals lost their sense of self-control in a similar way to that of the hypnotised person. Zimbardo, for one, later developed this theme in his discussion (1969) of ‘individuation, research and order’ versus ‘deindividuation, impulse and chaos’. Specifically, Zimbardo makes the point that a number of antecedent variables (such as anonymity) might result in an attenuation of self-observation and processes of self-evaluation, resulting in a weakening of controls related to emotions such as fear, guilt and shame. In turn, this could result in lower thresholds related to the exhibition of anti-social behaviour. It is also the notion of contagion during a financial crisis that Bordon, Schmid and Schmidt (2014) are referring to in the work of Giordano et al. (2013), views which appear strikingly similar to the forms of argument and ideas presented by Le Bon. Such parallel forms of thinking are fascinating in themselves and illustrate just how embedded and with what longevity many of these ideas have persisted.

1.3.4 The persistence of the associations made within the literature

Le Bon, in like manner, did not produce these ideas in isolation. Rather, his work reflects the generalisation in his time of observations about hypnosis to social process. As one of Le Bon’s contemporaries, Gabriel Tarde, put it in 1891:

The social state, as the hypnotic, is only a form of dream, a dream of command and a dream of action. Having only suggested ideas and thinking them to be spontaneous: this is the illusion of the somnambulist, and, as well, the social man. (Tarde, 1891: 77)

Ideas such as ‘group mind’ and seeing the social state as a form of dream, presuppose and thus evoke the idea of some form of altered state of consciousness being present, not just in the individual but across groups in some situations. This theory is one that has persisted and re-emerged over time within the debates, in commentaries by writers such as Durkheim (1965), Lindholm (1992) and Popper (2002a). Durkheim (1965) takes the discussion as far as to suggest that some form of unique altered state of consciousness might exist in a group whenever they find themselves in a closer active relationship, resulting in depersonalisation (what he calls ‘collective effervescence’). Lindholm (1992) and Popper (2002a) both suggest a relationship between
some forms of religious practice and extreme charismatic contexts and altered state – in Lindholm’s case, Scientology and in Popper’s, contexts such as Jonestown and the Manson family – with a parallel made to the effects noted by Lifton (1969) in his studies of Chinese communist prisons and ‘thought reform’.

Most importantly for the continuation of an association between group behaviour and hypnosis, Le Bon’s ideas were taken up by Freud, whose discussions of leadership attempted to compensate for the fact that other contemporary theories had failed to explain aspects like the contagion of emotions within groups (such as panic). To this end, Freud built on Le Bon’s notion of ‘group mind’, proposing that emotional contagion in crowds was directly analogous to the use of ‘suggestion’ in hypnosis (Freud 1921/2001: 116). In determination of why such a relationship might exist in leadership situations, Freud suggests the bond that exists between followers and leaders has a parallel with the state of trance during hypnosis and falling in love, his premise resting on the proposition that when such an identification process takes place, followers may engage in an ‘orgy’ of emotions both simple and strong, leading perhaps to them becoming ‘swept’ away by the leader.

Let us consider how hypnosis is induced. The hypnotist asserts that he is in possession of a mysterious power which robs the subject of his own will, or, which is the same thing, the subject believes it of him. This mysterious power (often described popularly as animal magnetism) must be the same that is looked upon by primitive people as the source of taboo, the same that emanates from kings and chieftains and makes it dangerous to approach them . . . (Freud, 1921/2001: 95-96)

Interest in Freud’s ideas has continued to the present day, further perpetuating the association between hypnosis and leadership (see for example, Cluley’s discussions (2008)).

A further reason for the continued association between hypnosis and charismatic leadership resides within the very definition of charisma itself. Sohm (1892) used the term for the first time in the context of religious transformations. Etymologically the word ‘charisma’ (χάρισμα) means ‘a gift of grace’ (Beekes and Van Beek, 2010), the implication being that charismatic
qualities are visible to followers and bestowed on someone by a higher power, ideas that chime with some of the early modern forms of 'hypnotic' showmanship, such as Mesmerism (see Chapter 3).

In terms of leadership theory, Weber (1922/1963) was one of the first writers to take the notion of charisma forward and embed it within thinking about leadership generally. Most significantly, Weber holds it important that followers recognise charismatic leaders as endowed with some form of special power and thus, like Freud, placed the cause of charismatic effects within followers and within the relationship between followers and leaders, not within leaders per se. In doing so, Weber recognised that there was a complex social process surrounding such a relationship and one in which charismatic effects were just one form of interaction.

Weber goes on to suggest that there are three types of authority-based relationship. The first of these, ‘charismatic authority’, acquired its influence not from rules or tradition but rather from a follower’s faith in a leader’s character and abilities. For Weber, this type of leader was characterised by being:

. . . set apart from ordinary men and treated as endowed with supernatural powers . . . not accessible to the ordinary person but [which] are regarded as of divine origin or as exemplary, and on the basis of them the individual is treated as a leader. (Weber, 1922/1963: 358-359)

Weber’s second form, ‘traditional authority’, relies on established beliefs and ‘the sanctity of immemorial traditions’, whilst the third form of authority relates to what Weber called ‘rational-legal’ authority, with this form based on rules and the legality of those rules.

Weber’s work extends beyond just an explanation of the dyadic interaction between the charismatic leader and the follower, recognising that the context around this relation may be a key factor, particularly if such a context involves a crisis. Trice and Beyer (1986) summarise Weber’s thinking into five components:

- the presence of a person perceived as having exceptional or extraordinary gifts
• some form of crisis
• the offer of some form of radical solution
• followers attracted to the person because of belief in a transcendent link to them
• repeated success validating the person’s gifts.

Drawing on Weber, Fromm put forward the idea that where a group of people find themselves in a state of psychological distress they may be particularly prone to the attraction of charismatic leaders (Fromm, 1941), as indeed arguably are those seeking relief from hypnotherapy. Reprising Orne’s summary (1962a) of evidence about hypnosis and anti-social behaviour, a plausible argument emerges that, if reality were to be ‘falsified’ sufficiently by the apparent injustice of a contemporary situation, it might be enough to lead a small group of the most susceptible to charisma to engage in behaviours beyond what even they might have thought likely.

1.3.5 Leaderless followers and their relevance to the association between leadership and hypnosis

That highly susceptible followers exist (in the general sense) is perhaps not up for debate. Repeatedly during the twentieth and early twenty-first centuries ‘followers’ have carried out extraordinary acts, apparently under the influence of a leader; whether the underlying mechanism compelling such people to act in such ways is related to hypnosis is another question. However, arguably the best evidence for such a relationship is that the presence of a leader does not appear to be essential in many situations. One area that has demonstrated this is the study of leaderless yet coordinated groups. In short, extreme behaviour, identified in Popper’s case studies (2002a), and shown in studies of radical yet leaderless contexts (see Blazak, 2001; Bousquet, 2012; Joosse, 2007; Sageman, 2008), does not always seem to require a leader – just the idea (or ideology) within a context of perceived crisis may be enough to trigger behaviour such as terrorist recruitment and action. This is precisely what a controlled evidence-based version of the hypnotic leadership hypothesis predicts. For, if hypnosis and leadership are related, then the presence of a specific leadership technique, approach or style should also not be necessary,
just as in hypnosis where the type of induction used is largely irrelevant to the strength of hypnotic effect (Kirsch, 1999). In the same way that hypnosis is really all about the subject (their susceptibility, expectancy and attitude) so too it may be with followers and leadership. Equally, self-leadership seems as possible as self-hypnosis.

The implications of such a theory being correct are profound, perhaps illustrated by a new contemporary example emerging in the form of the radicalisation of followers of the Islamic State of Iraq and the Levant (ISIL), also known as just ‘the Islamic State’ (La Palm, 2014), many of whom may have encountered greater opportunity for radicalisation on the internet (von Behr et al., 2013).

With regard to the point above, some of ISIL’s followers appear to have had little contact with anything other than online media (and the social networks around these) – as may be the case with a 15-year-old girl from Bristol who left home to join the organisation apparently ‘self-radicalised’ by viewing material on her phone and computer (Sky News, 2014); and with many of the other converts who have been recruited recently. Further, ISIL, although behaving in similar ways to the followers of Nazism in the pre-war period have no clear single charismatic leader to follow: there is no Adolf Hitler, no Ghandi or Martin Luther King. Associations and parallels, of course, are not evidence (at least not within the fields that have predominantly studied hypnosis), as Feynman (1974) reminds us; and so before proceeding further with such ideas we should consider briefly the core evidence about hypnosis and what it is.

1.4 Hypnotic susceptibility and the possibility that it may underpin people’s engagement with the world beyond the effects found in formal hypnosis research

1.4.1 How hypnotic susceptibility is measured and its distribution in the general population

The advances made in hypnosis research (alluded to above and described in detail in Chapter 3) have been mainly due to the use of scales that measure hypnotic susceptibility (for example Shor and Orne, 1962; Weitzenhoffer, 1959). So successful have been such approaches that even though researchers
dispute the nature of hypnosis (particularly in connection to altered state of consciousness – the state/non-state debate) the fact that susceptibility exists is beyond doubt.

First and foremost, it has been clear for some time that there is a normal distribution of hypnotisability in the general population (Hilgard, 1965). In other words, people vary according to the level of hypnotic effects they can demonstrate/experience after an induction. Typically, hypnotic susceptibility scales contain a series of increasingly demanding actions, or experiences. The level that people reach indicates how hypnotisable they are (see Heap, Brown and Oakley, 2004; Barnier and Nash, 2008, for wide reviews). There is a detailed discussion of the nature of the incremental tests within the Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962) in Chapter 6, as this is relevant to the predicted Harvard Group Score (pHGS) used in Main Study A to assess trance depth, or hypnoidal state (Pekala, 1991; Pekala and Kumar, 2007).

As already elaborated on in relation to hypnotic susceptibility in the general population, most people show moderate levels of susceptibility, about 10–15% of people are highly hypnotisable and 15% have low susceptibility. There is some evidence that this trait may be stable over a person’s lifetime (Piccione, Hilgard and Zimbardo, 1989) and heritable (passed on genetically) (Morgan, 1973; Morgan, Hilgard and Davert, 1970). Likewise, in recent years, brain-imaging techniques have further enhanced the field of study and have indicated that there is a functional neuroanatomy related to high hypnotisability (Gruzelier, 1998; Oakley, 1999; Gruzelier, 2006). Naish (2010), for example, has found differences in hemispheric asymmetry between high and low hypnotic susceptibility individuals tested using a temporal order judgement task. Asymmetry is greatest with high hypnotic susceptibility individuals who have a faster-acting left hemisphere in the waking state, but faster right hemisphere following hypnotic induction. There is, parallel to this, evidence that the presence or absence of two sub-types of the COMT gene may predict hypnotic susceptibility, although this appears to hold true only for men, but not for women (Lichtenberg, 2000).
That such a trait may be heritable, that it appears to be stable and that this trait correlates to physiological differences in the brains of highly susceptible people compared to low susceptibility individuals – all raise the question as to whether the existence of a wide range of susceptibility may have arisen through selection pressures. By extension, the possibility is invoked that there may have been some form of evolutionary advantage in a proportion of humans being highly susceptible whilst others remain almost impenetrable in terms of the creation of effects – a point we will return to later and particularly in the final chapter.

Despite the fact that the nature of the procedure used appears to be largely irrelevant to the strength of hypnotic effect attained (see for an extensive discussion, Kirsch (1999)), hypnosis has not remained completely aloof to the recognition that the input side of the equation is also worth consideration. This has led recent writers to make a clear distinction between the different aspects of hypnosis as a phenomenon. Barnier and Nash (2008), for example, draw out the difference between hypnosis as procedure (what a hypnotist does/the use of suggestion) and hypnosis as product (the inhibition or production of hypnotic effects following a hypnotic induction). They also point to the different roles of attitude and aptitude (hypnotic susceptibility) within the process overall. Broadly speaking, the components of the hypnotic process that result in levels of effect can be summarised as ‘expectancy’ (the extent to which people expect to be hypnotised – which can be influenced by the nature of the suggestions used), attitude (their willingness to experience hypnosis) and finally aptitude (the person’s trait susceptibility).

Barnier and Nash (2008), summarising the literature, propose that attitude, rather than operating as a dosage effect (i.e. increased positive attitude increases performance), instead functions during hypnosis in a way more akin to a threshold effect. As they put it, ‘it does not help to be especially willing, but one must be at least somewhat willing’ (Barnier and Nash, 2008: 10). Concerning aptitude (measured by a subject’s ability to produce hypnotic effects during an induction), trait hypnotic susceptibility is in contrast a ‘necessary cause’ because:
in the complete absence of hypnotisability, there exists no introduction, no series of suggestions that can induce hypnosis-as-product. No wood, no fire; just a spent match. Of course, in some cases, there is at least some kindling, and in this sense then hypnotisability. (Barnier and Nash, 2008: 11)

1.4.2 The possibility that hypnotic susceptibility may be a factor in some forms of leadership

Again, we find similar ways of thinking in writers who claim the existence of a form of ‘leadership’ in which hypnotic effects (such as loss of sense of self) may exist. Most notable, with regard to this way of conceptualising influence, are the fire metaphors used by Popper (2002a) in discussions related to his theories of ‘hypnotic leadership’.

For Popper, charismatic leadership, particularly in its extreme form, is like a fire, with the leader taking the role of the spark, followers the fuel, and the context and circumstances as the oxygen that feeds the flames. In a similar way to hypnosis, it is (by extension) not enough for there to be a spark (the leader). In other words, in the context of oratory, no matter how many speeches a person might give using all the trademark skills of the orator, without followers who are open to the ideas in the speech because of the context, and a proportion of followers who are highly susceptible to such processes, the fire of charismatic influence will not burn. Nevertheless, just as in the physical world, once a small amount of dry kindling is ignited, providing the surrounding circumstances are amenable, other types of fuel can burn until even the wettest timber eventually becomes dry enough to burn.

In discussing the notion of variable follower types, Kellerman (2007, 2008) makes some interesting observations about how the existence of a group of the most influenced can eventually affect a wider group. Kellerman (2007, 2008) proposes five types of follower with decreasing levels of engagement with the leader (‘diehards’, ‘activists’, ‘participants’, ‘bystanders’ and ‘isolates’). In a similar manner, she goes on to suggest that Hitler’s effect on the diehards was ‘hypnotic’ (2008). In turn, the existence of such diehards may have amplified the effect of also having groups such as ‘bystanders’ and ‘isolates’ who stood
back and facilitated the movement to take hold. We will return to these ideas, particularly in Chapter 2 (the review of the charismatic leadership literature), Chapter 9 (where the results of cluster analysis will be discussed and a comparison made of the five identified types to what is known from other PCI research into hypnotic virtuosos during deep hypnosis) and in Chapter 11 (the final chapter).

The reader can find fuller reviews of the literature examining charismatic and transformational leadership, hypnosis and altered state of consciousness in Chapters 2 and 3. Chapter 2 includes a discussion of the specific ‘hypnotic leadership’ literature (e.g. Popper, 2002a) and ideas that have emerged concerning the possibility that charismatic influence relates to follower susceptibility (potentially paralleling the role of hypnotic susceptibility in hypnosis). Popper’s book *Hypnotic Leadership: Leaders, Followers and the Loss of Self* (Popper, 2002a), provides one of the most striking contemporary references and arguments for a relationship in extreme leadership settings. It also provided much of the inspiration behind the desire to search for, identify, and implement a research design that could not only successfully operationalise the effects of charismatic leadership but additionally compare these effects to hypnosis (see Research Aims 1 and 2, above).

**1.4.3 One empirical study from within a management school that suggests that hypnotic effects may be evidenced outside of a hypnotic induction and a laboratory-clinical context**

As already alluded to, despite the fact that the term ‘hypnotic’ appears in a wide range of literature and there are widespread beliefs about the ‘power’ of the procedural aspects of hypnosis in daily life (outside of the process of formal induction), few studies have actually explored this possibility empirically. One management school study that has looked at this is Kaplan’s study of the effects of the hypnotic-suggestive communication level of advertisements on their ability to influence (Kaplan, 2007).

In Kaplan’s research design, qualified hypnosis practitioners rated a range of adverts according to the extent to which they included forms of suggestion commonly applied in hypnosis (and taken from Hammond (1990) and Yapko
The results of the study clearly indicated that advertisements with high suggestive communication levels predicted higher advertising effectiveness better than advertisements with low levels of suggestion. This is a remarkable study as it suggests that the influence of suggestion was sufficient, on average, to affect a whole population group and not just high hypnotisables within the group.

This finding opened up the possibility that, in the context of the present research design, average trance depth (Pekala, 1991) might increase significantly for the whole population in response to oratory, not just for subgroups within the population. An analysis, early in this research, of the speech intended for use in the current research by 10 participants who had recently attended a hypnosis training programme, implied that against Kaplan’s scale (Kaplan, 2007: 61-62) Martin Luther King’s Lincoln Memorial Address would also have been classed as containing high suggestive communication levels. Indeed, as we will discuss in Chapter 6, it was the case, in the final analysis, that trance depth on average was significantly higher during King’s speech than during both the active control and baseline control condition.

1.4.4 Similarities in the definitions of hypnosis and leadership, and the possible shared relationship with the effects of imaginative suggestion

Kaplan’s study (2007) highlights a further possible way in which hypnosis and leadership might relate to each other, particularly within the realm of oratory, specifically in the area of forms of suggestion which trigger high levels of internal imagery (imaginative suggestions related to hypnosis (Sheehan, 1979)). Thus, comparing some of the ‘procedures’ of charismatic leadership with the dominant approach to induction, found almost universally in hypnotherapy, provides a further area of commonality. However, in doing so we must recognise that (if there is a relationship between hypnosis and leadership) we are dealing with areas of expectancy and attitude, not hypnotic effect (the result of hypnotisability). In other words, assuming the hypnotic leadership hypothesis to be true, we must acknowledge that when looking at inputs like the use of imagery, we are in fact looking at features of the process
that, from this perspective, make people at least ‘somewhat’ willing, as Barnier and Nash put it (2008), but not at the ‘necessary cause’ (trait susceptibility).

On the other side of the discussion, it is suggested by many that charismatic leadership communication is underpinned by language, vision (the creation of a mental image of an idealised future), metaphor and rhetoric (see for discussions: Conger, 1989; Conger, 1991; Conger and Kanungo, 1988a; Emrich et al., 2001; Gardner and Avolio, 1998; House and Shamir, 1993; Popper, 2002a; Tan and Wee, 2010). All in all, oratory is seen as central to this process, with research that has examined the visionary language of exemplary transformational leaders demonstrating that language content is usually future orientated, optimistic and highly inspirational (Bennis and Nanus, 1985; Tichy and Devanna, 1986).

Studies of charismatic leadership language in both business and political contexts in a similar fashion indicate that the specific rhetorical style, words, linguistic expressions and symbolism that a leader chooses may affect how emotionally aroused, committed and inspired an audience becomes (Conger, 1991; Den Hartog and Verburg, 1997; Shamir, Arthur and House, 1994; de Vries, Bakker-Pieper and Oostenveld, 2010). Alongside this, the importance of delivery style (Awamleh and Gardner, 1999; Bass, 1985a; 1990b; Willner, 1984) and storytelling (Sharma and Grant, 2011) is also recognised, with some research suggesting that the way in which a speech is delivered may be as significant, if not more so, than the actual content (Holladay and Coombs, 1994).

In parallel, the most frequently used process in hypnosis (as a procedure) and hypnotherapy is the suggestion of future actions; aligned to influential language, presupposition, metaphor and storytelling (see, for example: Battino and South, 1999; Burton and Bodenhamer, 2000; Hammond, 1990; Rosen, 1991; Yapko, 1995). As has been shown by a number of studies, imaginative and sensory-affective involvement closely relate to a person’s ability to experience hypnotic effects (Hilgard, 1979; Weitzenhoffer, 1974). Not only that, although there is variation in definition (Schumaker, 1991), research also shows that the effects of imaginative suggestion are similar, with or without hypnotic induction (Barber
and Glass, 1962; Braffman and Kirsch, 1999; Caster and Baker, 1932; Glass and Barber, 1961; Hilgard and Tart, 1966; Hull and Huse, 1930; Jenness, 1933; Weitzenhoffer and Sjoberg, 1961). This said, as with ‘vision’ in leadership, there is variation in the definition of such suggestibility (Schumaker, 1991).

More broadly, definitions of hypnosis and leadership are also often remarkably similar and usually both contain the notion of influence towards a future goal. The British Psychological Society defines hypnosis as:

... an interaction between one person, the 'hypnotist', and another person or people, the ‘subject’ or ‘subjects’. In this interaction the hypnotist attempts to influence the subjects’ perceptions, feelings, thinking and behaviour by asking them to concentrate on ideas and images that may evoke the intended effects. The verbal communications that the hypnotist uses to achieve these effects are termed ‘suggestions’. Suggestions differ from everyday kinds of instructions in that they imply that a ‘successful’ response is experienced by the subject as having a quality of involuntariness or effortlessness. (Heap et al., 2001: 3)

Northouse, in a wide-ranging review of leadership theory (Northouse, 2004), points to the emerging view that leadership is a process which can be observed in the behaviours of leaders (Jago, 1982) and in the need for leaders and followers to be understood, in relation to one another (Hollander, 1992) and as a collective whole. Northouse synthesises the continuum of views (trait, behaviourist, political and humanistic approaches: Bass, 1990a; Bryman, 1992; Gardner, 1990; Hickman, 1998; Rost, 1990) in a single definition of leadership as:

... a process whereby an individual influences a group of individuals to achieve a common goal. Defining leadership as a process means that it is not a trait or characteristic that resides in the leader, but is a transactional event that occurs between the leader and his or her followers. Process implies that a leader affects and is affected by followers. (Northouse, 2004: 3)
Before moving on, it is worth stating that it is the present author’s contention, expanded on in the conclusions of this work (and drawing on Estabrooks’ observations), that this similarity becomes less remarkable if one looks beyond laboratory hypnosis to the processes of stage hypnosis, discussed in depth in Chapter 11. For in stage hypnosis there is also a social process built around the subjects, the purpose of which is to engage the audience in a series of steps that lead to high susceptibility individuals volunteering to go up on stage with the hypnotist. Once there, the combination of increased expectancy (developed by the stage hypnotist through stagecraft, humour and oratory), the fact that as volunteers the individuals hold an attitude open to being there and trait aptitude (since they have just passed a series of suggestibility tests) has an inevitable conclusion in the hands of the hypnotist.

From such a perspective, it might be that oratory, alongside processes associated with leadership (volunteering, joining something, contributing along with the existing leadership), is acting as a form of suggestibility test – the result of the approach being the identification of the most susceptible; and if they volunteer, ultimately ensuring their presence close to the leader (physically and/or just emotionally). Where there is no leader, an idea alone might be all that is necessary for an individual with high susceptibility to become committed.

1.4.5 Recent neurophysiological evidence that supports the hypnotic leadership hypothesis

The most compelling evidence in support of the hypnotic leadership hypothesis comes from a brain imaging study that drew its inspiration from Weber’s work. Schjoedt and colleagues (2010) used functional magnetic resonance imagery (fMRI) to investigate the effect of perceived charisma on believers in intercessory prayer. They summarise their findings as follows:

We hypothesize that a mechanism similar to that of hypnosis may facilitate charismatic influence. More specifically, we hypothesize that subjects’ recognition of the charismatic authority enhances their susceptibility to charismatic influence by down-regulating their executive system. (Schjoedt et al., 2011: 2)
In their study Schjoedt and colleagues found that where participants thought that a speaker was also a Christian and someone known to have healing powers (participants were told (a deception) that the speakers belonged to either ‘non-Christian’, ‘Christian’, or ‘Christian with healing powers’ groups), perceived charisma inhibited the frontal executive network, with parallels to the effect found in hypnosis studies.

Frontal deactivation indicates a ‘handing-over’ of the executive function to the perceived charismatic speaker similar to a patient’s ‘handing-over’ of executive function to the hypnotist. (Schjoedt et al., 2010: 7)

Brain-imaging studies that have shown similar deactivation during a hypnotic induction include Gruzelier, Gray and Horn (2002), Jamieson and Sheehan (2004), and Egner and Raz (2007). Schjoedt et al. conclude that:

Our findings support Weber’s classic notion that followers recognising the charismatic healer or leader as endowed with special powers is central to charismatic authority; while we agree with other researchers that communication style, ideology and personality as well as context may be important factors in facilitating charismatic influence (Conger and Kanungo, 1987; House and Howell, 1992; Barker, 1993; Kirkpatrick and Locke, 1996; Crant and Bateman, 2000; Gordijn and Stapel, 2008). (Schjoedt et al., 2010: 9)

They go on to argue that aspects of leadership such as communication style and personality may amplify charismatic influence by enhancing followers’ trust. This further down-regulates the executive network and enables a maximisation of a person’s susceptibility to charismatic vision. Replication of the research design above in some form, using the PCI and charismatic oratory, was beyond the scope and methodological opportunities within a business school; and in any case, the present studies were already under way when Schjoedt and colleagues’ paper emerged. However, in the light of the findings from the current investigations, it is the author’s hope that such an approach might prove fruitful in the future. Chapter 11 makes recommendations for future research and explores some potential designs.
1.5 Background to the research and the choice of topic

1.5.1 Activities that led to an interest in this area

The topic of this research and approach taken became a focus for doctoral research because of two ongoing professional interests and levels of activity. Firstly, the author has worked for a number of years as an adviser on UK and international government education contracts, many of which have focused on the design and delivery of leadership development for school leaders. This advisory activity has often involved working for the National College for Teaching and Leadership (formerly the National College for School Leadership) and the Department for Education (formerly the Department for Children, Schools and Families and the Department for Education and Skills). Engagement with the leadership literature was an essential part of this process and led to a wish to complete a PhD in this area. It was during the reading of the leadership literature that the author first encountered the long-standing and fascinating associations made in the literature between charismatic leadership and hypnosis.

A second strand of interest came from the development of a desire to explore quantitative research methods at postgraduate level (the author’s Master’s degree involved only qualitative approaches). This new interest emerged when the author was responsible for the development of all the training on the Labour Government’s Fast Track teaching programme between 2003 and 2010 (which supported 2,500 aspiring school leaders in England at one point). Fast Track was the first accelerated leadership development programme in education in the world, based on blue-chip company fast-stream programme models (see for discussions Churches, Hutchinson and Jones, 2009; Jones, 2010). The Fast Track programme included an assessment centre designed by psychologists and a wide range of training in models from organisational behaviour and leadership-related topics from applied psychology.

The cross-fertilisation between applied psychology within this programme stimulated a particular focus on the question of the extent to which leadership can be learned or may be the result of over-attribution; and particularly, in the case of leadership skills, the effect of leadership language and speeches on
followers. This extended into the area of those elements of applied psychology associated with the field of organisational behaviour. One of these was neuro-linguistic programming (NLP) (Tosey and Mathison, 2009) which claims provenance from the work of Milton Erickson and the use of suggestion for everyday personal development as well as therapeutic activity. NLP was included in the Fast Track programme because of participants’ requests, particularly from those who had encountered it in previous careers (see Churches and West-Burnham, 2008; Carey et al., 2011). Encountering, writing about and researching this field further enhanced the author’s interest in suggestion and the association of hypnosis with a wide range of areas.

During this period of professional activity, to develop further the skills necessary to conduct this research, the author completed British Psychological Society Certificates of Occupational Test Use: Level A (ability) and B (personality) and is on the British Psychological Society Register of Qualifications in Test Use. This additional learning was an important step in developing the appropriate application of the Phenomenology of Consciousness Inventory in this research from ethical, empirical and interpretative perspectives.

In parallel with the development of a personal interest in experimental methods, within contemporary public policy there has been a growing and emerging focus globally on the question of evidence-based practice and the adoption of randomised controlled trials (see, for a summary, Haynes et al., 2012). During the early phases of the investigation, the author was involved, as liaison between the commissioning client, Susan Greenfield (the research lead) and some of her colleagues from the Department of Neuropharmacology at Oxford University, in supporting one of the first large-scale randomised controlled trials in education in England (see Dommett et al., 2013; Elwick, 2013), begun in 2009. This, in combination with the results of the literature reviews at the beginning of this doctoral research fuelled the desire to adopt an experimental method, not only as an appropriate one to explore the present research purpose and main hypotheses but also (as mentioned above) enabling engagement in methodological approaches which had not been studied at Master’s level.
1.5.2 Personal and career development resulting from engagement in experimental research methods

The personal development as an aspect of working on research in this area has ultimately resulted in significant career development opportunities. In June 2013, the author became Technical Director for the delivery of seven randomised controlled trials involving approximately 20,000 children and 900 schools in England, a programme funded by the Department for Education and the National College for Teaching and Leadership. This programme, known as *Closing the Gap: Test and Learn* trained teachers in experimental research methods (Churches, 2016), with the programme designed by the present researcher. The present author has, alongside this, applied learning from the doctoral programme to research publications which make use of an experimental methodology in teaching (Allan et al., 2013; Churches and Allan, 2013; Churches and Dommett, 2016) and in the application of mindfulness to teacher work-related stress (Churches and Gibbs, 2013). The later used the same approach to the measurement of the phenomenology of consciousness that has taken place in the current research (Churches and Gibbs, 2013).

1.6 The research process and relationship to the chapters that follow this one

1.6.1 The three research phases

The research process consisted of three phases. The reader can find a map showing these and the various stages in the process undertaken in Figure 1.1. Phase 1 involved desk research. In this phase, there was a review of the charismatic leadership and hypnosis literature (summarised in Chapters 2 and 3). During these reviews, the author first came across the hypnosis literature that had studied the effects of hypnosis using the Phenomenology of Consciousness Inventory. In particular, the chapter by Pekala and Kumar (2007) in Jamieson (2007) prompted a long and continuing correspondence with Ronald J. Pekala. Various examples within the PCI literature (such as Pekala and Ersek’s (1997) exploration of altered state of consciousness during firewalking and comparison to hypnosis) suggested a possible application to charismatic leadership, should a viable way to operationally define charismatic
leadership be determined. One clear option, because of the importance placed on oratory in the charismatic literature, was the use of a video of a ‘world-class’ charismatic leadership speech (discussed in more detail in Chapter 4).

Following the identification of the Phenomenology of Consciousness Inventory and its methodology as a possible approach to measuring the effects of such a speech, the PCI literature was scrutinised in detail and trance tables were drawn up to facilitate a comparison of any findings to the widest possible range of studies and conditions (see Appendix B). Although many studies have reported Pekala and colleagues’ ‘general measure of trance’ (predicted Harvard Group Scores) (Pekala, 1991; Pekala and Kumar, 2007), and it is possible to calculate this from results tables (even where it is not directly reported), until the present thesis no one had yet compiled a comprehensive table of trance depths for a wide range of conditions. The opportunity to compile such a table represented a further opportunity to fill a gap in research. For completeness, the author reviewed the altered state of consciousness literature in parallel with the PCI literature. This review is included in Chapter 3.

In Phase 2, the final methodology was determined and suitable archive film sourced to provide the experimental condition (a ‘world-class’ leader’s speech) and a pseudo attention placebo condition (archive film chosen to control for the effects of watching the film, crowds and the visual context around the speech). Chapter 4 describes the rationale for the final choice of method following consideration of a number of issues: ontological, epistemological, ethical and pragmatic. It was during this phase that the researcher attended stage hypnosis training (discussed above). Power analysis and sampling then took place, together with a Pilot Analytical Study involving a small proportion of the sample (described in Chapter 5). Piloting of the design indicated viability for the approach and a number of significant findings despite the small sample size. Finally, Phase 3 involved the implementation of the Main Studies and data analysis. Chapters 6 to 9 cover the results from the four Main Studies (A, B, C and D). Each of these chapters begins with an in-depth discussion of the particular analytic approach and prior PCI research evidence, particularly from hypnosis.
Figure 1.1: Research process outline

**Phase 1 – Literature reviews**

**Literature review (part 1)**
- Charismatic leadership
- Hypnosis

**Literature review (part 2)**
- Phenomenology of Consciousness Inventory (PCI) and empirical-phenomenological method (Pekala and Kumar, 2007)
- PCI-Hypnotic Assessment Protocol, if items adapted (permission sought from Pekala) with cluster analysis to identify follower types, paralleling identification of hypnotic types

**Instrument identified for use as dependent variable in an oratory-focused experimental study**
- Phenomenology of Consciousness Inventory (PCI) and empirical-phenomenological method
- Counterbalanced within-subject three-condition design chosen
  - Baseline condition (eyes open sitting quietly)
  - Pseudo attention placebo condition (suitable archive film to control for effects of film and context around the speech)
  - Experimental condition (world-class charismatic leadership speech) with post-condition suggestibility baseline assessment using two tests from the pre-induction phase in stage hypnosis

**Research design considered and direct use of hypnosis rejected**
- Ethical considerations in use of hypnosis as a condition, when current association between hypnosis and charismatic leadership is theoretical
- Complexity of administration and scale of activity, particularly in relation to post-hypnosis individual debriefing
- Greater risk of high participant attrition over time because of complexity of a four-condition design
- Comparison to PCI hypnosis literature findings could provide sufficient evidence for a relationship (e.g. trance depths and other signature effects)
- Unpublished whole group during hypnosis data from Pekala and Forbes (1988) (correlation matrices) supplied by Ronald J. Pekala allowing for a test comparison to establish if charismatic leadership oratory is a similar altered state of consciousness and psygram comparison

**Instrument identified for use as dependent variable in an oratory-focused experimental study**
- Phenomenology of Consciousness Inventory (PCI) and empirical-phenomenological method
- Counterbalanced within-subject three-condition design chosen
  - Baseline condition (eyes open sitting quietly)
  - Pseudo attention placebo condition (suitable archive film to control for effects of film and context around the speech)
  - Experimental condition (world-class charismatic leadership speech) with post-condition suggestibility baseline assessment using two tests from the pre-induction phase in stage hypnosis

**Identification and sourcing of a video of a charismatic leadership speech considered ‘world-class’ in the literature and associated with the term ‘hypnotic’**
- Martin Luther King’s 1964 Lincoln Memorial address identified

**Attendance at stage hypnosis training**
- Identification of pre-induction suggestibility tests used to replace the finger response item in the PCI-HAP and therefore provide an indication of motor suggestibility

**Pilot Analytical Study**
- n = 24 (first eight participants in condition orders 1, 3, 5)

**Phase 2 – Research design determined**

**Four-condition design considered**
- Baseline control condition
- PCI-Hypnotic Assessment Protocol with hypnotic induction
- Pseudo attention placebo condition (suitable archive film to control for effects of film and context around the speech)
- Experimental condition (world-class charismatic leadership speech)

**Power analysis**
- A priori power analyses to identify minimum sample size for the main study (using G^*Power 3.1.2)

**Sampling**
- Random sample of 50% of company email addresses
- Invitation to respondents to participate
- Random allocation to condition orders (n = 132)

**Main studies**
- Main Studies undertaken: n = 132 (incorporating pilot data)

**Data analysis**
- n = 121 following removal of participants who failed PCI Reliability Index
In some cases, where hypotheses relate to findings that are both from the present studies and simultaneously from prior studies, prior research has been cited within the results sections to facilitate understanding with elaboration on the statistical methods used inserted for similar reasons. The final two chapters (10 and 11) include discussions of limitations, recommendations for future research and overall conclusions. The author’s experience of mapping the stage hypnosis process as a participant observer can be found in the final conclusions.

1.7 Research model, propositions and interrelated hypotheses addressed in the four Main Studies

1.7.1 Research model

Drawing on the literature that has been touched on above, and the identification of the PCI as a means of operationalising the effects of charismatic oratory, it was possible to advance a theoretical position and in turn a research model with propositions and associated hypotheses.

As has already been alluded to, if the effects of charismatic leadership oratory and hypnosis are indeed related, then (based on the extensive evidence regarding the nature of hypnosis from the fields of psychology and neuroscience) this relationship will primarily reside in the trait characteristics of followers rather than leaders; in other words, in the same way that the ‘necessary cause’ (Barnier and Nash, 2008) in hypnosis is the trait susceptibility of individuals rather than the skills and techniques of the hypnotist.

1.7.2 Underlying theory, key constructs, propositions, 14 hypotheses

A diagram supporting the discussion below can be found in Figure 1.2.

The research design adopted (described in full in Chapters 4 and 5) enabled the refinement of the four propositions and 14 Main Study hypotheses related to the four analytical approaches frequently applied in PCI and PCI-Hypnotic Assessment Protocol research.
Underpinning the propositions, a theory was able to be advanced – based on a review of the literature and participant observation of stage hypnosis training. This theory can be summarised as follows:

*Charismatic oratory may be acting like a suggestibility test in stage hypnosis – in that it may be inducing feelings of altered state and involuntariness in a small group of susceptible individuals who are then more likely to volunteer to follow such a leader within a suitably charismatic context. Other follower types, less directly affected by the speech, observing the group’s behaviour may in turn be more likely to conform to the leader’s intentions because of wider expectancy and social conformity effects.*

For this theory to be true, effects associated with hypnosis would need to be demonstrated during a leadership speech, and specifically with regard to three key constructs: I. Trance, trance depth and its relationship to measures associated with key constructs in hypnosis (primarily, imaginative suggestion and self-reported depth); II. Phenomenology during an altered state of consciousness (particularly hypnosis); and III. Individual differences expressed in the form of the normal distribution of hypnotic susceptibility and hypnotic type.

Within the model present below, Construct I can be said to be underpinned by the PCI’s ability to generate 'an estimate of Weitzenhoffer’s (2002) conceptualization of hypnosis as “trance”' (Pekala, 2015: 14) and thus, alongside measures from the PCI-Hypnotic Assessment Protocol, assess a number of the processes that have been theorised by researchers as being important during hypnosis: trance and altered state effects (Kihlstrom, 2003; Weitzenhoffer, 2002; Woody and Bowers, 1994); suggestibility and imaginative suggestion (Shumaker, 1991; Kirsch and Braffman, 2001); expectancy (Kirsch and Braffman, 1999; 2001); and self-reported hypnotic depth (Tart, 1970).

Construct II is underpinned by extensive replication of research into the structure of consciousness using the PCI across a wide range of conditions (see for reviews Pekala, 2007; 2015), with the nature of altered state of consciousness during hypnosis developed from the theories of Singer (1977), Izard (1977) and Tart (1972; 1975; 1977). Construct III is grounded in the
identification of trance typologies related to hypnotic susceptibility conducted by Pekala and colleagues (Forbes and Pekala, 1996; Pekala, 1991; Pekala and Forbes, 1997; Pekala, Kumar and Marcano, 1995) and the identification of a phenomenology of consciousness related to the suggestibility of hypnotic virtuosos (Cardeña, 2005).

In order to operationalise these concepts in the context of the present research and test the theory above, four propositions were defined. For each of the propositions, a number of more specific hypotheses were then stated. These are reiterated in each of the Main Study chapters and form the structure for the analysis, reporting and discussions that follow.

Each hypothesis is identifiable as related to one of the four propositions through the use of a titling/numbering convention that refers back to the proposition. For example, the hypothesis that ‘trance depth during charismatic leadership oratory is equivalent to that attained by high hypnotic susceptibility individuals during hypnosis’ carries the numbering Hypothesis A3 (see below). A combination of inferential tests on results was used in combination with a descriptive comparison to results from prior PCI hypnosis studies and other conditions. In one case (for Hypothesis C3), because of the nature of the hypnosis study data supplied by Dr Ron Pekala, it was possible to use the Jennrich test to directly compare the overall altered state of consciousness for a whole participant group to the structure of consciousness during hypnosis.

In this way, acceptance of all of the experimental hypotheses would provide strong support for the theory above. Rejection would suggest that the often-discussed relationship between hypnosis and charisma is itself a form of delusion. It was also possible that a mixture of accepted and rejected hypotheses could be found, which might imply an underlying domain relationship rather than the effects of the two conditions (hypnosis and oratory) being one and the same. The number of Main Study research hypotheses were reduced for use in the Pilot Analytical Study.

Although each of the four main studies and propositions are presented in a linear form within the thesis (Chapters 6 to 9), the Main Study interpretations
and propositions are often influenced by one or more of the key constructs (as is illustrated in Figure 1.2).

**Figure 1.2**: Research model and framework for investigating the theory that the effects of charismatic leadership oratory and hypnosis are related

In this way, and in turn, although each of the four Main Studies move progressively through the key constructs above, in order to test the proposed theory, the generation of trance and trance-related phenomena are necessary preconditions at all stages of the analysis. The four propositions and related hypotheses were as follows.

**Proposition A** – Trance depth during a charismatic leadership speech is affected in a similar way to that found during prior hypnosis studies and research into other conditions associated with the term altered state of consciousness

- *Hypothesis A1* – Charismatic leadership oratory deepens trance
- *Hypothesis A2* – Overall trance depth during oratory is similar to that found for a whole sample during prior hypnosis research
- **Hypothesis A3** – Trance depth during charismatic leadership oratory is equivalent to that attained by high hypnotic susceptibility individuals during hypnosis
- **Hypothesis A4** – Charismatic leadership oratory increases trance depth and at the same time widens range of hypnoidal response, as in hypnosis
- **Hypothesis A5** – Trance depth during charismatic leadership oratory is similar to other conditions associated with the term altered state of consciousness

**Proposition B** – There are relationships between trance depth and PCI-Hypnotic Assessment Protocol measures during charismatic leadership oratory that are similar to those found during hypnosis

- **Hypothesis B1** – There are positive relationships between adapted PCI-Hypnotic Assessment Protocol items similar to relationships found in hypnosis
- **Hypothesis B2** – A person’s perception of how deeply influenced they have been by a charismatic leadership speech is predicted by the amount of imagery they have experienced in response to the speech content and their depth of trance (paralleling the relationship between self-reported hypnotic depth, imagoic suggestibility and depth of trance during hypnosis)
- **Hypothesis B3** – There are positive relationship between motor suggestibility as assessed by stage hypnotists prior to the administration of an induction to volunteers, adapted PCI-Hypnotic Assessment Protocol items and depth of trance during oratory

**Proposition C** – Mapping of states of consciousness during charismatic oratory, and comparing these to what has been found during hypnosis, shows that oratory generates an altered state of consciousness

- **Hypothesis C1** – Charismatic leadership oratory alters the structure of consciousness in relation to: a) changes in PCI major and minor
intensity levels, and b) paired major dimension of consciousness pattern changes

- **Hypothesis C2** – Charismatic leadership oratory generates an altered state of consciousness in relation to overall pattern effect change
- **Hypothesis C3** – Charismatic leadership oratory alters the structure of consciousness in a similar way to a hypnotic induction for a whole sample

Proposition D – The approach used in previous studies to identify hypnotic types in response to hypnosis can identify follower types when applied to a charismatic leadership speech. Furthermore, these types have similarities to hypnotic types

- **Hypothesis D1** – Follower type mediates the structure of consciousness in response to charismatic leadership oratory
- **Hypothesis D2** – Follower types have intensity level characteristics (such as higher altered state of awareness with low volitional control for hypnotic types VII, VIII and IX versus the opposite for hypnotic types I and II) and relationships to adapted PCI-Hypnotic Assessment Protocol items that are also associated with hypnotic type differences during hypnosis
- **Hypothesis D3** – Follower types have characteristics that might identify them as the five follower types argued for by Kellerman (2007; 2008)

### 1.8 Concluding remarks with regard to Chapter 1 and the contribution made by the thesis as a whole

This chapter sought to give a general outline of the purpose, aims, propositions and hypotheses that the present research sought to address. The next two chapters provide a review of the charismatic leadership literature, and the hypnosis and altered states of consciousness literatures. These chapters aim to provide the reader with a starting point for the discussion of results that takes place later and a basis for understanding the decisions made with regard to focusing on oratory and the use of the PCI and PCI-Hypnotic Assessment Protocols, areas discussed in full in Chapters 4 and 5.
As discussed in greater depth in the conclusion to this thesis, once the author made the decision to focus on oratory and understood fully the potential of the Phenomenology of Consciousness Inventory in this context, it became clear that the investigation had potential to make important contributions to charismatic theory and by extension, the management and leadership literature specifically, by establishing the way in which oratory acts as a catalyst for influence within a charismatic process. Further, the present author’s experiences as a participant observer of stage hypnosis training (prompted by Estabrooks’ observations) enabled the Main Studies’ results to be placed in the context of wider social processes and influences. This, as we will discuss later, did indeed suggest that oratory with high levels of imaginative suggestion could be fulfilling a role similar to the group suggestibility test before the call for volunteers during a stage hypnosis show; in other words, as a means of permitting individuals to self-assess a feeling of involuntariness in response to the oratory and wider altered state effects, leading to a greater likelihood of volunteering to join the leader and their particular worldview, whether that leader were present in person or not. Not only that, but the extent to which people appear to be influenced by such a speech is a function of a level of follower susceptibility which may in turn be related to hypnotic susceptibility.
Chapter 2 – Charismatic and transformational leadership: a review of the literature

At the present stage of exposition, this thesis has drawn out some initial parallels between charismatic leadership and hypnosis. In the next two chapters, a review of the literature from these two areas (with the addition, in Chapter 3, of a summary of the literature on altered states of consciousness) takes place.

Chapter 2 begins by discussing the relationship between charismatic and transformational leadership. It then reviews areas in the literature related to the use of language, vision, emotions and emotional contagion. Finally, the chapter develops the notion of hypnotic leadership as a subset of thinking about charismatic leadership and ideas about follower type and varied follower susceptibility introduced in Chapter 1.

2.1 Transformational and charismatic leadership theory

2.1.1 Relationships between charismatic and transformational leadership theory

The two related concepts of charismatic and transformational leadership have emerged as a key focus for leadership research in the past 30 years. Lowe and Gardner (2001), in a content analysis of articles from Leadership Quarterly, note that approximately one third of research is in the area of either transformational or charismatic leadership (or both).

In terms of the interrelationship between the areas of charisma and transformational leadership, Bass and Bass (2008), drawing on Bryman’s concept of ‘new leadership’ (Bryman, 1992), group the two theories into one single part of their Handbook of Leadership under the title ‘The New Leadership: Charismatic and Transformational Leadership’. In making the case for such a synthesis, they note that for charismatic leadership, there is usually some form of ‘transformation of followers’, whilst charisma (or idealised
influence) also appears to be a component in transformational leadership alongside areas such as inspirational motivation and intellectual stimulation (Bass, 1985b). Thus, transformational leadership theory encompasses theories about visionary and charismatic leadership (House, 1977).

In this sense, charisma and charismatic leadership theory are perhaps sub-domains of the wider field of transformational leadership theory. Ideas about hypnotic leadership, therefore, can perhaps be said to make a further distinction within charismatic theory and one related to the most ‘charismatic’ leaders; usually vis-à-vis crisis situations or extreme social phenomenon, such as cults and extreme contexts – involving some form of crisis and where followers are open and susceptible (Popper, 2002a). This chapter seeks to illuminate these different areas and discuss the literature that could be helpful in exploring the frequently hypothesised relationship between charismatic influence and hypnosis outlined in Chapter 1.

2.1.2 Shifts in thinking about charisma

As presented by the author in Chapter 1, the origin of charismatic leadership theory was Weber’s introduction (1922/1963) to sociology of the previous religious notion of charisma (Sohm, 1895). Weber’s interest was in how people with extraordinary ‘gifts’ develop and maintain complex organisations (Weber, 1924/1947). Later writers then took up the concept, relating it to pathology and radical change (Davies, 1954; Stark, 1969-1970). As illustrated by these examples, over the years there has been a shift in the literature from discussing the advantages of charismatic leadership to a recognition of potential weaknesses and dangers, with a more balanced view of the positive and negative effects of charisma (for example, Howell, 1988; Howell and Avolio, 1992; Volkan, 1980). Under those circumstances, it is suggested that there may be an association between narcissism and charismatic leadership (Popper, 2000; 2002a; b; Sankowsky, 1995). The consequences of this can, in certain circumstances, lead organisations towards a ‘shared madness’ (Popper, 2000; Aaltio-Marjosola and Takala, 2000), with such a relationship seen as facilitated by follower susceptibility (Padilla, Hogan and Keiser, 2007) within a
toxic triangle of destructive leadership, a conducive environment and susceptible followers.

One striking study into the collapse of Enron by Tourish and Vatcha (2005) drew on archive material from the company and accounts of former employees; and discusses the extent to which Enron became a form of corporate cult. In particular, Tourish and Vatcha focus on the internal culture and the leadership of the top executives in the company (including Lay and Skilling). The research showed that senior leaders placed an emphasis on 'charismatic leadership styles', together with:

. . . the promotion of a compelling vision by these leaders of a totalistic nature; individual consideration, expressed in a recruitment system designed to activate a process analogous to conversion; and the promotion of a culture characterized by conformity and the penalizing of dissent. (Tourish and Vatcha, 2005: 455)

There has also been a shift in the style of writing about charismatic leadership. This has moved away from the early descriptions implying an almost magical process to clearer explanations (see Beyer, 1999a; b) and an association between charismatic leadership and a range of measurable indicators. Such indicators include: increased effort, follower satisfaction, increases in performance and follower perceptions of leadership effectiveness (Babcock-Robertson and Strickland, 2010; Bass, 1990; Bryman, 1992; Fiol, Harris and House, 1999; House, Spangler and Foder, 1988; Wang, Jen and Mei-Ling, 2010).

To enumerate the distinctions between various theories, Popper (2001) makes the case that, broadly speaking, leadership (and particularly charismatic leadership) theories can be categorised as being either content-bound or process-bound and favours explanations related to attachment theories, which he suggests as an underlying mechanism (a process explanation). Popper’s view (2000; 2002a) is that attachment (Bowlby, 1969; 1973; 1988) and attachment style (Ainsworth et al., 1978) (secure, ambivalent and avoidant) may be important because leaders are a product of ‘potential and motivation’ (Popper, 2000: 6). From such a perspective, people with high levels of anxiety
may have difficulty sustaining a leadership role and may be unable to ‘convey a sense of strength’, which Popper points out may be central to the attribution processes of followers (Conger and Kanungo, 1987; Meindl, 1995; Shamir, 1991). In as much as this may be the case, such leadership attributes, and particularly those which border on narcissism, may be particularly attractive to certain types of followers and in certain circumstances (Popper, 2000; 2002a).

2.1.3 Transformational leadership as a process-bound theory

Arguably, the leading process-bound theory in this area of the leadership literature is transformational leadership. Downton (1973) was the first person to apply the word ‘transformational’ to leadership and, as is implied, the title refers to forms of leadership that transform and change followers. Transformational leadership as a theory emerged from the work of Burns (1975) and focuses on emotions, values, vision and goals. Thus, transformational leadership studies tend to include the assessment of follower motives as well as leader behaviours (Lowe and Gardner, 2001). Burns (1975), specifically, made the distinction between transactional and transformational leadership. Transactional leadership refers to leader behaviours that focus on exchanges between leader and follower (for example, performance pay rewards etc.). The term ‘transformational leadership’ applies to the process whereby a leader raises the level of motivation through attentiveness to the underlying motives and needs of the group.

House’s work on charisma in the 1970s strongly influenced transformational theory. House (1977), in a theory of charismatic leadership, suggests that charismatic leaders behave in such a way as to have specific effects on followers related to these and similar areas. Personal leadership characteristics (dominance, desire to influence, confidence and strong values) lead, in House’s view, to behaviours such as being a strong role model, the communication of high expectations, demonstrating and expressing competence, articulating goals and the arousal of motives. These behaviours, for this reason, result in effects on followers: for example, heightened awareness and motivation to achieve goals, trust, the adoption of similar beliefs to the leader, confidence, obedience, unquestioning acceptance of ideas and
affection towards leaders. Bass (1985b), developing early work on transformational leadership (Burns, 1975; House, 1977), focused his attention on the needs of followers more than on the needs of leaders. From this perspective, transformational leaders, and by extension charismatic leaders, motivate followers by raising levels of consciousness, influencing followers to transcend self-interest and encouraging them to address higher needs (Bass, 1985a; 1990b; Bass and Avolio, 1993; 1994).

A point sometimes overlooked in the application of the model is that, paralleling the early thinking about charismatic leadership by Weber, writers who discuss transformational leadership see it as one of several styles of leadership. Bass, the leading exponent of the theory, proposes that transformational and transactional leadership exist on a single continuum (transformational – transactional – laissez-faire) and that transformational leadership can apply to negative outcomes as well as positive ones but in general reflects a greater emphasis on emotions.

Bass and colleagues identified seven transformational leadership factors across the continuum described above (Avolio, 1999; Bass and Avolio, 1990). Bass and colleagues’ seven factors are as follows: 1. idealised influence and charisma, 2. inspirational motivation, 3. intellectual stimulation, 4. individualised consideration; then for transactional leadership: 5. contingent reward and constructive transactions, 6. management-by-exception, active and passive corrective transactions; finally, where there is laissez-faire leadership: 7. laissez-faire non-transactional behaviours.

Bass and colleagues see idealised influence and charisma as being at the furthest end of the transformational continuum. In this regard, the theory presupposes the existence of difference forms of follower response to leadership as a general concept. This said, the assumption in transformational theory is one which emphasises the leader more than follower differences.

2.1.4 Evidence that transformational leadership has an effect on followers

It is important to recognise that beyond just the theories that are present, there is evidence that transformational styles of leaders have a demonstrable effect
on followers’ behaviour. Meta-analysis of research into transformational leadership suggests that the demonstration of transformational behaviours (such as charisma and idealised influence) results in increased perceptions of leader effectiveness and improvements in performance (Lowe, Kroeck and Sivasubramaniam, 1996). The Multifactor Leadership Questionnaire (MLQ) (Bass, 1985a; Bass and Avolio, 1990; 1993; 1994) is the most frequently used instrument for measuring transformational leadership and has scales relating to the seven factors identified above. Based on research using the MLQ, the effects of transformational leadership appear to be additive (Bass and Avolio, 1990). Thus, idealised influence plus inspirational motivation, intellectual stimulation and individualised consideration lead to the achievement of performance beyond expectations by followers, an interaction that short-cuts the processes of contingent reward and management-by-exception that are necessary for performance enhancement through transactional leadership. The full model exists within a matrix comprising two continua: passive versus active and effective versus ineffective (Bass and Avolio, 1994); for example, laissez-faire leadership is conceptualised by Bass and Avolio as a passive-ineffective style, transformational leadership as an active-effective one.

Other writers advance different explanations, and transformational leadership has been criticised regarding its conceptual clarity and the lack of an established validity for the MLQ (Bycio, Hackett and Allen, 1995; Tepper and Percy, 1994; Tracey and Hinkin, 1998; Yukl, 1999). There has also been criticism of the tendency for transformational leadership to emphasise a ‘hero’ leader bias (Yukl, 1999) and focus on personality (traits and predispositions) over behaviour (Bryman, 1992). Some have even suggested that the theory may be anti-democratic and elitist (Avolio, 1999; Bass and Avolio, 1993).

By the same token, there has been a growing recognition that charisma, although necessary, is not enough in itself to create transformational leadership (Yammarino, 1993). Northouse, for example, points to ‘the need to understand how transformational leaders affect followers psychologically and how leaders respond to followers’ reaction (Northouse, 2004: 187), with some researchers arguing that the charismatic nature of transformational leadership ‘presents
significant risks for organisations because it can be used for destructive purposes’ (Conger, 1999; Howell and Avolio, 1992).

**2.1.5 Charismatic influence and attribution bias**

Leadership theory that offers perspectives on charismatic, visionary and transformational leader behaviour (Bass, 1988; Bass and Avolio, 1994; Conger and Kanungo, 1987; 1988a; Gardner and Avolio, 1998; House, 1977; Nanus, 1992; Sashkin, 1988; Shamir, House and Arthur, 1993; Tichy and Devanna, 1986) frequently adopts the recognition that leadership is a perceptual phenomenon. It also, arguably and by extension, takes a process view of leadership (Northouse, 2004). Some theories (for example those based on Attribution Theory (Calder, 1977)) go further and suggest that leadership generally is over-emphasised because of attribution biases that result from a need to make sense of complex organisational contexts (Lord, Foti and DeVader, 1984; Meindl, Ehrlich and Dukerich, 1985) and biases in the leadership literature (Popper, 2002b).

... leadership is very much in the eyes of the beholder; followers, not the leader, and not researchers, define it. (Meindl, 1995, p. 331)

Popper suggests that similar forms of over-attribution have led to the ignoring of followers within the literature (Popper, 2002b; 2012), a theme we will return to later in the conclusions to this thesis.

The recognition of the importance of follower perception and thus, arguably, of follower susceptibility as a concept goes back to Weber but has remained an influential strand of thinking throughout the development of charismatic theory, particularly in the discussion of the most dramatic manifestations of charismatic leadership. Willner (1984) in particular picked up and built on this theme with specific regard to the big figures of the twentieth century.

As Willner (1984) expressed it:

... political charisma has produced profound consequences in this century. Ghandi, Roosevelt, Hitler and Castro were only four examples of political
leaders whose charismatic hold on millions of followers gave them leverage to transform their times and countries. (Willner, 1984: 2)

The attributing of transformational achievements to charisma is far from limited to the sphere of political leadership. As Conger and Kanungo (1988b) note, in a discussion of Lee Iacocca at Chrysler (who by the end of 1983 had transformed the company’s record losses to a profit of $925 million, the largest profit in the company’s history):

The press attributed Iacocca’s phenomenal success not only to his strong business sense but also to his ‘charisma’. As a charismatic leader, Iacocca epitomised the power of such leaders and their profound impact on organisations and on society at large. (Conger and Kanungo, 1988b: 2)

Other business leaders frequently associated with the term ‘charismatic’ (Popper, 2000) include Mary Kay Ash (Mary Kay Cosmetics) and John Z. De Lorean (DMC), a fact that illustrates the extensive use of the term across a wide range of situations.

Willner (1986) defines charismatic leadership as a relationship between followers and a leader with the following elements:

1. The leader is perceived by the followers as somehow superhuman
2. The followers blindly believe the leader’s statements
3. The followers unconditionally comply with the leader’s directives for action
4. The followers give the leader unqualified emotional commitment
   (Willner, 1984: 8)

Willner (1984) notes that:

Many charismatic political leaders have been characterized as eloquent or spellbinding orators, able to arouse their audiences to heights of enthusiasm and transports of emotion. (Willner, 1984: 151)

She goes on to identify elements such as imagery, figurative language and the use of rhetorical devices like repetition and alliteration as being particularly
important in defining charismatic leadership oratory. Willner makes a similar connection between the use of the term ‘hypnotic’ and charisma, specifically when describing the effects of some charismatic leaders’ eyes on followers (such as Castro and Hitler), drawing a parallel with the beliefs of Indonesian peasants about the attributes of sorcerers (1984: 149):

I have encountered the belief among Indonesian peasants that sorcerers can be distinguished by their eyes . . . Castro’s eyes have been described as ‘hypnotic in their intensity’ (Taber, 1961: 20) . . . Hitler was generally undistinguished in appearance, but one feature that stood out and commanded attention was his eyes, which were ‘persistently said to have had some sort of hypnotic quality’ (Bullock, 1964: 328) . . . That this was felt by those at some distance . . . is suggested . . . in Abel’s study of Nazis: ‘As the Fuehrer addressed us, his eyes became like hands that gripped men never to let go again’ (Abel, 1938: 153). (Willner, 1984: 149)

Willner’s ideas therefore appear to adopt both content and process positions, simultaneously; her ideas bring this together with the concept of unconditional compliance (implying involuntariness, like Popper (2002a)).

2.1.6 Vision and trust within the processes of charismatic influence

Other explanations for the effects of transformational and charismatic leadership include the promotion of vision and the development of trust (Bennis and Nanus, 1985). Alongside this, writers have pointed to areas such as recognition of the need for change (Tichy and DeVanna, 1986), moral values and identity (Avolio and Gibbons, 1988) and an understanding of the role of exchange in effective transactional leadership (Kuhnert, 1994; Kuhnert and Lewis, 1987). Charismatic theory was built on in the 1980s and 1990s (see Conger, 1999; Conger and Kanungo, 1998), leading writers like Shamir, House and Arthur (1993) to argue that charismatic leaders transform the self-concept of followers through the connection of follower identity to collective or organisational identity. In like manner, the effects of charismatic leadership are seen as the result of leaders increasing the value of group goals by providing a link to followers’ self-concepts (Shamir, House and Arthur, 1993; Shamir, Arthur
and House, 1994). According to this ‘self-concept based motivational theory’ as Shamir and colleagues describe it,

... charismatic leaders, by their verbal and symbolic behavior, raise the salience of certain values and collective identities in followers’ self-concepts and articulate the goals and required efforts in terms of those values and identities. (Shamir, Zakay, Breinin and Popper, 1998: 388)

2.1.7 Charisma, transformational leadership and leadership language – content-bound theories of influence

As stated, leadership theories related to charisma can be classified as being either process-bound or content-bound (Popper, 2001). The largest body of content-focused research and theory relates to the use of language by charismatic leaders. This literature has frequently suggested that use of language underpins charismatic leadership effects (Conger, 1991; Conger and Kanungo, 1988a; Gardner and Avolio, 1998; House and Shamir, 1993; Willner, 1984) and that skilled use of language (particularly rhetoric) may be a key component of charismatic leaders’ visionary behaviour (Emrich et al., 2001; Heracleous and Klaering, 2014). Specifically, Emrich and colleagues (2001) found that charismatic leaders make use of more emotional language. They note, for example, that Martin Luther King said ‘I have a dream’ and not ‘I have an idea’, which the researchers suggest is less emotional.

Conger (1991) proposes that charismatic leadership language consists of two skills categories: framing and ‘rhetorical crafting’, with frame defined as ‘a quality of communication that causes others to accept one meaning over another’ (Fairhurst and Sarr, 1996, p. xi). Conger (1991) argues that the way in which leaders ‘frame their messages’ is critical, particularly the use of metaphors, analogies and stories. In later writing, Conger and Kanungo (1998b) go on to suggest that ‘meaning-making and motivation . . . is the most complex and perhaps most important in the influencing process under charismatic leadership’ (1998b: 173). As an example of this in practice, Conger (1989) quotes Steven Jobs who described the mission of his computer firm NEXT as ‘revolutionizing the higher educational system’ rather than ‘building a computer for university applications’ (Conger, 1989: 39-40).
The term ‘rhetorical crafting’ is used to describe the use of symbols within language rather than the use of literal meaning, with inspirational leaders using metaphors, analogies and stories which have emotional appeal and which are motivational; other rhetorical devices identified by Conger include alliteration, balance, repetition and rhythm. Developing Conger’s notions, Shamir et al. (1994) identify the following elements as critical in charismatic leadership rhetoric: collective identity, history, hope, moral justification and values. Non-charismatic speeches by comparison tend to emphasise leader competence and the followers’ past achievements, with ideology replaced by pragmatic justification of goals and discussions of implementation and reward.

Conger’s notions parallel general ideas about the analysis of metaphor. Metaphor analysis in the social sciences has tended to be based around four main theories: Conceptual Metaphor Theory (Lakoff and Johnson, 1980), Context-Limited Simulation Theory (Barsalou, 1999), Lexical Concepts and Cognitive Models Theory (Evans, 2007) and the Discourse Dynamics Framework (Cameron and Deignan, 2006). All of these approaches share the notion that metaphor involves two distinct conceptual domains: the topic (or target) and the vehicle (or source). The vehicle (or source) differs from the topic (or target) in that its use has an influence on the meaning of the topic – the topic (or target) being the content that is being written about or spoken. Mio and colleagues (2005), in studies of metaphor and presidential leadership in the United States of America, found that charismatic presidents made use of nearly twice the number of metaphors compared to non-charismatic presidents. They also found that passages from speeches which used more metaphors were rated as more inspirational – results that they suggest demonstrate the importance of metaphor as a means of inspiring audiences and evidence which in their view ‘increases our understanding of the process by which charismatic leaders inspire and motivate followers’ (Mio et al., 2005: 287). In an exploration of charismatic leadership language using a form of Discourse Analysis, Den Hartog and Verburg (1997) suggest the following five rhetorical devices as being important in the evocation of positive audience reaction:

- contrast
- lists
- puzzle-solution/headline-punchline
- position taking
- pursuit, repetition and alliteration.

Shamir, Arthur and House (1994), again applying a content focus, identified seven types of content as being more common to charismatic leadership speeches (see Table 2.1, below).

Table 2.1: Types of content more commonly referenced in charismatic leadership speeches according to Shamir, Arthur and House (1994 (adapted))

<table>
<thead>
<tr>
<th>Leadership speech content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective history and the continuity between past and present</td>
</tr>
<tr>
<td>Collective identity with fewer references to individual self-interest</td>
</tr>
<tr>
<td>Followers’ worth and efficacy as individuals and as a collective</td>
</tr>
<tr>
<td>Leader’s similarity to followers and identification with followers</td>
</tr>
<tr>
<td>Values and moral justifications, with fewer references to tangible outcomes and instrumental justifications</td>
</tr>
<tr>
<td>Distant goals and the distant future, with fewer references to proximal goals and the near future</td>
</tr>
<tr>
<td>Hope and faith</td>
</tr>
</tbody>
</table>

Adapted from Shamir, Arthur and House (1994)

Political speeches, in particular, have been subject to academic scrutiny. Building on earlier writing that stressed the importance of symbolic communication in charismatic leadership (Fiol, Harris and House, 1992), Fiol, Harris and House (1999) looked at 42 speeches by 14 twentieth-century presidents from the United States of America. They propose that charismatic leadership language demonstrates three characteristics (‘negation’, ‘abstraction’ and ‘inclusion’) and that these linguistic approaches vary according to phases in the process of influencing followers. Fiol (2002) develops these ideas further in reference to organisational transformation in a business context (Fiol, 2002). In particular, Fiol proposes that so called ‘linguistic markers’ play a key role in the process of transformation. To illustrate the concept of a linguistic marker she
gives the example of leaders using the collective ‘we’ (arguably an approach that suggests group action and unity).

Perhaps not surprisingly, a study of speeches during the presidential election in 1992 suggested that the key components of charismatic leadership could be defined in two ways: ‘language content’ and ‘delivery and presentation’ (Wendt and Fairhurst, 1994). This assertion is challenged by other researchers (for example, Den Hartog and Verburg, 1997; Holladay and Coombs, 1993; 1994; Kirkpatrick and Locke, 1996). Rather, Den Hartog and Verburg (1997) propose that the content of charismatic speeches may have particularly ‘profound’ effects on followers where these effects are amplified during a crisis (Den Hartog and Verburg, 1997) and in settings where ‘social distance’ is greater. For a speech to result in longer lasting ‘charismatic’ effects and ‘convert’ followers, they argue that ‘the content needs to provide followers with certain compelling interpretations of reality resulting in shared meaning’ (Den Hartog and Verburg, 1997: 363). In cases of social distance, however, it may be that followers are forced to rely almost entirely on the verbal cues given by leaders (Shamir, 1995).

In contrast, despite extensive interest in this area, the processes of storytelling, metaphor and how and why these have an effect remain largely unexplored in management, leadership and organisational behaviour research. As Cornelissen puts it:

> Despite the increased salience of metaphor in organization theory, there is still very little conceptual machinery for capturing and explaining how metaphor creates and/or reorders knowledge within organization theory. Moreover, prior work on metaphor has insufficiently accounted for the context of interpreting a metaphor. Many metaphors in organization theory, including the ‘organizational identity’ metaphor, have often been treated in singular and monolithic terms; seen to offer a similar or largely synonymous interpretation to theorists and researchers working along the entire spectrum of disciplines (e.g. organizational behaviour, organizational psychology) in organization theory. (Cornelissen, 2006: 683)
Cornelissen's own research focuses on the analysis of image-schematic dimensions of metaphor, drawing on concepts from Lakoff (Lakoff and Turner, 1989). He concludes that:

The locally specific processing and interpretation of a metaphor furthermore suggests that although different research traditions may resonate with a single metaphor like 'organizational identity', the different meanings that they attach to it may make their respective accounts inconsistent, and perhaps even contradictory with one another. As such, theorizing and research that is based on metaphors may be fraught with inconsistencies and contradictions across research traditions, and may be difficult to synthesize and integrate at a higher level; at the level of the entire body of organization theory. (Cornelissen, 2006: 704)

Returning to charismatic theory more generally, within what Bryman (1992), noted above, called ‘new leadership’ theory, there is generally a common agreement on the importance of vision (the creation of a mental image of an idealised future (Conger, 1989)). Specifically, idealised vision is seen a key determinant in the definition of charismatic and transformational leadership (e.g. Bass, 1990b; Conger, 1991; Conger and Kanungo, 1987; Tichy and Devanna, 1986). Conger and Kanungo (1988a) suggest that charismatic leaders 'appear particularly gifted with strategic vision' (Conger and Kanungo, 1988a: 3); whilst research which has examined the visionary language of exemplary transformational leaders demonstrates that language content is usually future-orientated, optimistic and highly inspirational, and appears to support this (Bennis and Nanus, 1995; Tichy and Devanna, 1986).

The definition of a vision is frequently seen as the initial phase in a leader’s attempts to transform groups of followers and organizations (Bennis and Nanus, 1985; Conger and Kanungo, 1987, 1988a; b; Tichy and Devanna, 1986) with a two-stage process identified: 1. the creation of the vision, and 2. the communication of the message to followers (Conger, 1989; Holladay and Coombs, 1993; 1994; Tichy and Devanna, 1986).

Although there is common agreement about the importance of vision there are varying definitions of the term. Conger and Kanungo define vision as an
'idealized goal that the leader wants the organization to achieve in the future' (Conger and Kanungo, 1987: 640) whilst Kirkpatrick and Locke suggest that vision is 'a general transcendent ideal that represents shared values, . . . is ideological in nature and has moral overtones' (Kirkpatrick and Locke, 1996: 37). For Nanus (1992) the positive effects of vision can be summarised into four components: the attraction of commitment and energising of people, the creating of meaning in workers' lives, the establishment of a standard of excellence and the providing of a bridge between the present and the future. There is, despite this, a consensus about the nature of vision as having ambitious goals that include high expectations, being in defiance of convention, challenging the status quo and intending to convey confidence to followers (Conger and Kanungo, 1987; House, 1977; House, Spangler and Woycke, 1991; Shamir, House and Arthur, 1993; Tichy and Devanna, 1986). One point often overlooked in the literature, despite the fact that the notion of crisis as a component in charisma goes back to Weber’s early thinking, is that the circumstances in which a speech takes place may also be of importance and affect its content. For example, context effects, in relation to modifications in leadership speech content, in turn have an effect on followers. In an analysis of George Bush’s speeches that explored whether or not the content included more of these elements following the 9/11 terrorist attacks, Bligh, Kohles and Meindl (2004) concluded that Bush’s rhetorical language became more charismatic after the crisis. In the same fashion, Emrich (1999), in a study of how context affects the perception of incumbent leaders, demonstrated that in ‘troubled’ contexts the perception of followers modulates to reflect qualities that are consistent with individuals’ implicit and romanticised conceptions of leadership magnifying as a result. Concerning other mediating factors, Berson and colleagues, in a study that explored the relationship between vision strength and leadership style (using MLQ), found that vision strength was related to organisational size and that vision strength ‘moderated the relationship between passive leadership style and vision strength’ (Berson et al., 2001). In addition, it appears that no single form of crisis is necessary to produce the charismatic leadership phenomenon; rather a wide range of crises can trigger charismatic leadership
to have influence. It is not only an acute crisis that brings out the charismatic leader, charismatic leadership also arises when a crisis is chronic, such as when the ultimate values of a culture are being undermined (Hummel, 1973) (also discussed in Bass and Bass, 2008).

2.1.8 Emotions, emotional contagion and neo-charismatic theory

The theme of emotions and the contagion of emotion, particularly in crowds, occupied both Le Bon (1895/1947) and Freud (1922). This strand of thinking has continued as a touchstone to explain many of the effects and causes of charismatic influence. Earlier writing on transformational leadership noted that such leadership had an intense emotional component (Bass, 1985a). Later research highlighted effects associated with followers’ emotional attachment to charismatic leaders and the emotional and motivational arousal of followers by leaders (e.g. Shamir, House and Arthur, 1993; Brief and Weiss, 2002).

Such ideas are more than just theoretical and there is clear evidence in relation to the effects of such processes on specific outcome measures. For example, the importance of positive emotional climate is well documented for areas such as task (Ashby, Isen and Turken, 1999), financial performance (Wilderom, van den Berg and Wiersma, 2012), well-being (Diener, Oishi and Lucas, 2001; Liu, Siu and Shi, 2010), motivation (Erez and Isen, 2002) and creativity (George, 1996; Spector and Fox, 2002).

A growing body of more recent research has continued to pay attention to the role of emotions and affective interactions that develop between leaders and followers (Barsade, 2002; Bono and Ilies, 2006, Sy et al., 2005), connections that may in part be the result of a leader’s position within a power hierarchy (Frederickson, 2003). Echoing Le Bon and Freud, Bono and Ilies (2006) propose that ‘mood contagion may be one of the mechanisms by which charismatic leaders influence followers’ (Bono and Ilies, 2006: 318).

Specifically, Bono and Ilies’ (2006) research indicated that both leaders’ positive emotional expressions and follower mood influenced ratings of leader effectiveness and attraction to the leader.
One other branch of research (sometimes referred to as neo-charismatic leadership theory (House and Aditya, 1997)) emphasises the expression of emotions by leaders and the emotional connections that develop between leaders and followers (see Conger and Kanungo, 1998). Again reflecting Cornelissen’s observations (Cornelissen, 2006), other writers note that although we know a lot about the nature of charismatic leadership, we know much less about ‘how’ leaders articulate a vision that is sufficiently compelling to evoke attributions of charisma and greatness among their followers (Emrich et al., 2001).

Several writers who reference the effect of emotions within the process point to the ability of charismatic leaders to use language to arouse and articulate the feelings of need within followers (Bass, 1990) and present a public expression of followers’ sentiments and feelings that are felt privately but which followers are unwilling or unable to express themselves (Yukl, 2002). Studies of leadership language in both business and political processes suggest that the specific rhetorical style, words, linguistic expressions and symbolism that a leader chooses affect how emotionally aroused, committed and inspired an audience becomes (Conger, 1991; Den Hartog and Verburg, 1997; Shamir, Arthur and House, 1994). Alongside this, the importance of delivery style to response is also recognised (Bass, 1985a; 1990a; b; Bryman, 1992; Willner, 1984).

Some research goes so far as to propose that the way in which a speech is delivered may be as significant, if not more so, than the actual content (Holladay and Coombe, 1993; 1994). In turn, a leader’s ‘emotional presence’ is suggested to be a key component in leader influence by a number of writers (e.g. Bennis and Nanus, 1985; Lindholm, 1988; Popper, 2001; 2002a; 2004; Willner, 1984; Zaleznik, 1977) with such presence affecting followers and in turn leading to some form of emotional contagion within the group. Research that looked at the effect of vision content, delivery and organisational performance on perceptions of leader charisma and effectiveness using a modified version of Meindl and Erlich’s Romance of Leadership Scale (Erlich et al., 1990) analysis, found that the ‘strength’ of delivery was particularly important in determining perceptions of leader charisma and effectiveness.
The ability of leaders to express emotions to followers has also been noted in relation to the so-called ‘dark’ (Popper, 2001; Takala, 2010) or destructive (Aasland et al., 2009) sides of charismatic leadership as well as for the positive effects of charisma. In his discussion of Charles Manson and Hitler as hypnotic leaders, Popper gives the following examples:

One of the members of the ‘family’ described how Manson held talks in which he gave strong expression to his hatred for the outside world, along with protection, love, desire and sexuality toward ‘his family’ – his believers (Watson, 1978: 21) . . . Hitler’s ability to appeal to emotions is described in similar terms: ‘Hitler’s ability to shift from one mood to another was amazing. One moment his eyes were full of tears and deep affection, a moment later his mood changed to anger with flashing eyes, and this gave way to a glazed look, as if he were watching a vision being formed’ (Burns, 1973: 46). (Popper, 2002a: 21)

There are equally leaders who might be described as belonging to the ‘light side’ of the equation. For such leaders, who are sometimes described in the literature as socialised charismatic leadership (Nielsen, Marrone and Slay, 2010; Varella, Javidan and Waldman, 2011), humility may – in contrast with the above characteristics – be a key factor in their effectiveness (Kaufman, 2012; Nielsen, Marrone and Slay, 2010; Owens and Hekman, 2012).

2.1.9 How the Phenomenology of Consciousness could help in an investigation of the effect of charismatic leadership and theories that such leaders alter their followers’ consciousness

From the perspective of the present experimental research design, as we will explore later, the Phenomenology of Consciousness Inventory (PCI)’s construction not only allows for the valid and reliable measurement of trance depth and altered states of consciousness, but additionally a range of both negative and positive emotions. It is also possible to conduct an analysis of bonding (Izard, 1977) between such areas and measures of altered state. In this way, it appeared that PCI findings might be able to explain empirically or reject many of the hypothesised relationships discussed above. Drawing together the threads of thinking above, in the context of the PCI’s measures
such literature predicted a bonding between both positive and negative emotions and with altered state, something that ultimately appeared to be the case (as we will discuss in Chapter 8).

2.2 Hypnotic leadership

2.2.1 Developing a theory of how hypnosis and charismatic leadership might be related

As we have seen, just as charismatic leadership can be viewed as a sub-domain of transformational leadership theory, so in turn there is a smaller but important body of thinking about ‘hypnotic leadership’, formally expressed in some cases (Popper, 2002a) with other associations referenced incidentally within a wider body of writing (for example in Willner, 1984). This ‘hypnotic leadership theory’ could be classified as a sub-category of charismatic leadership writing. If such a leadership form exists, then it probably does so at the transformational end of the ‘transformational – transactional – laissez-faire continuum’ (Avolio, 1999; Bass and Avolio, 1990a) and most likely (but perhaps not exclusively in its milder forms) during times of crisis or extreme circumstances and change; and only with those followers most susceptible to influence (Popper, 2002a). Popper in particular concentrates on extreme manifestations through a series of case studies and (2002a) relates the concept to the leadership, and close followers, of figures such as Charles Manson, Jim Jones and Adolf Hitler.

Although even extreme forms of leadership do not appear to create followership effects akin to ‘extreme-looking’ hypnotic phenomena (e.g. behaviour demonstrated in stage hypnosis shows or in the laboratory), with the exception of Schjoedt and colleagues (2010) and the current research, there has been no attempt to operationalise other forms of effect that might be shared between the domains. Rather than just assume as a researcher that the two areas are unrelated, because the effects are ostensibly dissimilar, it increasingly seemed viable as the literature review progressed to seek to find a way of operationalising the effects of charismatic leadership regarding changes in the structure of consciousness. Schjoedt and colleagues (2010) had done so using objective observation of physiological alterations to processes associated with
consciousness, and the PCI, in contrast, seemed to be offering the possibility of assessing, in an empirical way, subjective phenomenological changes.

The hypnosis literature review (described in detail in the next chapter) reinforced this view because of the evidence that suggestibility might be a factor beyond just the formally hypnotic context (as defined by the use of hypnotic susceptibility scales within a laboratory experiment). As has been frequently noted in the contemporary hypnosis literature, the best predictor of a person’s hypnotic suggestibility is individual responsiveness to the same suggestions outside hypnosis (Braffman and Kirsch, 1999). Furthermore, an emerging consensus in the field (Kirsch et al., 2011) acknowledges that all types of suggestion experienced following induction can be experienced without one, that hypnotic induction only slightly increases suggestibility and that waking and hypnotic suggestibility are highly correlated. This begs the question: if most hypnotic suggestions (of the sort used in hypnotic susceptibility scales) are replicable in a waking state, might more subtle effects on consciousness and forms of influence associated with a loss of sense of self be replicable outside of a formal hypnotic induction?

It is perspectives like these, alongside the possible evolutionary benefits of hypnotic suggestibility, that have led even the most respected of hypnosis researchers like Dienes and Perner (2007), two proponents of the cold control theory of hypnosis (discussed in Chapter 3), to propose wider relationships between hypnotic-type phenomenon and everyday life; and, arguably, indirectly contribute to hypnotic leadership theory:

...hypnosis is just one particular cultural expression of a more general phenomenon, and many of the particular characteristics of hypnotic behaviours are historical accidents frozen in time. The association of hypnosis with sleep (long discredited in the academic world), or the notion that the hypnotized person is passive, apparently lobotomized as it were, are simply particular cultural beliefs. (Dienes and Perner, 2007: 310)

The point here is that ‘hypnotic’ influence clearly existed long before the form induced in the psychologist’s laboratory and that therefore, to understand hypnosis fully we may need to look at some of its possible parallel
manifestations outside of such formal settings. Trait hypnotic susceptibility, within such an argument, becomes trait susceptibility to something much wider and more ancient, with hypnosis then merely the laboratory operational means of triggering such traits within controlled conditions.

For Dienes and Perner (2007), the main evidence supporting this perspective comes from examples such as spirit possession (Lewis, 2003), with the proposition that perhaps our ancestors in the distant past experiencing such a phenomenon (as internal images in their minds in response to possession procedures) might have considered it to come from spirits or some form of divine force. They go on to suggest that, in the end, such occurrences could become selection criteria, if selection pressure for such an adoption were strong enough:

One speculative function of such possession experiences is to support religious beliefs. If there were selective pressures on people to have religious beliefs, as some have argued (e.g. Alper, 1996), then the experience of being taken over by a spiritual force would help strengthen spiritual beliefs (Oesterreich, 1930), and hence could be selected for as well. (Dienes and Perner, 2007: 309)

Here perhaps is the best explanation for the cultic forms of hypnotic leadership described by Popper (2002a): namely, that if such a theory were correct, people with high levels of trait susceptibility finding themselves in a context and circumstances paralleling some of these precursor, ancient forms of group behaviour might well be unable to resist the invocation of altered states of consciousness triggered by such processes. In turn, they might also easily over-attribute the feelings of influence and involuntariness they are experiencing to the leader or set of ideas that appear to be at the heart of the process from their individual perspective.

**2.2.2 How the term ‘hypnotic’ has been applied in the wider literature – further observations**

Again, as first noted in Chapter 1, if we look at the more general discussion of charismatic leaders as being hypnotic, we find further remarkable examples.
Although the form of ‘hypnotic leadership’ (Popper, 2002a), where followers lose their sense of self (apparently under the influence of figures like Jones, Hitler and Manson) may be less common in the contemporary world (ISIL excepted), nonetheless the use of the word ‘hypnotic’ to describe well-known successful leaders persists in the popular psyche in both everyday democratic and business contexts.

Indeed, modern politicians and contemporary business leaders are also far from immune to the claim that they may exert hypnotic influence. The election of Barack Obama as president of the United States of America, for example, prompted a rapid and extensive internet ‘discussion’ and suggestions that his success was, in part, due to his use of hypnotic language and techniques. A Google search by the present author, shortly after Obama’s election (paralleling the search by Kihlstrom (2008) for online references to Hitler and hypnosis, referred to in Chapter 1) produced 1,260,000 results for the terms Obama and hypnosis or hypnotic. There are substantial internet ‘mythologies’, of a similar type, developing around business leaders such as Richard Branson of Virgin Atlantic – particularly since Branson wrote the foreword to a book by Paul McKenna (McKenna, 2007), a well-known UK stage hypnotist and promoter of neuro-linguistic programming – an area claiming origin in the work of Milton Erickson (see Tosey and Mathison, 2008). Within the more speculative realms of popular literature, some have even suggested that the Bible itself is hypnotic (Lentz, 2002).

As we noted in the introduction, within the academic hypnosis literature, there are specific references to forms of hypnotic procedure and charismatic leadership. We learned earlier how George Estabrooks, a leading authority on hypnosis, once suggested that Hitler’s emotional domination of crowds (1943/1957) could be compared to the ‘attack of the stage hypnotist’ (1943/1957: 120-121) at one step removed. Similar views are found from a range of group situations, particularly from followers who claim such influence, for example in the following quotation of Hans Frank (Gauleiter of occupied central Poland) in which he described Hitler’s effect on him to a prison psychologist during the Nuremberg trials:
I can hardly understand it myself. There must be some basic evil in me. In all men. Mass hypnosis? Hitler cultivated this evil in man. When I saw him in that movie in court, I was swept along again for a moment, in spite of myself. Funny, one sits in court feeling guilt and shame. Then Hitler appears on the screen and you want to stretch out your hand to him . . . .

It’s not with horns on his head or with a forked tail that the devil comes to us, you know. He comes with a captivating smile, spouting idealistic sentiments, winning one’s loyalty. We cannot say that Adolf Hitler violated the German people. He seduced us. (Persico, 1994: 184)

As quoted by Kellerman (2008), other followers who were part of Hitler’s inner circle, such as Albert Speer, also claimed the existence of such a form of influence.

Speer lived to write his autobiography (in prison), in which he recalled being enraptured by Hitler from the first moment he saw him. Hitler’s greatest gift, Speer thought, was to convey through a kind of mass ‘hypnosis’ that he ‘cared about each of us’, even ‘that he loved us’. (Kellerman, 2008: 101)

The suggestion of a feeling of involuntariness (the classic suggestion effect in hypnosis) is clear from accounts like the ones above; however, Estabrooks went even further, looking beyond the subjective experience of loss of self and at the processes of leadership themselves, when he suggested that:

The reader will, in general, be familiar with two types of hypnotism, that used by the psychologist in his laboratory and that used by the stage performer, the ‘professional’. The writer would call attention to a third type of direct suggestion, not generally classed as hypnotism. The orator, in general, be he on the radio or directly addressing an audience, uses all the psychological tricks of the hypnotist and gets most of the results achieved by the latter. In fact, his technique has more in common with the ‘professional’ than has the stage performer’s with that of the laboratory psychologist.
True, the orator does not get the trance, but we know that neither trance nor loss of consciousness is necessary in regular hypnotism to obtain all our phenomena. (Estabrooks: 1943: 235)

2.2.3 How the stage hypnosis process might help to explain the use of oratory in charismatic contexts

The ‘one step removed’ referred to by Estabrooks is the formal ‘deepening process’ or hypnotic induction which takes place following a call for participants and the stage hypnotist’s skilful use of selection processes alongside the building of high degrees of expectancy. The typical, deliberately theatrical, form of stage hypnosis induction is often upward eye fixation on stage lights and a ‘shock induction’ (such as rocking a subject and then rapidly pulling them back down into a chair to the suggestion ‘sleep’) (see Chase, 2000, for techniques and examples). This, together with the careful management of high hypnotic susceptibility individuals on stage, leads the whole audience to believe in the power of the hypnotist. This then creates the ‘entertaining’ illusion that all people are as susceptible as those whom the stage hypnotist simultaneously selected and encouraged to volunteer (a process discussed in more detail in the final chapter).

Such a deliberate illusion of ‘power over all’ arguably creates a form of social conformity effect (Asch, 1956) in the wider audience, not just the waiting subjects on stage. It is a harmless enough effect in the theatre, or in a television show, where it merely confuses people’s understanding of the true nature of hypnosis. However, if it were indeed to be the case that the small percentage of highly hypnotically susceptible individuals are able to be influenced in a similar way in a leadership context, the wider influence on people close to such a central group could conceivably enhance recruitment and commitment in a wider group of individuals with lower levels of susceptibility.

Returning to the typical use on stage of ‘shock induction’ – although, as has already been noted, hypnosis can be induced from a wide range of techniques leading some to suggest that the specific technique is of no relevance (Kirsch, 1994; 1999) – it is possible to make the case that once a social context is
introduced, the technique used becomes important. The stage hypnotist’s choice (as was explained in stage hypnosis training attended by the present author) of a dramatic and theatrical process is not an accident – seeing someone else drop dramatically into sleep increases expectancy not just in the next subject along the line on stage, but also in the whole audience. In contrast, there would be little to be gained, in terms of impressing the audience, if the stage hypnotist were to simply induce a deep sleep with a gentle form of induction.

The 1952 Stage Hypnotism Act (Her Majesty’s Stationery Office, 1952) and later amendments (Home Office, 1996) have enhanced the apparent power of the hypnotist, as television companies have avoided the broadcasting of the preliminary phases in a stage hypnosis show (although it is not expressly forbidden), beginning the broadcast or programme after the induction of volunteers or just as this takes place. The reason for this is almost certainly the simplicity of the selection and induction processes that anyone can learn in a relatively short time. In the stage hypnosis training attended by the author, for example, the trainer spent approximately 60–70% of the time on the health and safety and stage management aspects of the process and relatively little time teaching the easier-to-learn skills of selection and induction. We will explore these preliminary stages in more depth in the final chapter, when we will discuss the possibility that charismatic oratory may be acting as a form of suggestibility test within the charismatic process.

2.2.4 Involuntariness, altered state and attachment theory within the writing about hypnotic leadership

In his ideas about hypnotic leaders, Popper specifically argues in *Hypnotic Leaders, Followers and the Loss of Self* (Popper, 2002a), that charismatic leadership in its extreme form resembles hypnosis in that followers lose their sense of self and their autonomous judgement:

> My assumption is that relations with leaders who are perceived by their followers as ‘hypnotic’ are connected with the loss of autonomous reasoning, loss of self, as in hypnosis. (Popper, 2002a: x)
As was already commented on, Popper (2002a) uses the metaphor of leadership as fire, with the leader as the spark, the followers as the fuel and the context and circumstances as the oxygen that feeds the flames. In terms of the interplay between leaders and followers, Popper argues that Attachment Theory (Bowlby, 1969) explains the needs of followers for a leader. Popper also makes direct reference to the potential effect of being in an altered state of consciousness for a prolonged period. In this regard, he notes the potential relationship between extreme charismatic leadership (e.g. Jonestown) and the effects of psychological regression and creation of altered states of consciousness noted by Robert Lifton in his studies of Chinese communist prisons and ‘thought reform’ (Lifton, 1969).

According to Lifton’s findings, a process of psychological regression occurs, but rather than keeping the subject arrested in a state of apathy, it generates personality changes with a salient emotional element. The result is an altered state of consciousness. (Popper, 2002a: 54)

Popper goes on to point out that:

Many studies have shown a significant correlation between the length of time a person is in an altered state of consciousness and permanent changes in his personality. As one researcher described it: ‘The disappearance of control over the consciousness and inhibitions is accompanied by changes in the emotional expression. Then primitive feelings arise with much greater intensity than in a normal state of consciousness.’ (Ludwig, 1972: 16) Thus, we are now able to describe how such psychological processes occur. (Popper, 2002a: 55)

In 2002, when Popper first made parallels between attachment in charismatic leadership and hypnotic influence, there was little evidence in the hypnosis literature to support such ideas. Recently this has changed, with two papers explicitly associating attachment style with hypnotic susceptibility. The first of these, a review of the literature by Zelinka, Cojan and Desseilles (2014), suggests a relationship between clinical hypnosis, attachment theory and oxytocin (a neuromodulator associated, among other things, with maternal
bonding and the neuroanatomy of intimacy in general (Marieb and Hoehn, 2012):

... we propose that hypnotic suggestions conferring a secure quality to the nonverbal meaning of the therapist’s verbal communication may generate a relational experience similar to the one that should have been experienced during infancy in order to build a secure attachment style. (Zelinka, Cojan and Desseilles, 2014: 36)

From this perspective, Zelinka, Cojan and Desseilles (2014) argue that hypnotic suggestions which promote attachment may be modulating the level of oxytocin, which in turn could be contributing to the effectiveness of the therapeutic outcome; and that therefore oxytocin may be one of the mediators which connects the language of the therapist with the physiology of the patient.

As well as speculations based on the literature, there is recent empirical evidence for a direct relationship between the effects of hypnosis and attachment. Burkhard and colleagues (2011) have shown that people with insecure attachment styles have higher levels of hypnotic susceptibility, as assessed by the Harvard Group Scale of Hypnotic Susceptibility (Form A). They conclude as follows:

If securely attached persons are hypnotically less suggestible, this would be connoted rather positively within the architecture of attachment theory; securely attached persons have less separation anxiety and are therefore able to engage in intimate, trustful relationships; they have a positive image of themselves and of others and are open for possible changes in their world view. (Burkard et al., 2011: 180)

Like Popper (2002a), other writers have made similar associations between autocratic leadership and attachment processes. Jacobs (1994), for example, suggests a parallel with the processes of ‘reparenting’ in psychotherapy and discusses this in the context of the development of the ‘cult’ that emerged around the therapist Jacqui Lee Schiff (Jacobs, 1994). The process of reparenting involves replacing a dysfunctional parent role model with the therapist, within the client’s parent ego state. In the case of Schiff, the claim is
that she unethically went beyond just using this process with her individual clients, with the express intention of building a cult around her.

One can see parallels between stage hypnotists carefully collecting subjects using suggestibility tests, then inviting on stage those who pass (the invitation being a further filtering so the stage group has high levels of aptitude and a positive attitude towards being used on stage (see Yapko, 2003)) and cult leaders touring a country, speaking and collecting those susceptible to their ideology. Perhaps in a contemporary context, such as with the self-named ‘Islamic State’, it might be sufficient to post charismatic media online and use social networking as the next step in the process – an invitation to travel to join them.

2.3 Followership and hypothesised follower types

2.3.1 Susceptibility to suggestion and follower types

In Chapter 1 we discussed how, if charismatic leadership and hypnosis are related, we might expect to find some form of shared effects, such as the feeling of involuntariness and the generation of internal imagery in response to imaginative suggestion. Furthermore, not only would one expect to find such effects but one would expect to find these mediated by trait susceptibility to suggestion.

As early as the fifteenth century, The Ship of Fools described people susceptible to ‘tales’ as having their ears inherently open to suggestion:

He is a fool who would believe
Whatever tales his ears receive.
Of fools this is a certain sign:
Their ears are open by design.

(Brant, 1494/1971: 271)

Assuming the quote above refers to some form of suggestibility, there are some interesting pieces of evidence within the hypnosis literature related to personality and hypnotisability. Brown and Oakley (1998), for example, carried out research, using three measures of thinking style, that suggests hypnotic
susceptibility may relate to holistic and emotional styles of thinking and an everyday preference for making decisions using intuition and emotional feeling. This said, it is important to note that, although it is often hypothesised that high hypnotisability relates to fantasy proneness (e.g. Wilson and Barber, 1981; 1983), recent research suggests high susceptibility individuals do not in fact spend a great deal of their day engaged in fantasy and daydreaming (Green and Lynn, 2008).

In recent years, an increasing number of writers on leadership have specifically reflected on the role of trait, type and/or the susceptibility of followers to leadership in general and specifically charisma. However, as Crossman and Crossman note in their review of the followership literature:

> Despite the growing attention in professional and academic literature, a commonly accepted definition of followership does not seem to have emerged. (Crossman and Crossman, 2011: 481)

Despite this, the current author’s reading of the literature suggests that in varying degrees, followership theories stress the roles of and interaction between context (particularly crisis) and leader attractiveness (Zaleznik, 1965; 1977; Kelly, 1992; Chaleff, 1995; Freemesser and Kaplan, 1976; Klein and House, 1995; Madsen and Snow, 1983; Popper, 2002a; Kellerman, 2008; Shamir and Howell, 2005). Shamir and Howell (2005) propose that followers with low self-esteem who are in distress may be more susceptible because they have an unclear self-concept characterised by a not very well-defined negative view of themselves. Campbell and colleagues (1996) in turn suggest that in such circumstances followers’ self-concept may be inconsistent, unstable and uncertain. Supporting these ideas is evidence from Freemesser and Kaplan (1976) who showed that young individuals joining a cult had lower self-esteem compared to a group who had joined a more traditional religious movement.

Returning to the fire metaphor, although it was developed by Popper (2002a), Klein and House (1995) were the first to make use of this within charismatic leadership theory. In particular, they argue that a factor in charismatic leadership may be the openness or susceptibility of followers to charisma; the implication of such thinking for the present investigation being that such
relationships might be present in more generalised leadership and not just the extreme ones discussed by Popper and labelled ‘hypnotic’. As Klein and House (1995) express it:

Charisma is a fire that ignites followers' energy, commitment and performance. Charisma resides not in a leader, nor in a follower, but in the relationship between a leader who has charismatic qualities and a follower who is open to charisma, within a charisma-conducive environment. When a leader shares charismatic relationships with all of his or her subordinates, charisma is homogeneous – a raging fire. When a leader shares charismatic relationships with one or a limited number of his or her subordinates, charisma is not homogeneous but variable – pockets of fire. (Klein and House, 1995: 183)

Klein and House’s three components of charisma (although not referring to hypnosis) specifically suggest susceptibility as a form of necessary cause:

- The spark: the leader with charismatic qualities
- The flammable material: the followers who are open or susceptible to charisma
- Oxygen: the charisma-conducive environment

Empirical research into personality and susceptibility is thin in terms of followers and charismatic leadership, with no direct evidence that there is a relationship to hypnotic susceptibility. The exception to this is the recent brain imaging research discussed in Chapter 1 by Schjoedt et al. (2011), which, although not directly involving hypnosis, found similar brain functioning in high hypnotic susceptibility individuals during hypnosis to that of followers who believed in the charismatic powers of a preacher.

This said, there is plenty of evidence that points towards the importance of follower type within the processes of leadership and specifically charismatic influence, generally. Ehrhart and Klein (2001), for example, have found that follower preferences for charismatic leadership are predictable from values and personality. Personality alone and its interaction with supervisor personality have also been identified as mediating factors in both relationships and follower
commitment (Felfe and Schyns, 2009). Such views of charismatic leadership echo the earlier perspective offered by Willner (1984). For Willner, that sequence began firstly, with (1) a crisis situation, followed by (2) potential followers who were in distress, then (3) an aspirant leader with (4) a doctrine of deliverance.

Follower predisposition to charisma has emerged even more strongly in recent years. In her book *Followership*, Kellerman (2008) argues for a departure from the purely leader-centric approach to leadership theory.

> It’s time to adopt a more expansive approach to leadership, to include followership. I am not arguing that the two be joined only occasionally. I am arguing that leadership and followership be thought of in tandem – as inseparable, indivisible, inconceivable the one without the other. (Kellerman, 2008: 239)

Again, as stated above (in Chapter 1), and as we will return to throughout this thesis, Kellerman makes the distinction between different types of followers, with the level of engagement seen as an indicator of follower type:

- **Isolates** – who remain completely detached
- **Bystanders** – who observe but do not participate
- **Participants** – who are engaged in some way
- **Activists** – who feel strongly one way or another about their leaders and organisations, and act accordingly
- **Diehards** – who are prepared to go down for their cause – whether it is an individual, an idea, or both. (Kellerman, 2007)

The least engaged of the Kellerman’s types are the ‘isolates’, the most engaged the ‘diehards’. In particular, Kellerman notes that followers are not only important when they do something but also when they do not. Kellerman (2008) expresses the various hypothesised roles of different follower types and their interaction in this taxonomy by directly referring to the idea that Hitler had a hypnotic influence:
Hitler’s hypnotic appeal – an admirer once called him a ‘virtuoso on the keyboard of the mass psyche’ – explains his grip on the few who were Nazi Diehards from the start. It also explains the millions of German followers who took part in Nazi politics and policies in other, lesser ways: Participants and Activists. Finally and by extension, Hitler’s grasp says something about the millions of other Germans who played no real role in perpetrating either anti-Semitism before the war or genocide once the war began, but who, nevertheless, by standing by and doing nothing while the Nazis did their dirty work, gave tacit support. These were the Bystanders . .

(Kellerman, 2008: 99-100)

Kellerman develops her taxonomy building on the work of several earlier writers and researchers, in particular Zaleznik (1965), Kelley (1992) and Chaleff (1995).

Zaleznik first published his concept in the Harvard Business Review article ‘The Dynamics of Subordinacy’ (Zaleznik, 1965), returning to the concept 10 years later in the book Power and the Corporate Mind (Zaleznik and Kets de Vries, 1975). Zaleznik’s writings suggested that follower types exist along two intersecting axes: dominance versus submission; and along the second axis those followers who ‘initiate and intrude’ versus those who contribute little or nothing. In turn, four follower groups are defined: impulsive versus withdrawn subordinates; and compulsive versus masochistic. Thus, it is possible to have withdrawn masochistic subordinates etc.

In a similar fashion to Zaleznik, Kelley (1992) places followers on two axes, in this case: independent, critical thinking versus dependent, uncritical thinking; and passive versus active. Where Zaleznik was interested in failed followers and a leader’s contribution to such failure, Kelley was more interested in what might be considered exemplary followers. For Kelley, the ‘myth’ of leadership was something to be rejected in favour of an understanding of the role of followers and their attributes, with followers seen as being as important as leaders. Kelley’s five types are:

- Alienated followers (independent-passive) – free thinking and critical but not participating
• Exemplary followers (independent-active) – exercising independent and critical thinking but engaged with the leader
• Conformist followers (dependent-active) – content to follow the directions of the leader, engaged but not independent in their thinking
• Passive followers (dependent-passive) – not thinking for themselves and in need of constant supervision
• Pragmatist follower (at the intercept between both axes) – questioning but not all the time, sometimes independent, sometimes dependent

Although not stated, the implication of some degree of involuntariness in some followers is again present.

Chaleff (1995), in contrast, argues that followers have far more power and influence than they generally realise. His model suggests an interaction between the amount of support a follower gives a leader and the amount of challenge. Chaleff also uses a quadrants model, this time using the axes of high support versus low support and high challenge versus low challenge to identify four follower styles:

• Implementer (high support – low challenge)
• Partner (high support – high challenge)
• Individualist (high challenge – low support)
• Resource (low challenge – low support)

Kellerman’s thinking (2007; 2008) arguably extends the ideas about extreme context follower susceptibility as expressed in Popper’s work (2000; 2002a) by recognising the potential wider effects on a large group that observing the behaviours of the most engaged (and thus the most susceptible) may have on everyone in the population. Most specifically, bystander effects in such situations might lessen the ability of the charismatic leader to hold a whole population within her/his influence, assuming that the necessary conditions and context are in place to facilitate such leadership (e.g. crisis situations (Willner, 1984)). This is a line of thinking that we will return to in Chapter 9 when we
explore the results of cluster analysis (used to identify follower types in response to oratory) and in the conclusions of this thesis.

2.4 Concluding remarks with regard to the present research

In summary, a review of the charismatic leadership literature, rather than pointing away from the possibility of some form of relationship between charismatic influence and hypnosis, in fact suggested a number of ways in which the two might relate. The pivotal role of oratory within the process, perhaps acting as a form of mental suggestibility test, led to the decision to focus on this area and in turn search within the hypnosis literature for a means of assessing the effects of charismatic leadership oratory in a way that could allow for a comparison with the effects of hypnotic induction. The next chapter summarises the review that took place and the literature from the approach chosen.
Chapter 3 – Hypnosis and altered states of consciousness: a review of the literature

This chapter presents a summary of the historical background to the current hypnosis literature, main contemporary theories and evidence about possible negative effects of hypnosis (relevant to decisions that were made regarding the research design and method, discussed in detail in the next chapter). It also reviews the literature on the wider field of altered states of consciousness and introduces the published research associated with the Phenomenology of Consciousness Inventory.

The main purpose of the hypnosis and altered states of consciousness review was to search for a means to define operationally the effects of charismatic leadership oratory, using an approach that had validity and reliability within the field of hypnosis. The dominance of hypnotic susceptibility scales in the study of hypnosis presented a challenge for the current research. Any research that aimed to explore the hypothesised relationship between charismatic leadership oratory and hypnosis would need to identify an operational approach that could compare any effects to the known effects of hypnosis resulting from hypnotic susceptibility. In the same way, the types of effects associated with these scales are far removed from the kind of effects normally associated with leadership. A second challenge was that the exact theoretical nature of hypnosis remains in dispute, with a wide range of theoretical positions and the fundamental question of why some individuals are more susceptible than others still unresolved (Heap, Brown and Oakley, 2004).

Extending the literature survey within the fields of hypnosis and altered state of consciousness presented a solution to the first of these, as it identified a particular set of approaches, using the Phenomenology of Consciousness Inventory and PCI-Hypnotic Assessment Protocol questionnaires, as having the potential to resolve the question of the valid operational use of a charismatic leadership speech. In particular, the Phenomenology of Consciousness Inventory has the ability to predict Harvard Group Scale of Hypnotic
Susceptibility scores, based on phenomenological data without the use of hypnosis and for any condition. Again, as noted in the introduction, the measure that does this is argued to be equivalent to a ‘general measure of trance’ (Pekala and Kumar, 2007). This was an important finding from the desk research as it meant that a design could be constructed which both reflected the gap in existing experimental research in this area and enabled a comparison to prior hypnosis research and wider notions about altered state and leadership (Lindholm, 1992; Popper, 2002a) that had been identified in the review of the charismatic leadership literature.

3.1 The historical background to hypnosis as an academic field of study

3.1.1 Early evidence for the existence of ‘hypnotic responding’ and the development of empirical research

Some of the earliest references to processes that appear to be similar to hypnosis can be found in the religious practices of ancient Egypt. At the Temple of Imhotep at Saqqara, in the third century BC, there was a practice known as ‘incubation’ or ‘temple sleep’ (Ludwig, 1964; Okasha, 1993). Within this practice, people seeking a cure would engage in rituals and prayer recitation before entering a darkened chamber to sleep and experience a dream. Those completing the rituals believed that this would result in Isis revealing a cure during the dream. A similar procedure appears to have been common in the cult of Asklipios in ancient Greece (MacHovec, 1979). It is also apparent that such practices do not appear to have existed in isolation in the ancient world. MacHovec (1975), for example, argues that there is ‘abundant evidence which shows that hypnosis or a similar induced altered state of consciousness was used in ancient Greece, Egypt, India, China, Africa, and pre-Columbian America’ (1975: 215). There is, in addition to the above, evidence for comparable procedures in the Arabic world during the early Islamic Period (Haque, 2004) with a distinction made between sleep and a process that appears to have been like hypnosis. In the ‘Book of Healing’, Sina (1027) describes the state induced by this process as al-Wahm al-Amil, or ‘the working illusion’ (Abu Hassan, 2014: II) (الوهم العامل).
The practice of hypnosis, as we understand it today, is generally thought to have gained its first widespread attention towards the end of the eighteenth century (see Gauld, 1992). This was mainly a result of the activities of Mesmer, a German physician who applied hypnotic procedures as part of his medical practice (although the term 'hypnotism' was not used until the middle of the nineteenth century). Mesmer's incorrect assumption that hypnosis was related to some form of occult force which flowed through the hypnotist and into the subject led him to apply the term 'animal magnetism' to the phenomenon (Mesmer, 1781) although he had noticed correctly that individuals varied in their response to what he termed 'magnetic fluid'. For example, the first three of his 27 propositions asserted that:

1. A responsive influence exists between the heavenly bodies, the earth, and animated bodies.

2. A fluid universally diffused, so continuous as not to admit of a vacuum, incomparably subtle, and naturally susceptible of receiving, propagating, and communicating all motor disturbances, is the means of this influence.

3. This reciprocal action is subject to mechanical laws, with which we are not as yet acquainted (in Binet and Féré, 1888: 5).

A Royal Commission of Inquiry into animal magnetism in 1784, led by Benjamin Franklin and including the chemist Lavoisier, conducted a number of well-designed experiments, concluding that effects were the result mainly of imagination but also to some extent of imitation and touch. Although Mesmer's theories were soon rejected, his methodology remained of interest to physicians who applied the process without understanding how or what caused such effects throughout the nineteenth century (Gauld, 1992).

The beginning of the scientific study of hypnosis arguably started with the work of Braid who applied the terms 'neurypnology' and 'neuro-hypnotism' to the phenomenon (by which he intended to communicate the notion of 'nervous sleep' (derived from Hypnos, the Greek god of sleep) (Braid, 1843; 1852). Specifically, Braid sought to ground theories related to the phenomenon demonstrated by the Mesmerists within a scientific method. His main
contribution was to demonstrate that many of the effects of Mesmerism (neurohypnotism) could be induced simply by concentrating a subject's attention on an object or idea. He also thought that there was a relationship between hypnotism and Hindu yoga meditation.

By the 1880s it was already accepted by researchers that hypnosis was not related to any physical force (as proposed by Mesmerism) but rather that it was caused by psychological responses mediated by suggestion (Bernheim, 1889; Liébeault, 1889). The main developments in early hypnosis theory came from the work of practitioners who developed their theories on the basis of their clinical experience using hypnosis as tool for treatment (Charcot, 1886; Freud, 1900/1953; Janet, 1889). Importantly, hypnosis remained of interest in the early development of the field of psychology, securing its place as an accepted area for academic research in the years that followed.

Notably, James (1890) building on the ideas of Braid and Charcot, devoted a whole chapter in The Principles of Psychology to hypnotism (James, 1890: 593-616). In this James describes both modes of operating and susceptibility as well as presenting theories about the hypnotic state. James viewed hypnosis as both an experimental method for 'creating divisions of consciousness' as well as a 'laboratory model' for defining naturally occurring disorders related to awareness (Kihlstrom and McConkey, 1990) and thus arguably anticipated many of the developments in hypnosis research that have taken place in modern times. Today, the field has two clear research strands: intrinsic studies and instrumental studies (Oakley, 2006; Oakley and Halligan, 2009). Intrinsic studies are said to be those that attempt to explain hypnosis, whereas instrumental studies use hypnosis as a means to explore wider areas in psychology (such as hallucination, memory, perception and pain). By the 1930s, with the work of Hull (1933) and White (1937), hypnosis research had already adopted an experimental psychology approach involving large groups and statistical theory; however, the most important breakthroughs were to come from the development of more robust assessments of hypnotisability.
3.2 Modern hypnosis research

3.2.1 The development of measures to assess ‘hypnotic’ response

The development of scales that provide reliable measures of hypnotic susceptibility and related areas transformed the field of hypnosis in the twentieth century (Bowers, 1998; Barber and Wilson, 1978; Gheorghiu, Polczyk and Kappeller, 2003; London, 1962; Pekala, 1991; Shor and Orne, 1962; Spanos et al., 1983; Spiegel, 1974; Tart, 1970; Weitzenhoffer and Hilgard, 1959; 1962; 1963; 1967). Although such scales have often created as much debate as they have consensus (Hilgard, 1981; Pekala, 2010a; b; c; Terhune and Cardeña, 2010; Woody, 1997; Wagstaff, 2010; Wagstaff, Cole and Brunas-Wagstaff, 2008; Weitzenhoffer, 1980; 2002), nonetheless they have remained the foundation of hypnosis research. For example, Barnier and Conkey (2004) reviewed the use of hypnotic susceptibility scales across 119 articles published in the *International Journal of Clinical and Experimental Hypnosis* between 1992 and 2001. They found that 98% of laboratory research involved the use of one or more hypnosis scales. The first early scales to take into account variation in response to hypnosis were developed by Bernheim (1888) and Liébeault (1889). Liébeault's six-point scale, for example, sought to measure hypnotic depth from ‘drowsiness’ through to ‘profound somnambulistic sleep’. There was a further phase of development in the 1930s (Barry et al., 1931; Davis and Husband, 1931; Friedlander and Sarbin, 1938) and 1940s (Le Cron and Bordeaux, 1947; Watkins, 1949); however, it was the work carried out in the late 1950s by Weitzenhoffer and Hilgard (1959) which set the stage for the contemporary scientific approaches to the study of hypnosis.

Hypnotic susceptibility scales generally consist of a pre-hypnosis discussion with the participant, followed by a hypnotic induction and subsequent series of increasingly difficult suggestion tests that the participant will either pass or fail. Scales include cognitive or motor suggestions or a combination of both, and aim to create either positive or negative effects (i.e. production of effects, or inhibition of them). Cognitive suggestions seek to elicit a change in thinking (such as a hallucination) whereas motor suggestions seek to generate some form of physical effect (such as eye catalepsy). For example, the positive
suggestion to levitate the arm after induction aims to produce a motor effect, whereas the suggestion to experience an auditory hallucination (such as the buzzing fly in the Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962)), a cognitive one. A negative hallucination, such as blindness, has also been used in some approaches. The structure of the Harvard Group Scale of Hypnotic Susceptibility (the scale which the Phenomenology of Consciousness Inventory hypnoidal state, or trance depth, score correlates to) is described in more detail in Chapter 6.

3.2.2 State versus non-state, hypnosis versus suggestion – key definitions in modern research

Broadly speaking, the field of intrinsic hypnosis research has divided into two separate areas of study. These are sometimes called the fields of trance and suggestion (Heap, 1996). Theories are categorised as being ‘state’ or ‘non-state’ depending on whether they accept that hypnosis is a special state, or generates an altered state of consciousness, with a long-held divide between these two types of theory. A propos the distinction between trance and suggestion, mentioned above, a hypnotic trance can be seen as the end product of hypnotic induction, with hypnotic induction defined as the suggestions or processes which facilitate a focusing of attention and frequently (although not by necessity) suggestions related to relaxation (see for reviews, Jamieson, 2007; Nash and Barnier, 2008). Suggestion can be defined as the instruction to have experiences, either with or without a hypnotic induction. Hypnotic suggestions, therefore, are suggestions which take place within a hypnotic context following hypnotic induction (and deepening of trance state). Sometimes the distinction between product and procedure is made using the terms ‘hypnosis’ and ‘hypnotism’, in which case hypnotism is used to mean the procedure and hypnosis the product (trance) (Pekala et al., 2010a; Pekala, 2015; Barnier and Nash, 2008).

Irrespective of which side of the fence theorists sit (state or non-state) and whether or not they view hypnosis as an altered state of consciousness, the main feature of hypnotic response is generally agreed to be the experience of involuntariness (often referred to as the ‘classic suggestion effect’
In other words, from the perspective of the subject, the hypnotic effect is taking place without their control (as is the case with arm levitation, where the subject’s experience suggests that some outside force is moving their arm upward). It is this which some charismatic leadership theory draws on when it refers to the idea of ‘loss of self’ in extreme charismatic environments (Popper, 2002a). Level of response to hypnotic suggestion is related to (and considered to be a measure of) a person’s hypnotic susceptibility which, as was discussed in Chapter 1, follows a normal distribution in the general population (Hilgard, 1965). Hypnotic induction is, however, not a prerequisite for suggestion to have an effect. Indeed, it is clear that the best predictor of a person’s susceptibility to hypnosis is in fact their response to the same suggestion without induction (Braffmann and Kirsch, 1999). To illustrate that effects such as altered experience of volition can easily be produced as a result of a goal held by the person themselves and without a hypnotist or a hypnotic induction, Dienes (2012) gives the following:

An example . . . is 'magnetic hands', which 90% of people can experience: hold your hands out in front of you, palms facing each other and imagine your hands are magnets, creating a force pulling your hands together. You have responded successfully if you felt a force pulling your hands together, as if by themselves. If you tried this now, the goal was set by yourself without the need for a hypnotist to be present. (Dienes, 2012: 268)

This said, there is evidence that induction increases response to suggestion, especially where there has been an increase in expectancy caused by labelling the procedure used as ‘hypnosis’ (Ghandi and Oakley, 2005). Ghandi and Oakley (2005) argue that the very use of the word ‘hypnosis’ deepens trance. Specifically, they found that the same hypnotic procedure produced a modest increase in suggestibility when it was called ‘relaxation’, but a very significant increase if it was labelled ‘hypnosis’ (Ghandi and Oakley, 2005: 304).

According to the state view of hypnosis (for example Hilgard, 1979; 1991), hypnotic induction is seen as producing an altered state of consciousness, with hypnotic trance associated more recently with changes in brain function (see Crawford and Gruzelier, 1992; Gruzelier, 1998; Dienes and Pemer, 2007).
Such theories argue that response to hypnotic suggestion is caused by some form of special process (such as dissociation (Hilgard, 1973; 1991a; Bowers, 1992; Woody and Bowers, 1994) or other alterations to consciousness (Brown and Oakley, 2004; Gruzelier, 2005)).

Non-state theorists (for example, Spanos et al., 1980) emphasise evidence that shows that people respond to certain suggestions outside of hypnosis almost to the same degree as they do after hypnotic induction and argue, therefore, that the nature of hypnosis experiments themselves may be a factor influencing effects. Thus, from a non-state perspective, hypnosis is not seen as a special condition but rather something that can be explained as being the product of a normal everyday psychological process (for example, related to expectancy (Kirsch and Lynn, 1997), attitude and motivation). Despite this, the state/non-state divide has looked increasingly untenable in recent years, mainly as a result of neurophysiological evidence, leading researchers such as Kihlstrom (2008) to propose that it is possible to adopt a position in which both ‘state’ and ‘non-state’ theories can exist simultaneously – what Kihlstrom refers to as a ‘third way’, a position that arguably chimes with Greenfield’s (2001) observations about altered state:

This ‘third way’ in hypnosis research construes hypnosis simultaneously as both a state of (sometimes) profound cognitive change, involving basic mechanisms of cognition and consciousness, and as a social interaction, in which hypnotist and subject come together for a specific purpose within a wider socio-cultural context. (Kihlstrom, 2008: 41)

Responding to similar issues, other writers suggest the need for hypnosis research to recognise that there are multiple levels of analysis and multiple types of research questions relating to different domains of explanation (informational, experiential and physical), and that from these ostensibly opposing perspectives hypnosis appears very different as a phenomenon (Jamieson and Hasegawa, 2007). This drive for consensus is illustrated again (as was discussed in the introduction) by the paper written by Kirsch and colleagues (2011).
3.2.3 A summary of the main contemporary theories about the nature of hypnosis

The main non-state theories are the social-cognitive theories of Spanos and colleagues (for example, Spanos, 1996; Spanos and Chaves, 1989) and response set theory (Lynn, Rhue and Weeks, 1990; Kirsch and Lynn, 1997) both of which can be seen as a development of social learning theory (Kirsch, 1991). Specifically, Spanos and colleagues argue that the feeling of involuntariness (or classic suggestion effect) results from a subject’s motivation and expectation that the effects will be effortless, not from any special process. Similarly, response set theory (Lynn, Rhue and Weeks, 1990; Kirsch and Lynn, 1997) proposes that subjects have response expectancy that they will follow instructions and produce behaviours that are experienced as involuntary. Thus a subject expects suggestions to alter his/her subjective experience and this ultimately leads to a change in that experience and the production of involuntary responses to hypnotic suggestions.

Most cognitive or state-based theories reference in some way or another to concepts related to executive control and in some cases automaticity. The term ‘automaticity’ (Bargh, 1994; 1997) is applied to the recognition that we often perform many activities on ‘automatic pilot’ (whilst our minds turn to other things (‘System 1’ processing in dual-process accounts of reasoning (Stanovich and West, 2000)). It is argued that much of everyday life (including feeling, thinking and doing) is automatic and is triggered by current experiences from the external environment (e.g. objects and the behaviour of others). Theories of automatic processing arose from studies of divided attention and specifically the dramatic improvement in performance that often occurs as a result of practice. Following earlier suggestions that a theoretical separation should be made between automatic and controlled processing (Shiffrin and Schneider, 1977), Norman and Shallice (1986) made a distinction between fully automatic and partially automatic processes. At the heart of this theory is the concept of schemata. Schemata are hierarchical and interrelated representations of the sequences of processing operations that are involved in well-learned behaviour. Schemata have an activation threshold triggered by certain stimuli (with activation appearing to be related to the volume of trace memory
fragments associated with the schema (Logan, 1988)). When a schema’s activation threshold is reached it is triggered. This leads to the activation of the sequence of processing operations related to the well-learned behaviour and thus to automatic action. Norman and Shallice (1986) identified three levels of functioning:

- Fully automatic functioning which is controlled by schemata
- Partially automatic processing that involves ‘contention scheduling’ without conscious control or deliberate direction. Contention scheduling is said to be the process which resolves conflicts among schemata
- Deliberate control by a supervisory attention system (later research suggests that this system resembles the central executive of working memory (Baddeley, 1986)), a process associated with high degrees of first person conscious experience (as with working memory).

Norman and Shallice (1986) propose that fully automatic processes take place with only limited conscious awareness. These processes would frequently disrupt behaviour if given complete freedom, therefore ‘contention scheduling’ acts as an automatic conflict resolution process. Contention scheduling allows for the selection of an appropriate schema from the available schemata based on current priorities and environmental input. Thus, more awareness that is conscious takes place in partial automatic processing than in fully automatic processing. During decision-making, a higher-level supervisory attention system, believed to be located in the frontal lobes, permits flexibility in response to novel situations. Evidence supporting this came from research involving patients with frontal lesions (Burgess and Shallice, 1996) which indicated that some had problems in the area of schema construction whereas others had problems with schema implementation, implying that construction and implementation represent different, separate processes. In modern daily life the experience of automatically driving your car with limited awareness of all the actions you are carrying out until something novel requiring more conscious processing occurs (such as the car in front braking suddenly) would be a good example of the above.
One recent hypnosis theory, in particular, that has both focused its attention on the concept of automaticity and the role of the supervisory attention system, and has also attempted to integrate a number of cognitive and neurophysiological perspectives, is the integrated cognitive theory of hypnosis and high hypnotisability (Brown and Oakley, 2004). Brown and Oakley note evidence from cognitive neuroscience and related fields, which suggests that incoming information from our senses is extensively analysed before the activation of any attention-related mechanisms. These systems then determine which information will provide the basis for further processes, or the activation of behaviour. As Halligan and Oakley (2000) put it in an earlier article:

We suggest that all the thoughts, ideas, feelings, attitudes and beliefs traditionally considered to be the contents of consciousness are produced by unconscious processes – just like actions and perceptions. It’s only later that we become aware of them as outputs when they enter our consciousness. As pointed out by Jeffrey Grey of the Institute of Psychiatry in London – consciousness occurs too late to affect the outcomes of the mental processes that it is apparently linked to. You may prefer the notion that you are in charge of your own mind. But where did that idea come from? If you stop to think about it, you’ll probably find that it just popped into your head – like all your thoughts. Perhaps you have decided to read the rest of this article. But did ‘you’ really make that choice? (Halligan and Oakley, 2000: 35)

Drawing together a number of strands of cognitive and neurophysiological research, Brown and Oakley’s theory (2004) argues that following a pre-attentive process, a primary attention system then establishes the most meaningful interpretation of the environment and uses this interpretation to produce representations that yield behaviour control. Primary representations serve as triggering inputs for cognitive networks and action schemata, resulting in external behaviour and the subsequent experience of consciousness. Where existing knowledge is insufficient to fire schemata immediately, such as novel situations, the higher-level secondary attention system takes control. This system manages planning, goal setting, decision making and problem solving. It is the secondary attention system processing that is the source of the ‘first-
person’ account of consciousness and our sense of self (Halligan and Oakley, 2000). Summarising hypnosis, in general, and suggestion specifically, Brown and Oakley propose that there are two routes to suggestion: the automatic activation of low-level schemata by an external input and the indirect activation of low-level schemata by the supervisory attention system. In the case of the second of these two routes, this is said to encompass deliberate use of supervisory attention system strategies (e.g. ‘thinking with’ suggestions or goal-directed imagining) (Brown and Oakley, 2004). Suggestion effects can thus occur as a result of a variety of external inputs, including hypnotic induction, context, role, expectancy and task.

Dissociated control theory (Bowers, 1992; Woody and Bowers, 1994) similarly applies Norman and Shallice’s model of executive control. This theory proposes that when a person is hypnotised, the supervisory attention system becomes functionally dissociated from contention scheduling. Therefore, the two levels cease to work together effectively. With the partial higher-level control system disabled, an individual is more dependent upon contention scheduling related automatic processes. Contextual cues and the suggestions of the hypnotist influence the contention scheduling system, and this determines a person’s experience. Although there is evidence related to the use of the Stroop test which has demonstrated that high hypnotisables are more likely to produce errors in this test than low hypnotisables (a phenomenon predicted by the theory) other research has in fact demonstrated greater control of attention during hypnosis (Jamieson and Woody, 2007).

Similarly, drawing on the notion of dissociation are dissociated-experience theory and neodissociation theory. Dissociated-experience theory (Kihlstrom, 1985) suggests that high hypnotisables execute hypnotic responses with effort, but that such effort is dissociated from consciousness, or prevented from entering conscious awareness. Neodissociation theory (Hilgard, 1979) proposes that hypnotic phenomena are produced through dissociation within higher-level control systems (unlike the dissociation between high- and low-level control systems in dissociated control theory). Hypnotic induction is said to split functioning of the executive control system into different streams. Part functions normally but is not able to present itself into conscious awareness...
due to existence of an ‘amnesic barrier’. The theory was inspired by hidden observer experiments which supported the theory that a person can observe pain under hypnosis without necessarily experiencing it. Finally, drawing on more general psychological concepts, ego-psychological theory (Fromm, 1992) develops the idea that depth of hypnotic trance relates to the degree that a subject loses awareness of the distinction between imagination and reality (so-called ‘generalised reality orientation’). The theory makes the distinction between primary processes (emotional, holistic, illogical, unconscious, developmentally immature) and secondary processes (affect-free, analytical, logical, conscious, developmentally mature). Normal adult functioning is biased towards secondary processing; in other words, during hypnosis a highly susceptible subject ‘lets go’ of some secondary activity.

Without doubt it has been evidence from brain imaging showing a functional neuroanatomy related to high hypnotisability that has most influenced the field of hypnosis in recent years (see Barabasz and Barabasz, 2008; Nash and Barnier, 2008; Oakley and Halligan, 2009). This has led some researchers such as Kihlstrom to propose that ‘the conclusion that hypnosis reflects an altered state of consciousness seems unavoidable’ (Kihlstrom, 2008: 35) and Gruzelier to argue strongly for an altered state perspective (Gruzelier, 2005). However, it is important to remember that when Gruzelier refers to altered state of consciousness he (and other neuroscientists) are generally referring to ‘third person’ experience of consciousness (as a neurophysiological process – i.e. the scientist’s observational position) rather than ‘first person’ phenomenological experience. Variation in the use of the term ‘altered state of consciousness’ is discussed in more detail below.

Neurophysiological theories (Crawford and Gruzelier, 1992: Gruzelier, 1998) base their arguments on evidence which appears to show that high hypnotic susceptibility individuals may have more efficient executive functioning compared to low susceptibles, with high hypnotisables having enhanced ability to use their attention in a variety of ways. Gruzelier’s research indicates that the interrelations between brain regions that are initiated by the hypnotist represent an atypical brain system alteration that is the result of both interpersonal and cultural contexts. For example, in one study, Gruzelier
looked at 24 subjects. Half had been categorised as highly suggestible, half as more resistant to hypnosis. Participants were tested before and after a typical hypnotic induction. In the resistant subjects the anterior cingulate gyrus was less strongly activated after the procedure than before it. In the highly suggestible group, the anterior cingulate, and the governing regions, were more strongly activated when they were in a trance state, demonstrating that they were finding it harder to plot their actions. In other studies, Gruzelier has shown that the medio-frontal cortex, which governs perceptions of how we will feel should we take a future course of action, is also affected. Gruzelier concludes that an impaired ability to plan for oneself, as a result of hypnosis, leads people to be more suggestible (Gruzelier, 1998; 2000a; b; 2006).

In parallel, it has been proposed that each of three stages in the process of hypnotic induction (fixation of attention, relaxation and suggestions to experience imagery) may have a specific, related functional neuroanatomy in high hypnosisables (Gruzelier, 2006). The first stage during instructions to fixate attention and listen to the voice of the hypnotist appears to involve an ‘attentional network including thalamocortical systems and parietofrontal connections’ which engage a ‘left anterior focussed attention control system’ (Gruzelier, 2006: 22). Such systems and connections require left hemispheric frontotemporal processing. The second stage, involving the replacement of fixation with the closing of the eyes, fatigue suggestions and relaxation, appears to activate frontolimbic inhibitory processes. These have ‘dissociative or uncoupling consequences’ and ‘underpin the suspension of reality testing and critical evaluation, and the handing over of executive and planning functions to the hypnotist; in other words the “letting go” component of the hypnotic induction. This letting go is accompanied by a lateral shift towards a right hemispheric preference’ (Gruzelier, 2006: 23). The final stage, involving passive imagery, causes a redistribution of functional activity, in particular augmentation of posterior cortical activity in the right hemisphere. This type of content, when used in induction, may ‘facilitate right hemispheric processing as does emphasizing past experience and emotion’ (Gruzelier, 2006: 23).

Other evidence from neuroscience and cognitive neuroscience suggests that key areas of the brain such as the precuneus may be partially deactivated as
the result of ‘hypnotic induction’ and suggestion (Faymonville, Boly and Laveys, 2006). The precuneus is an area of the brain associated with consciousness, self-related mental representations and non-self-referential goal-directed actions (Cavanna and Trimble, 2006). Of particular relevance, perhaps, to notions of extreme charismatic leadership is the suggestion by Woody and Szechtman (2007) that neurophysiological evidence may show that the motivational/affective state that is ‘primed’ in individuals with high susceptibility during hypnosis is one ‘related to maintenance of social hierarchy and in particular to the maintenance of subordinate status in a dominant/subordinate relationship’ (see the diagram below) (Woody and Szechtman, 2007: 250). In particular, they propose that low hypnotic susceptibility individuals have no or low levels of activation during social subordination, whereas the highly susceptible experience high levels of activation during such subordination, a process facilitated by the deactivation of frontal functions and a greater reliance functionally on processes related to the limbic system. Their model is illustrated below in Figure 3.1.

Not all writers are completely convinced that the evidence from neuroscience establishes the state theory of hypnosis. As Lynn and colleagues (2007) point out from a non-state perspective:

... if large quantitative differences in psychophysiological variables were observed across hypnosis and non-hypnotic conditions, it would beg the question of what was responsible for such differences... the failure of state theorists to forward a priori hypotheses that link subjective experience and behaviours specific to hypnosis with psychophysiological changes in specific areas or networks of the brain leaves many studies open to a number of interpretations, entirely consistent with non-state views. (Lynn et al., 2007: 159)
Figure 3.1: A model of response to hypnotic suggestions for individuals with low hypnotisability (upper panel) and high hypnotisability (lower panel)

**Low Hypnotizable:**
No Activation of Social Subordination

![Diagram of low hypnotizable model]

**High Hypnotizable:**
Activation of Social Subordination

![Diagram of high hypnotizable model]

They also point to weaknesses in research design in this area; in particular, they argue that there ‘has been a tendency to confound induction with suggestion variables’ (Lynn et al., 2007: 160) where the wording of suggestions made after induction varies compared to that of the suggestion made without induction.

One other theory that has gained prominence in recent years is cold control theory. Cold control theory (Dienes and Perner, 2007) is a cognitive theory which again is based on the assumption of the existence of unconscious executive control. However, Dienes (2012) argues that cold control theory is not so much an alternative to the existing main theories as ‘a way of thinking about each’ (Dienes, 2012: 269). The theory makes a distinction between control and awareness in terms of HOT (higher order thought) theory (Rosenthal, 2002). The argument goes as follows. We are conscious of mental states by having thoughts about those states. Therefore, a thought about being in a mental state is a second-order thought (SOT). Third-order thoughts (TOTs) are also possible. In this way, the theory makes a distinction between being in a mental state of mind and being aware of being in a mental state. From this perspective, affirmative response to a hypnotic suggestion is achieved through the formation of the intention to perform an action without the generation of any higher-order thoughts related to that intention.

3.2.4 Negative effects of hypnosis

The question of whether to formally include hypnosis as a comparison condition within the research design was an important consideration, as it raised ethical concerns in the context of the current only tentative and speculative association between hypnosis and leadership. In the light of this, the literature related to the negative effects of hypnosis was also reviewed. Coe and Ryken (1979) looked at the effects of the Stanford Hypnotic Susceptibility Scale, Form C (Weitzenhoffer and Hilgard, 1962) and compared this with a range of conditions (including: a verbal learning experiment, the taking of examinations, attendance at a class, and college life across a group of 209 introductory psychology students). They concluded that: ‘hypnosis is no more bothersome than are the comparison activities’ (p. 673). In contrast, McHovec (1986) suggested that the
effects of hypnosis are under-reported and proposed that, in clinical or experimental situations, approximately 15% of participants may experience mild negative effects, 5% moderate effects and 2% severe effects. Despite McHovec’s assertion, there has been very little controlled research and most evidence is anecdotal (Pekala et al., 2009).

Within the last 10 years there have been four published papers that have reviewed the negative effects of hypnosis (Lynn, Martin and Frauman, 1996; Barber, 1998; Gruzelier, 2000b; Pekala et al., 2009). Lynn, Martin and Frauman (1996) looked a range of published research and concluded that the majority of people (approximately 60–70%) describe their experience of hypnosis as relaxing and positive. They note that between 5% (Crawford, Hilgard and MacDonald, 1982) and 31% (Hilgard, 1974) reported transient unsuggested effects after hypnosis such as headaches, dizziness and confusion. A similar study (Peterson et al., 1991), using the Harvard Group Scale of Hypnotic Susceptibility, Form A [HGSHS: A] (Shor and Orne, 1962), suggested that individuals were no more likely to have experienced negative effects ‘taking a college exam, participating in a research experiment, and the last two days of college life in general’ than from hypnosis. However, Barber concluded that in psychotherapeutic activity, hypnosis was likely to increase the likelihood of complications (Barber, 1998). Gruzelier (2000b) is the most cautious. He proposes that the most serious side effects occur because of the process of stage hypnosis. Quoting a wide range of anecdotal evidence, he also suggests that there is growing evidence of negative effects in both clinical and experimental contexts.

Other writers and researchers in the field are more inclined to agree with the position taken by Lynn and colleagues, above, than with the one held by Gruzelier. For example, Pekala looked specifically into positive affect, negative affect and the negative effects of using the PCI-Hypnotic Assessment Protocol with 300 drug and alcohol users and showed that the PCI-Hypnotic Assessment Protocol is more likely to generate positive rather than negative affect. These results were cross-validated on a smaller second sample of subjects. The research, additionally, made use of a Dissociative Experiences Scale and found that although negative affect correlated with scale scores and
falling asleep during the protocol, such results were not replicated during the cross-validation. Furthermore, although mild transient negative effects were reported by about 10% of participants (e.g. headache, confusion, disorientation etc.) no subjects reported any moderate or severe effects as a result of experiencing the PCI-Hypnotic Assessment Protocol. A further investigation with another 400 subjects has been carried out and these results have been further replicated (full analysis of the data was due to be carried out in the autumn of 2009); however, according to correspondence with Ron Pekala, only 5–10% reported mild effects and there were no reports of moderate or severe effects (Pekala, 2009). In summary, the evidence concerning negative side effects is contradictory and mixed. However, in the context of a business school study, it suggested the need for caution in the use of a formal hypnotic induction outside of a clinical context or one in which there was strong empirical evidence to justify such inclusion and at least the use of one-to-one debrief processes for any large group used in an experimental design. These issues will be discussed in more depth later.

3.3 Altered states of consciousness and the Phenomenology of Consciousness Inventory

3.3.1 Defining altered states of consciousness

Fascination with the study of altered states of consciousness, like hypnosis, can be traced back to the early years of psychology and specifically James’ interest in what he called ‘other forms of consciousness’ (James, 1902).

... our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the flimsiest of screens, there lie potential forms of consciousness entirely different ... No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded. How to regard them is the question. (James, 1902: 388)

James’ final observation about the question of how to regard ‘other forms of consciousness’ (1902) remains a current issue in relation to what today might be called altered states of consciousness (Cardeña and Winkelman, 2011a; b).
Ludwig (1966) echoed James’ observations in his classic paper which brought the term ‘altered state consciousness’ formally into the academic literature for the first time:

Beneath man’s thin veneer of consciousness lies a relatively uncharted realm of mental activity, the nature and function of which have been neither systematically explored nor adequately conceptualized. (Ludwig, 1966:225)

Ludwig defined an altered state of consciousness as:

‘any mental state(s) . . . recognised subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience of psychological functioning from general norms for that individual during alert, waking consciousness. (Ludwig, 1966: 225).

Ludwig reiterated and further expanded on this definition in one of the chapters in Tart’s classic 1969 reader (Tart, 1969). In this, Ludwig suggests that ten factors are usually characteristic of most altered states of consciousness to one degree or another: alterations in thinking, disturbed time sense, loss of control, change in emotional expression, body-image change, perceptual distortions, change in meaning or significance, sense of the ineffable, feelings of rejuvenation, and hypersuggestibility (Ludwig 1969,13-17).

Ludwig’s basic concept was developed by Tart (1975) in his notion of a ‘discrete state of consciousness’ (d-SoC), which he defined as a ‘unique, dynamic pattern or configuration of psychological structures’, with a ‘discrete altered state of consciousness’ (d-ASC) seen as being qualitatively different from a person’s ‘baseline state of consciousness’ (b-SoC) or ordinary state. The mid-to-late 1970s saw a number of theoretical positions presented. Zinberg (1977), reflecting the complex relationship between different states, proposed that the term ‘alternate’ might be a better word than altered because such a term clarifies better that ‘different states of consciousness prevail at different times for different reasons and that no one state is considered standard’ (1977: 1).
In a contemporary exploration of the same concepts, Singer emphasised intensity of experience over Tart’s concept of pattern (Singer, 1977); whilst Izard, in parallel, pointed to the significance of emotions in generating altered states and bonding or disbonding between dimensions (Izard, 1977). These two concepts are discussed in further detail below (alongside Tart’s) in Chapter 8, as together they form the theoretical underpinning for the analytical methods applied to the use of the Phenomenology of Consciousness Inventory.

Despite diverse definitions and the difficulty of establishing exactly what an altered state of consciousness is (see Barber, 1976a for early discussions), it is clear that such notions are universal across cultures (Bourguignon, 1973). Sampling 488 societal groups, Bourguignon (1973) found that 90% showed some form of institutionalised or culturally embedded forms of altered state of consciousness; other writers have proposed an innate human drive to experience such states (Weil, 1972; Siegel, 1989).

As Beischel, Rock and Krippner (2011) note, early definitions were prone to a degree of ‘fuzziness’. However, over the past 50 years there has been an increasing degree of clarity in a range of multidisciplinary fields. In particular they point to several significant points of development, such as Farthing’s *The psychology of consciousness* which discussed a range of altered states of consciousness such as dreaming, hypnosis meditation and the use of psychedelic drugs. Farthing (1992) arguably went further than Tart in beginning to define elements of the ‘qualitatively distinct organisation of the patterning of mental function’ (Tart, 1972: 1203) necessary to fulfil Tart’s definition of an altered state of consciousness. Specifically Farthing (1992) proposes a list of 14 factors that are important in respect of changes in consciousness:

- Attention
- Perception
- Imagery and fantasy
- Inner speech
- Memory
• High-level thought processes
• Meaning and significance
• Time perception
• Emotional feeling and expression
• Arousal
• Self-control
• Suggestibility
• Body image
• Sense of personal identify

Discussion and research into altered states of consciousness have continued to expand and develop, as is illustrated by the recent extensive survey of the literature mentioned above (Cardeña and Winkelman, 2011a; b). Cardeña and Winkelman’s review (2011a; b) illustrates both the extent of the literature and the wide range of disciplines that have taken an interest in the notion of altered consciousness and the ongoing challenge of definition (see Greenfield, 2001).

As well as covering the more well known areas of association, such as sleep, dreams and other biological cycles (Kokoszka and Wallance, 2011), addiction (Blätter, Fachner and Winkelman, 2011), psychoactive drugs (Nichols and Chemel, 2011; Schaefer, 2011) and the neurochemistry of altered consciousness (Presti, 2011), Cardeña and Winkelman’s work also illustrates the extent of the literature in other less known areas. For example, there are a wide range of publications in fields such as evidence from pre-history (Ustinova, 2011; Cardeña and Alvarado, 2011), religion (Geels, 2011), eastern approaches (Shear, 2011), shamanism (Winkelman, 2011) and about music (Fachner, 2011), performance art (Zarrilli, 2011), philosophy (Windt, 2011), sexual activity (Maliszewski et al., 2011) and spirit possession (Sluhovsky, 2011).

The term ‘altered states of consciousness’ is likewise associated with psi research into areas such as mediumship, telekinesis and trance states generally, as is noted in Kelly and Locke’s survey (Kelly and Locke, 2009).
Other notable recent publications have included two American Psychological Association publications (Cardeña, Lynn and Krippner, 2000; Barušs, 2003) which together have helped to capture the current state of the literature that has explored experiences related to such areas as hallucinations, hypnosis, synaesthesia, trance and near-death, psychedelic and out-of-body experiences.

To some degree difficulties in definition still sit at the heart of the problem of researching altered states, alongside the parallel question of how to operationalise first-person experience of consciousness in a way that would be agreeable to a wide range of research perspectives. Indeed, Chalmers’ (1995) observation that ‘there is nothing we know more intimately than consciousness but there is nothing harder to explain’ (Chalmers, 1995: 200) remains in many ways as relevant today as it did nearly 20 years ago despite the numerous advances in brain imaging techniques and approaches.

As is noted by Blackmore (2003; 2009) attempts to explain and operationalise altered states of consciousness tend to split broadly into the areas of objective definition or subjective definition. Blackmore gives as an example the way in which consciousness has been defined both in terms of conscious awareness, attention and memory (Farthing, 1972) and as conscious awareness and unconscious function (Krippner, 1972). In the case of objective definitions, an altered state of consciousness has often been defined according to the method by which it has been induced (for example, hypnosis, or through the administration of a psychoactive drug). The problem with such definitions is that one person’s experience of tripping on LSD may be different to another person’s, as might be one person’s experience during hypnosis compared to another’s. This has led some research to focus on objective measures such as changes in physiology (as in Gruzelier, 2005). Certainly this is the prevailing notion of an altered state of consciousness in the field of contemporary hypnosis, in which, as was noted above, brain imaging evidence for functional differences in the brains of the high hypnotisables and an apparently unique three-stage process in the brain during hypnosis have been taken as evidence which might be considered to have resolved the state versus non-state debate in favour of the altered state position. Arguably, despite adding scientific rigour and objective measurement to research in this area, the fundamental issue of
the nature of an altered state of consciousness remains unresolved and sidesteps the issue of the relevance of subjective experience. As Tart wrote in 1969:

Whenever I speak on the topic of dreams, I mention a very unusual sort of dream . . . I always ask whether anyone has the slightest doubt that he is awake, that he is in a 'normal' state of consciousness at that moment. I have never found anyone who had difficulty in making this distinction. (Tart, 1969: 1)

For Tart, and this remains the case, any definition which fails to take into account subjective experience is incomplete (Tart, 2011).

3.3.2 The phenomenology of consciousness as a means of operationalising altered state of consciousness

One approach that has sought to resolve some of the issues related to accepting the validity of subjective experience, whilst attempting to apply a degree of objective measurement to the assessment of alterations to consciousness is the Phenomenology of Consciousness Inventory (PCI) (Pekala, 1991; 2007; 2015).

In essence, the PCI takes as its starting point the need to anchor subjective experience of consciousness with a valid and reliable psychometric method; whilst at the same time using as a baseline for the assessment of the concept of trance the effects of hypnosis (through the use of a regression equation that predicts Harvard Group Scale of Hypnotic Susceptibility (Form A) scores (Shor and Orne, 1962)). Pekala and colleagues have used the term psychophenomenology to describe this form of research and various analytical methods that can be used to study the subjective experience of consciousness using the PCI and PCI-Hypnotic Assessment Protocol. However, they make a distinction between this methodology and the approaches of neurophenomenology espoused by Varela and colleagues, despite accepting the potential value of both approaches in the investigation of subjective experience (Pekala, 1985; 1991; Pekala and Kumar, 2000; 2007; Varela, 1996). Pekala and
colleagues draw on a number of perspectives to justify the exploration of subjective experience through such an empirical method:

Over 30 years ago Nisbett and Wilson (1977) suggested that introspective access is ‘not sufficient to produce generally correct or reliable reports’ (p. 233). Smith and Miller (1978), in their rebuttal, suggested that assessment of cognitive processing may not be as inaccessible as Nisbett and Wilson indicate. Nisbett and Wilson may be partially correct when relating individuals’ attributions to their actions. But when asked to describe, not the reasons (the why), but the content (the what), of their subjective experience, people are much more accurate, as Ericsson and Simon (1980), Lieberman (1979), and Singer and Kolligian (1987) have demonstrated. (Pekala et al., 2008: 26)

Pekala and Kumar (2007) also accept the importance of the neurophysiological evidence, pointing out the potential benefits of a mixed-methods approach. Currently, for example, Pekala is beginning research looking for associations between brainwave patterns and the PCI (from correspondence) although no published results are currently available.

The PCI assesses subjective experience for 12 major dimensions and 14 minor dimensions (indicated in brackets):

- Altered state of awareness
- Altered experience (body image, time sense, perception, unusual meaning)
- Attention (direction and absorption)
- Arousal
- Internal dialogue
- Visual imagery (amount and vividness)
- Negative affect (anger, sadness and fear)
- Memory
- Positive affect (joy, sexual excitement and love)
- Rationality
• Self-awareness
• Volitional control

The dimensions are discussed in more detail in the next chapter (4).

Concerning hypnosis, Pekala and colleagues have shown that there is a clear change in the structure of consciousness for high hypnotisables compared with low hypnotisables (discussed in depth in Chapter 8).

As mentioned in the introduction, researchers have used the PCI questionnaire to explore a varied and extensive range of experiences. The largest body of research is in the area of hypnosis. Many of these hypnosis studies have involved the questionnaire’s original designer (Kumar and Pekala, 1988; Kumar and Pekala, 1989; Kumar, Pekala and Closkey, 1999; Kumar, Pekala and Mercano, 1996; Pekala et al., 2004; 2009; 2010a; b; Pekala and Kumar, 1984; 1987; 2000; Pekala and Forbes, 1997; Pekala, 2002; Pekala and Maurer, 2013; Pekala and Nagler, 1989; Pekala, Steinberg and Kumar, 1986; Varga et al., 2001). However, there have also been studies by other researchers (for example Angelini, Kumar and Chandler, 1999; Cardeña, 2005; Spinhoven et al., 1993). Other clinical studies include depression and anhedonia (McCloskey, Kumar and Pekala, 1999), epilepsy (Johanson et al., 2008), phobia (Huang et al., 2000) and schizophrenia (Roussel and Bachelor, 2000/2001). Beyond this, other published studies have explored alcohol-related cues (Kambouropoulos and Rock, 2009/2010), abdominal breathing (Pekala and Forbes, 1998), eating disorders (Hutchinson-Phillips, Gow and Jamieson, 2007; Vanderlinden et al., 1995), gambling (McCormick and Delfabbro, 2011) and meditation (Löffler, 2007; Venkatesh et al., 1997).

From a wider perspective PCI studies have looked at biodynamic cranial-sacral osteopathy (Nyul, 2009), firewalking (Pekala and Ersek, 1992-1993), discarnate reading (Rock and Beischel, 2008), quantum bioenergetics (Permezel and Rock, 2009), an out-of-the-body experience (Maitz and Pekala, 1990-1991), past-life regression (Woods and Barušs, 2004), religious experience (Wildman and McNamara, 2010) and Tibetan sound bowl induced altered state (Kempen, 2007). In like manner, a number of studies have explored shamanic states (Maurer et al., 1997; Rock et al., 2008a; b; Rock, Baynes and Casey, 2005;
Rock, Casey and Baynes, 2006; Rock and Storm, 2010) and related areas such as monotonous drumming and trance postures (Woodside, Kumar and Pekala, 1997).

It was clear from a review of the PCI literature that the questionnaire had the potential to be applied both to the measurement of altered state of consciousness during charismatic leadership oratory and the comparison of results found during hypnosis. Specifically, the PCI and related PCI-Hypnotic Assessment Protocol have been used in four main ways over the last 30 years. Firstly, scores can be used to calculate a ‘general measure of trance’ which can be obtained from any condition, not just hypnosis. Secondly, the PCI-Hypnotic Assessment Protocol items have been used to clearly establish some of the underlying relationships that exist during hypnosis in terms of self-perception of hypnotic depth, trance state and the experience of internal imagery in direct response to the hypnotic. Thirdly, PCI dimensions are able to explore states of consciousness in a way which operationalises three altered state theories (those of Singer (1977), Izard (1977) and Tart (1972; 1975; 1977)). Finally, cluster analysis has been used to identify hypnotic types and it could be that a similar approach might be able to identify follower types based on structure of consciousness. Therefore, the PCI appeared to have the potential to create an operational bridge between charismatic leadership oratory and hypnosis, and with some small adaptations, apply all four of these approaches to charismatic leadership oratory.

Arguably, the PCI is unique in bridging and resolving some of the consequences of what Nash (2008) referred as the early ‘rush towards laboratory group designs’, whilst maintaining scientific rigour, namely:

1. Hypnosis research is less often conducted by those engaged in active clinical work.
2. Hypnosis research is most often conducted with non-patient undergraduates in psychological laboratories.
3. The unit of analysis in these studies is almost always the aggregate (i.e. nomothetic research) and not the individual (i.e. ideographic research). (Nash, 2008: 201)
Specifically, although some research using PCI has used undergraduates, a large body of evidence comes from other population groups (see example in the trance tables in Appendix B). Moreover, not only has the PCI directly evolved from clinical practice but remains in use, with the ability to be applied at the level of the individual (see Pekala, 2009) as well as the group (paralleling some psychometric assessment related to trait and type).

Because use of the PCI encompasses more than one method, and there is a body of evidence related to each, a detailed description of each of these methods and a review of the relevant literature is to be found at the start of each of the related results chapters (5, 6 and 7). This is done to simplify the presentation of results and help the reader with the interpretation of results for each area. The next chapter (4) discusses the final research design and the rationale behind its development and execution.

3.4 Concluding remarks with regard to the present research

In conclusion, it is striking that the field of hypnosis has long suffered in the popular mind with the over-attribution of power to the hypnotist, paralleling the levels of over-attribution that have taken place at times in the area of charismatic leadership oratory. It was clear that, if an altered-state view of hypnosis were to be adopted, paralleling the work of Pekala and colleagues, it would be possible to measure the effects of a charismatic leadership speech and compare them to what is known about altered state of consciousness during hypnotic induction. Furthermore, it would be possible to compare the effects of oratory to the extensive range of conditions so far assessed using the PCI – a realisation that led to the generation of the trance tables in Appendix B. The next chapter describes the research design and the decisions made in arriving at that design.
Chapter 4 – The research design, a description and critical appraisal

This chapter begins by explaining the research design. This includes an illustration (Figure 4.1) of the way in which the independent variable (charismatic leadership) was defined operationally. From this research design, a Pilot Analytical Study was able to be conducted, together with four main studies of the data yielded by different aspects of the design (Main Study A, Main Study B, Main Study C and Main Study D; covered in Chapters 6 to 9). Each of these studies builds progressively on the last, with the specific areas of the design applied in each of the Main Studies illustrated at the beginning of Chapters 6 to 9 – in Figures 6.1, 7.1, 8.1 and 9.1 respectively.

This chapter then goes on to provide a critical evaluation of the PCI, from the perspective of the context in which the questionnaire was developed, other attempts to assess altered state of consciousness and the questionnaire’s psychometric validity and reliability. Lastly, the current chapter discusses ethical considerations taken into account and provides a justification for the charismatic leadership speech chosen as the experimental condition within the research design.

4.1 The research design used for the Pilot Analytical Study and Main Studies A, B, C and D

4.1.1 Application of the Phenomenology of Consciousness Inventory within the current research

As was noted in Chapter 3, the Phenomenology of Consciousness Inventory (PCI) provides a ‘methodology to operationally define, map and diagram states and altered states of consciousness’ (Pekala, 1985: 207). Over and above this basic capacity, to reiterate, over the past 30 years researchers have used four detailed analytical approaches directly with hypnosis:

- the measurement of trance depth (Pekala and Nagler, 1989; Pekala and Kumar, 1984; 1987; 2000; Pekala and Maurer, 2013)
• the use of PCI-Hypnotic Assessment Protocol measures (before and after condition questions allowing for the exploration of relationships between areas such as trance depth, self-reported depth, expectancy and imagoic suggestibility) (Pekala et al., 2006; 2010a; b; c) and motor suggestibility tests within the protocol

• the mapping of states of consciousness (both intensity and pattern effects) (Pekala, Steinberg and Kumar, 1986; Kumar and Pekala, 1988; 1989; Pekala and Kumar; 2007)

• the identification of types using cluster analysis (Pekala, 1991; Forbes and Pekala, 1996; Pekala and Forbes, 1997).

A detailed description of each of these areas appears at the beginning of Chapters 6, 7, 8 and 9, before the presentation of the results for each of the four Main Studies that focus sequentially on these areas. Drawing on the PCI’s capacities and precedents in the literature (such as the use of the questionnaire to explore areas such as fire-walking and shamanic states (occasionally conducted using recordings of shamanic drumming)), a research design was developed. The observation was made that if the approach focused its attention on the effects of a video-recording of a charismatic leadership speech, it might be feasible to apply an experimental research design to the question of whether there is a relationship between charismatic leadership and hypnosis. After all, as shown in Chapter 2, much of the charismatic literature, and within it the literature that has used the word ‘hypnotic’ (for example, Willner, 1984), has pointed to the apparent importance of oratory within the process.

Applying this thinking, the present research design consisted of a within-subject (repeated measures or cross-over design) design with a ‘world-class’ charismatic leadership speech as the experimental condition and two control conditions (see Figure 4.1). The independent variable (IV) was defined operationally by creating three fully counterbalanced conditions. There was a minimum four-week washout period. IV level 1 was an eyes open sitting quietly condition paralleling one of the two most frequently applied baseline control conditions in prior PCI research (see the trance tables in Appendix B). IV level 2 involved watching archive film from the same date, location and context as
the charismatic leadership speech, chosen to act as a pseudo attention placebo condition. This aimed to control for potential confounding variables associated with watching film and the effects of seeing crowds and protesters travelling to the speech location and assembling before the speech (similar crowd scene images appear as cutaways in the charismatic leadership speech film used in the experimental condition). IV level 3 involved watching a charismatic leadership speech associated with the term ‘hypnotic’ in the literature and which has been defined as ‘world-class’ in prior research. Following the completion of all three conditions, and as part of a final debrief, participants conjointly completed two suggestibility tests from the pre-induction and participant selection phase in stage hypnosis.

**Figure 4.1: Research design deployed in the Pilot Analytical Study and across the four Main Studies**

Dependent variables were Phenomenology of Consciousness Inventory major and minor dimension intensity levels, adapted PCI-Hypnotic Assessment Protocol items, hypnoidal state scores (calculated from 10 major and minor
dimension scores using the predicted Harvard Group Score regression equation) and motor suggestibility test scores.

4.1.2 Rationale for choosing a within-subject design

A within-subject design was chosen because of the advantages of increased power and reduction in error variance associated with individual differences, thus reducing the risk of missing small effect sizes that were present. In the light of the sensitivity of the PCI questionnaire, this was seen as a more important consideration than the risk of order effects, which could be compensated for with counterbalancing, a four-week washout period and post-hoc statistical analysis to see if these had indeed been effective.

As discussed in the introduction, the overall purpose of the research was to explore the frequently hypothesised relationship between charismatic leadership oratory and hypnosis, and examine whether research could identify if there was evidence to support this association. Using film of a charismatic leadership speech within the design, and measuring the effects of this with the PCI, adapted PCI-Hypnotic Assessment Protocol items, and motor suggestibility tests (of a type frequently used during stage hypnosis before a call for volunteers and induction (Chase, 2000; Ronning, 2008; McGill, 1996)), allowed for the deployment of the four PCI analytical methodologies and the refinement of the main research purpose into the four propositions and 14 hypotheses presented in Chapter 1. For clarity, both the propositions and hypotheses are repeated early in the relevant Main Study chapters (Chapters 6 to 9).

4.2 Critical appraisal of the PCI and its attempts to measure altered state of consciousness, together with a discussion of the ontological and epistemological issues arising from this

In the preceding sections, there was an assumption that an experimental approach was the right one to explore the possible relationship between charismatic leadership and hypnosis; and that the use of the PCI and PCI-Hypnotic Assessment Protocol was an appropriate measure to use within such an experiment. This section begins with a critical appraisal of the PCI in the
context of the wider study of altered states of consciousness as it has developed over the last half a century, with a focus on the measurement of altered states and research approaches used. This includes a discussion of the origin of the theoretical position that underpins the questionnaire and how Pekala developed this. We then go on to consider the philosophical implications for the research, with regard to ontological and epistemological issues arising from the use of the PCI in this way.

4.2.1 The PCI in the context of the study of altered states of consciousness

As Kuhn observed (1962), science tends to approach a topic according to the prevailing paradigms of the time. This, as is noted by Beischel, Rock and Krippner (2011) in their 50-year retrospective of the field, is equally true with regard to the study of altered states of consciousness. As they point out:

Experiences of ASC [altered state of consciousness] viewed as pathological by the existing psychological paradigm of the 1940s and ’50s were eventually embraced as normative experiences exemplifying heightened awareness, transpersonal development, and even spiritual transcendence by the turn of the century. (Beischel, Rock and Krippner, 2011: 113)

Beischel, Rock and Krippner (2011) suggest that the study of altered states can be seen as having developed on the following lines. Moving beyond earlier paradigms in which altered states were seen as pathological, the 1960s (particularly with the work of Ludwig (1964; 1969; 1972)) saw a period in which the language of altered states was developed. It was also in the early 1960s that the first assortment of characteristics and features associated with such phenomena began to be delineated. This early period was, however, typified by somewhat loose definition – although there were attempts to operationalise altered states more robustly (such as with the Linton-Langs questionnaire (Linton and Langs, 1964)).

The acceptance of a need for greater clarity and consolidation was driven in the early 1970s by the work of Tart (1972, 1975; 1977) and Krippner (1972), with
arguing for a systematic investigation of altered state of consciousness (1975). Despite this, the majority of studies in the late 1960s and early 1970s still tended to focus on specific areas of altered state rather than on global measurement and the development of instruments with valid and reliable psychometric properties. The area of focus for most studies was also limited, with interests typically centred on drug-induced effects, such as: marijuana (Tart, 1971), psilocybin (Leary, 1970), LSD (lysergic acid diethylamide (Houston, 1968)), drug use and sensory and visual acuity (Moskowitz, Sharma and Shapero, 1972; Moskowitz, Ziedman and Sharma, 1976), and tactile sensitivity (Milstein, MacCannell, Karr and Clark, 1974).

Interest in mystical and shamanic states (which began in the 1970s) developed substantially in the 1980s, although most studies tended to be nonexperimental and anthropologically based. Two notable exceptions were the Altered State of Consciousness Induction Device (ASCID) (Houston and Masters, 1972) and an experimental study of shaman by Saklani (1988). The ASCID consisted of a ‘swing or pendulum’ used to induce religious-type experiences. Interest beyond drug-induced states expanded with the parallel development of a number of cartographical approaches, perhaps the most well known of which is Wilber’s ‘spectrum of consciousness’ (Wilber, 1974; 1975). Grof (1975) and Fisher (1971), as part of a similar narrative, designed cartographies based on studies involving LSD and areas related to shamanic journey, respectively. However, as with many previous attempts to operationalise the effects of state-altering conditions, these maps were qualitative and open to wide interpretation.

The PCI was developed (Pekala, 1985; 1991) in response to the shift in thinking prompted by Tart (1977) and Krippner (1972), and the desire to approach the field with a more empirical and quantitative approach (Pekala, 2013; 2015). For content validity (Rust and Golombok, 1999), Pekala (as we have touched on earlier and will explore in more depth later) looked to the work of Singer (1977), Izard (1977) and Tart (1972; 1975; 1977), whom he saw as exemplifying the three main types of theory related to the nature of altered states (altered states as a shift in intensity, as a mode of bonding between subsystems of consciousness and as a shift in global pattern of consciousness). Other contemporary and parallel attempts to operationalise subjective
experience of consciousness more effectively included the APZ-OAV Questionnaire (Abnormer Psychischer Zustand) (Dittrich, von Arx and Staub, 1985), the Self-Expansiveness Level Form (SELF) (Friedman, 1983) and the Peak Experiences Scale (PES) (Mathes, Zevon, Roter and Joege, 1982). What singles out the PCI as unique among such approaches is the extensive work carried out in order to assess its psychometric validity and reliability, together with its capacity to be applied to a very wide range of conditions. For example, although the validity of the APZ-OAV Questionnaire’s three dimensions (1. Oceanic boundlessness, 2. Dread of ego dissolution and 3. Visionary restructuralisation) is supported by results in the International Study on Altered States of Consciousness (Dittrich, 1998), its more general application beyond abnormal mental states induced by hallucinogens and stimuli such as sensory deprivation (Dittrich, von Arx and Staub, 1985) is hard to achieve.

4.2.2 The PCI’s psychometric properties (construct validity, convergent validity, internal consistency reliability, predictive validity and test-retest reliability)

The steps taken defining the content of the PCI and PCI Hypnotic Assessment Protocol, the development of preceding versions (the (Abbreviated) Dimensions of Consciousness Questionnaire [(A)DAQ] and Phenomenology of Consciousness Questionnaire [PCQ] (Pekala and Wenger, 1983)), and sister questionnaire (the Dimensions of Attention Questionnaire [DAQ]), are detailed in full in Pekala (1991; 2007; 2015). With regard to the psychometric properties of the PCI, there is strong evidence to support its robustness, according to the main areas seen as requiring statistical assessment in order for a questionnaire to claim high levels of validity and reliability (see Kline, 2000).

In terms of the questionnaire’s construct validity (the extent to which the measure reflects the concept that it is intending to measure (Cronbach and Meehl, 1955)), factor analysis of the PCI dimensions in reference to hypnosis has indicated the PCI’s ability to predict state effects for: dissociative control, positive affect and attention (Kumar, Pekala and McCloskey, 1999). Replication of these findings in a number of studies (involving the Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962)) (Angelini, Kumar and Chandler,
1999; Varga et al., 2001; Manmiller, Kumar and Pekala. 2005; Robin, Kumar and Pekala, 2005), has further established both the questionnaire’s construct and convergent validity (Domino and Domino, 2006). Similarly, positive results have been found in replications using the Stanford Hypnotic Susceptibility Scale, Form C (Kumar, Pekala and McCloskey, 1999; Varga et al. 2001) and the Laman-Wexler Indirect Hypnotic-Susceptibility Scale (Robin, Kumar and Pekala, 2005). In all of the cases above, correlations were of a similar magnitude and in the same direction.

Early on, and during the PCI’s primary development phase, in parallel Pekala conducted exploratory factor analysis as an additional means of checking the stability of the PCI dimensions across different stimulus conditions (Pekala, 1991). This involved a principal components factor analysis followed by Varimax rotation, for both an eyes closed sitting quietly condition and for hypnosis. There was then extraction of orthogonal factors with eigenvalues of greater than one. For an eyes closed condition eight factors were extracted, 74% of which continued to load highest on their assigned dimensions. In turn, eight factors were extracted for hypnosis. This time, 84% of the PCI items continued to load highest on assigned dimensions and 19 out of 24 subdimensions had all of their items found in factors (Pekala, 1991; 2007).

Internal consistency reliability (the extent to which items contributing to a single concept correlate with each other (Rust and Golombok, 1999)) has been established using Cronbach’s Alpha (Pekala, 1991) a process that was repeated for the present Main Studies’ data (see Appendix F). In the case of Pekala’s analysis, in response to an eyes open sitting quietly stimulus condition, coefficient alphas ranged from .92 for sexual excitement to a low value of .69 for altered time sense, with an average of .82 for all dimensions. For the present research control condition (also eyes open sitting quietly), the range was from .90 for altered experience to .70 for love with an average of .83.

Predictive validity (assessment of whether a test predicts scores on a related measure or suitable concept (Cronbach and Meehl, 1955)) is also strong. For example, predicted Harvard Group Scores (pHGSs) (generated from 10 of the PCI major and minor dimensions) have been shown to predict scores on the
Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962) with validity coefficients of 0.62 (Pekala and Kumar, 1984), 0.65 (Pekala and Kumar, 1987) and 0.67 (Forbes and Pekala, 1993). In addition, a coefficient of 0.86 (Hand, Pekala and Kumar, 1995) was established when the pHGS scores were compared to scores on the Stanford Hypnotic Susceptibility Scale: Form C (Weitzenhoffer and Hilgard, 1962). Multiple regression has, in turn, established (Pekala et al., 2006), with replication (Pekala, 2010a; b: Pekala and Maurer, 2013), the predictive validity of pHGSs in relation to ideas related to self-reported hypnotic depth (Tart, 1970) and imaginative suggestibility and expectancy (Kirsch, 1999; Kirsch and Brafman, 2001).

Test-retest reliabilities (if the test responses are stable when they are repeated at two different points in time) (see Kline, 2000) have been found to be favourable (Pekala, 1991). First and second baseline tests (eyes open sitting quietly) were all significant at p < 0.05, with correlations ranging from .56 to .34. Likewise, 21 out of 24 were significant when comparing the first based line to a reading erotica condition and 17 out of 24 significant when the second baseline was compared to a relaxation/meditation condition (Pekala, 1991: Table 5.3, page 102).

4.2.3 The PCI’s content validity as interest in the measurement of altered states has shifted to physiological methods

In spite of the statistical robustness of any questionnaire, its more general content validity (Cronbach and Meehl, 1955), by definition, may need revision as subjective expert opinion changes in response to shifting scientific paradigms (Rust and Golombok, 1999). In this way, content validity will always be open to a degree of interpretation, particularly where there are debates regarding the fundamental constructs or domains that are involved (Murphy and Davidshofer, 2005).

Importantly, and as also noted by Beischel, Rock and Krippner (2011), we are again seeing a shift in paradigm with regard to the scientific study of altered states of consciousness. Specifically, neurological changes are now becoming increasingly of interest, with physiological study focusing on such areas as out-of-body experiences (Blanke and Arzy, 2005), meditation and mindfulness (Ott,
Hölzel and Vaitl, 2012); and, as we saw in Chapter 3, hypnosis (Gruzelier, 2005, Oakley, 1999; Oakley and Halligan, 2009). Ostensibly, from such a perspective the PCI’s ontological and epistemological stance (one in which subjective experience is valued but its assessment is carried out using a psychometric approach) could be seen as anarchic. Related to this point is the fact that Pekala and colleagues continue to look for content validity to theories (Singer, 1977; Izard, 1977; Tart, 1972; 1975; 1977) which otherwise (and outside of their work) are rarely cited and which are almost entirely absent from discussions within the cognitive neuroscience literature.

Yet, despite the fact that the PCI doggedly seeks to measure empirically subjective experience of consciousness, it may well be, right now, that the PCI comes strongly into its own. For as powerful as the objective measurement of functional neuroanatomy is, without a clear, reliable and valid way to assess subjective experience (in conjunction with objective function) such approaches will surely flounder – in a similar way to earlier studies, because of an inability to correlate the neurophysiological with the mind and the hard problem of consciousness (Chalmers, 1999; Greenfield, 2001).

The answer, already emerging, and argued for by Pekala (2007; 2015) is surely the use of a pragmatic mixed-methods approach in which ostensibly competing epistemologies may need to come together to recognise the dual challenge of the study of consciousness (the material physical reality of altered brain function versus the subjective experience of altered state). These areas of thinking will be returned to later in this section and in the recommendations for future research at the end of final chapter of this thesis. However, before returning to questions of ontology and epistemology and their implications for the research design, it is worth considering the origins of the theory that underpins the development of the PCI and how Pekala developed it.

**4.2.4 Pekala’s ‘Noetic Theory’ of hypnosis and how he evolved it**

Pekala’s university career began as an undergraduate at Penn State University, commencing his studies as a philosophy major with ‘a special liking for the phenomenological philosophers such as Husserl (1913/1972), Sartre (1943/1953), and Heidegger (1927/1962)’ (Pekala, 2013), philosophers who in
Pekala’s view ‘tried to explicate the nature of subjective, or first person, consciousness’ (Pekala, 2013). However, despite winning the Dotter Award for outstanding philosophy major, Pekala dropped out, reinventing himself (after working with mentally and emotionally disturbed children) as a double major in philosophy and psychology, again at Penn State University. Eventually he qualified as a clinical psychologist, working at one of the largest military hospitals in the United States of America and in private practice. The development of the PCI and PCI-Hypnotic Assessment Protocol resulted in the award of a PhD.

Despite the fact that Pekala has never ‘named’ his theory of hypnosis in overt ways, like other prolific hypnosis researchers (as with, for example, Cold Control Theory (Dienes and Perner, 2007) or Neodissociation theory (Hilgard, 1991a)), Pekala’s theoretical position is clear and frequently espoused (Pekala, 1991; Pekala and Kumar, 2007; Pekala, 2015). In summary, it can be stated as follows:

**Hypnosis (as the state generated by a standardised hypnotic induction) is a change in subjective experience of consciousness sufficiently unusual to be able to be perceived by a person as an altered state of consciousness; and sufficiently strong enough to be measured empirically with regard to changes in intensity and pattern effects**

In adopting his theoretical position, Pekala espouses a theory that is both mainstream and radical at the same time. On one level, it is a mainstream theory in that his definition of hypnosis benchmarks itself with regard to the effects of a hypnotic induction on highly hypnotisables; maintaining a highly conservative view of hypnotic susceptibility (i.e. one grounded in scales such as the Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962)). Alongside this, Pekala is also uncompromising in adopting traditional scientific method, incorporating hypothesis testing and replication in order to validate the development of his psychometric instruments.

On the other hand, Pekala’s theory departs radically from other types of contemporary hypnosis theory, seeing the effects of a hypnotic induction in
terms of subjective experience of conscious and in relation to his aim of ‘quantifying the mind’ (Pekala, 2015). To be clear, where most types of contemporary hypnosis theory (be they state or non-state) can be said to sit either side (or on occasions across) two positions, the neurophysiological or cognitive-behaviour, Pekala offers a third type of theory – that he associates with the term ‘noetic’. As Pekala put it, in a recent paper welcoming the new APA definition of hypnosis as a ‘state of consciousness’ which he chose to title *Hypnosis as a ‘state of consciousness: how quantifying the mind can help us better understand hypnosis’*:

> Just as we have a level of analysis to study the neurophysiology of the brain during hypnosis, and a cognitive-level of analysis to study human cognition and behavioral level of analysis to study human cognition and behaviour, we need a noetic level of analysis (the Greek word for the mind is *nous*) to study those subjective aspects of the brain typically called the mind. (Pekala, 2015: 404)

Bearing in mind the dual nature of Pekala’s academic training, it is perhaps not surprising that his questionnaires reflect not only attempts to synthesise subject experience with objective measurement, but also, with regard to the papers that he has produced over the years, attempts to unify state and non-state views of hypnosis (see Pekala, 2015; 2006; 2010a; b). In more general terms, where most hypnosis theory has tended to emphasise ‘System 1’ processing (from the perspective of dual process accounts of reasoning (Stanovich and West, 2000)) – the automatic and involuntary, Pekala’s theory goes beyond this. Rather, his theory forces an operational bridge between ‘System 2’ processing (the analytical and voluntary) and concepts like susceptibility (concretised in recent neurophysiological research) by requiring research participants to use ‘System 2’ processes to analyse and record effects within their subjective experience of consciousness which arose because of automatic processes within ‘System 1’. Although some might question if (in this way) the subjective can be used to evaluate the objective, for Pekala this is a moot point, but nonetheless one that raises significant ontological and epistemological questions – as we will further explore in the section below.
4.2.5 Ontological and epistemological issues arising from the nature of the PCI

Drawing on Crotty’s (1988) observations that the assumptions made by researchers about human knowledge inevitably shape how research questions are understood, Saunders, Lewis and Thornhill (2012) argue that it is just as important for business school researchers to understand their philosophical position as it for researchers in other disciplines. In relation to ontology, and the nature of reality, they describe two fundamental positions. The first of these, objectivism, ‘portrays the position that things, such as social entities, exist as a meaningful reality external to those social actors concerned with their existence (Crotty, 1998)’ (Saunders, Lewis and Thornhill, 2012: 131). The second, subjectivism, ‘holds that social phenomena are created through the perceptions and consequent action of affected social actors’ (Saunders, Lewis and Thornhill, 2012: 131). With regard to epistemology and the concept of what is held to be acceptable as a form of knowledge, they define three positions. Positivism espouses the viewpoint of the natural scientist in which there is an attempt to establish causal relationship from available data. Interpretivism tends towards a world view in which it is argued that the research area in question is too complex to allow it to be explored through an approach which seeks to establish laws (such as in positivism), often drawing its philosophical position from phenomenology and symbolic interactionism. Thirdly, realism consists of two stances:

Critical realism claims that there are two steps to experiencing the world. Firstly, there is the thing itself and the sensations it conveys. Secondly there is the mental processing that goes on sometime after that sensation meets our senses. Direct realism says the first step is enough. (Saunders, Lewis and Thornhill, 2012: 136)

Some observers may at this point begin to question the relevance of such a discussion, when the PCI, its approaches and use within the literature are so clearly grounded in the traditions and practices of psychometric questionnaire design and experimental research. However, the PCI and its praxis (in its attempt to unify subjective and objective research positions) in many ways
provide a case study of precisely the points made by Saunders, Lewis and Thornhill (2012). For in order to understand the PCI, and the sort of results that are obtained from it, it is essential to first grasp the underlying research philosophy upon which it is founded.

In 2007, Pekala and Kumar summarised the previous 30 years of PCI research in a chapter within Jamieson (2007) entitled: *An empirical-phenomenological approach to quantifying consciousness and states of consciousness: with particular reference to understanding the nature of hypnosis*. That they chose to summarise the approach integrating the terms ‘empirical’, ‘phenomenological’ and ‘quantitative’ within the same breath was not done lightly. Rather, the PCI arose from a desire to unify quantitative psychological methods with the challenge of exploring the nature of the human mind and subjective experience of consciousness. As Pekala wrote in 1991:

> I have always been intrigued by those neuroscientists who said they went into neuroscience to ‘find’ mind or consciousness. Just as a hammer will treat everything as a nail, a scalpel with treat everything as flesh. And in the tradition of Descartes, mind is not flesh! . . . Different levels of analysis must be developed to assess the different aspects of consciousness, be it psychological (Ornstein, 1972), psychobiological (Davidson and Davidson, 1980), or socio-ecological (Feuerstein, 1987; Gebser, 1986) . . . I believe psychology has been successful in understanding human behaviour because it has attempted to *quantify* and *statistically assess* that behaviour . . . just as psychology has tried to quantify human behaviour, it will need to *quantify and statistically assess* human phenomenology. (Pekala, 1991:2-3).

In this way, Pekala and colleagues’ ‘empirical phenomenology’ (1991), operationalised through what Pekala calls *retrospective phenomenological assessment*, aims to make objective the subjective, accepting the validity of people’s interpretations of the effects of the world on their subjective experience of consciousness. At the same time, it seeks to measure this using a positivist approach; from which theories about the nature of conditions (such as hypnosis and altered state of consciousness), can be established. Essentially, what the PCI does is to ask individuals to engage in introspection in
response to an established set of domains of conscious awareness and simultaneously provide a mechanism for the amalgamation of such individual introspection; so that general principles relating to the experience of whole populations and sub-groups can be identified, ultimately through analysis and replication. Furthermore, in this way Pekala’s work challenges the notion that the areas normally confined to interpretivist research investigation can be tackled in a positivist way, but in parallel adopts the world view of the interpretivist – trusting individuals to be able to describe their subjective experience.

Pekala specifically argues that the approaches look back to the early years of experimental psychology and the work of figures such as Wundt (1832/1920) whose laboratory sought to investigate *Erfahrungswissenschaften* (or science of experience), an approach which by definition espoused and celebrated introspection. Thus, although the PCI’s methodology is positivistic, the philosophy behind it (Pekala, 1991; Pekala and Kumar, 2007) challenges rejection of subjective experience (Nisbett and Wilson, 1977), drawing on (as was noted in Chapter 3) the work of those researchers who sought to do the same (Ericsson and Simon, 1980; Lieberman, 1979; Singer and Kolligian, 1987; Smith and Miller, 1978). In like manner, the PCI’s analytical approaches (elaborated on in detail in Chapters 6 to 9) align themselves with the work of Singer (1977), Izard (1977) and Tart (1972; 1975; 1977), all of whom espoused a more balanced view about the value of subjective experience within a positivist epistemology, and equally perceived no contradictions in such an approach. Ultimately, when it comes to the interpretation of findings in the present studies there will therefore always be a caveat: namely that, as was shown in the hypnosis literature review, not all authorities accept an altered state hypothesis and by extension the use of subjective experience as an indicator of hypnotic effect. For such individuals, even strong evidence from a PCI study in this area would be lacking in validity. Despite this, for the present author, the weight of PCI evidence and emerging views about the need to adopt a unified approach to theorising about hypnosis which accepts state and non-state theories simultaneously (as discussed by Kihlstrom, 2008) seemed sufficient to justify proceeding with the approach.
From a more personal perspective, there was (it should be said) no specific preference for the choice of research method and philosophy on beginning the research. Indeed, whatever research philosophy might have been dominant in the present research author’s mind on commencing the research, ultimately, it was as a ‘pragmatist’ (and in response to the review of the hypnosis literature) that the current experimental approach was adopted. Although the term ‘pragmatist’ is usually associated with the adoption of a multiple view, again as Saunders, Lewis and Thornhill note, pragmatism does not necessarily presuppose the use of mixed-method approaches:

Pragmatists recognise that there are many different ways of interpreting the world and undertaking research . . . this does not mean that pragmatists always use multiple methods, rather they use the method or methods that enable credible, well founded, reliable data to be collected that advance the research (Kelemen and Rumens, 2008). Saunders, Lewis and Thornhill, 2012: 130)

Such a position resonates strongly with the present studies’ author, as his previous postgraduate-level research work had been purely qualitative, although he has authored and been involved in a range of research in education that has been both qualitative and quantitative in nature, selecting the approach most suited to the research question at hand (see, for example, Allan et al., 2013; Carey et al., 2011; Churches, 2013; Churches and Dommett, 2016; Churches and Gibbs, 2013; Churches and McBride, 2013; Galab et al., 2013).

Regarding the decisions that led to the adoption of an experimental research design, and one involving the PCI, several pragmatic considerations came to the fore during the literature review. The first of these emerged with a desire to align any findings with the dominant methodological school in the field of hypnosis (experimental quantitative research), in order for the studies to be accepted. A second consideration flowed from the clear experimental gap in the charismatic leadership literature. A third was the challenge of operationalising charismatic leadership once an experimental method was selected.
With respect to the first consideration, with the exception of one still controversial approach (Roderique-Davies, 2009), involving study of language patterns and their applications outside of induction (Bandler and Grinder, 1975a; b; Grinder and Bandler, 1976; 1981; Grinder, Delozier and Bandler, 1997) (unrecorded in the academic literature at the time, but more recently investigated using a mixture of methods (Allan et al., 2013; Kirenskaya et al., 2011; Stipancic et al., 2010; Tosey and Mathison, 2009)), most methodologies deployed to explore hypnosis have been experimental. Furthermore, since the development of hypnotic susceptibility scales nearly all have used one form of randomised controlled trial or another (see Heap, Brown and Oakley, 2004; Nash and Barnier, 2008). More recently, as we saw in Chapter 3, researchers have used a variety of brain scanning techniques (for reviews see Barabasz and Barabasz, 2008; Jamieson, 2007; Oakley, 2008).

In relation to the second pragmatic consideration, several writers have pointed to the lack of experimental research in the area of charismatic leadership and seen this as a weakness. As Bass put it, in 1988:

There is a paucity of empirical research on charisma. Trice and Beyer (1986) were able to list nine sociological and anthropological studies of charisma as of 1977, which they regard as relevant, but House (1977) was unable to unearth any controlled empirical effects to investigate the phenomenon as of 1976. (Bass, 1988: 64)

Conger and Kanungo (1988b) note this gap and go further, suggesting an imperative that such approaches take place:

The nature of charisma and methodological limitations have made the study of charismatic leadership in business difficult. However, the existence of charismatic leadership as an experiential phenomenon in organizations makes scientific investigation imperative. (Conger and Kanungo, 1988: 8)

They further suggest that ‘considerable research efforts must be directed toward operationalizing the concept of charisma and its causes and effects’
(Conger and Kanungo: 1988b: 8). Conger (1988) proposes the following reason for the lack of experimentation:

... researchers have been reluctant to face some of the methodological dilemmas associated with studying this impressionistic form of leadership, with this reluctance able to be traced back to impressions of charisma as a vague and almost mystical phenomenon. (Conger, 1988b: 12).

The present research's literature review suggested that this lack of experimental research has remained largely the case, with the exception of two laboratory experiments by Howell (1985) and Awamleh and Gardner (1999) and the brain imagining study related to charismatic preachers discussed in Chapter 1 (Schjoedt et al., 2010).

Thirdly, although on first thought a laboratory-style research experiment research seemed difficult to control and potentially lacking in mundane realism and ecological validity (Brewer, 2000), there was one clear opportunity for controlled experimentation. The leadership literature has frequently placed importance on oratory and the charismatic leadership speech within the process of influence and has seen oratory as indicative of the way in which charismatic leaders influence followers (see Chapter 2). Therefore, a viable option was the use of film of a charismatic leadership speech as the experimental condition within a laboratory setting, provided the speech was recognised as being charismatic by a sufficient number of writers and in the context of the overarching research question – particularly if such a speech and the speaker were associated with the term 'hypnotic'.

Furthermore, although oratory has long been associated with power, authority and persuasion as far back as ancient Greece and Rome (Copeland, Lamm and McKenna, 1999), the main means by which people have experienced charismatic leadership oratory in the twentieth and early twenty-first centuries has been through the medium of radio, film or in small groups whilst watching television. In this way, despite the fact that, ostensibly, a laboratory-style experiment might appear to lack ecological validity, if it were to use film of a charismatic leadership speech, arguably there would be better levels of mundane realism than would normally be expected from such a research
method. It is, after all, not uncommon for employees to gather at work to view pre-recorded speeches on film by their CEO, something that is certainly the case in the business in which this research took place.

### 4.3 Ethical and practical considerations that led to the adoption of the current three condition design

#### 4.3.1 Ethical considerations

Consideration was given to the question of whether to include hypnosis as a fourth condition. Several factors were taken into account. In the first place, and most substantively, there were ethical issues in the direct use of a hypnotic induction with a large group of participants to explore a gap in the research from within the leadership and management literature, bearing in mind that (despite the frequent references and assumptions in some areas of popular culture) the connection between hypnosis and charismatic leadership oratory is largely theoretical, with little current empirical evidence to support it.

There are no known substantial side effects of the use of the hypnotic induction embedded within the PCI-Hypnotic Assessment Protocol (Pekala, 2009). This said, there is a range of opinion about the potential negative side effects of hypnosis in general (Crawford, Hilgard and McDonald, 1982; Hilgard, 1974; Petersen et al., 1991; Coe and Ryken, 1979; Lynn, Martin and Frauman, 1996; Barber, 1998; Gruzelier, 2000b), as well as discussions that extend into its ethical use in research (Heap and Aravind, 2002). Some authors (e.g. McHovec, 1986) argue that the negative side effects of hypnosis are under-reported. The position has been further clouded by the availability of lay hypnosis training courses (such as the stage hypnosis training attended by the present author during the current research) and the high-profile court case (Gates vs McKenna) involving a well known stage hypnotist (Gruzelier, 2000b; Wagstaff, 2000a; b); see Heap and Aravind (2002) for a discussion of the issues. By extension, a four-condition counterbalanced research design formally involving hypnosis, would introduce high levels of complexity in terms of administration as, ethically, the hypnotic induction would require an individual debrief in order to adequately support any individuals who had a negative reaction to the procedure. Such essentially clinical issues and the extended
time period that a four-condition study would require might increase the risk of participant attrition – a more significant risk in a within-subject design than in a between-subject one.

Secondly, the use of hypnosis was arguably not necessary at this stage because the PCI methodology allowed for the testing of null hypotheses related to ‘hypnotic’ influence, without the actual use of hypnosis as a condition. For example, if charismatic leadership oratory were ‘hypnotic’, trance depths (predicted Harvard Group Scores) associated with hypnosis (pHGS > 7.0) would be detectable, as would a number of other significant shifts in consciousness (such as attenuated volitional control; and amplified altered state of awareness); if charismatic oratory were not ‘hypnotic’, this would not be the case. These areas and other ‘benchmarks’ of hypnotic influence and altered states of consciousness are discussed in more depth in Chapters 6 to 9.

Thirdly, Pekala and Forbes supplied the intercorrelation matrices for a large group during hypnosis generated from the PCI scores in the peer-reviewed study by Pekala and Forbes (1988). This allowed for direct testing of the experimental condition in the present research with this intercorrelation matrix and the testing of whether, for a whole participant group, charismatic leadership oratory represents the same altered state of conscious as hypnosis – according to the method deployed by Pekala and colleagues to operationalise Tart’s theorising (Tart, 1972; 1975; 1977; Pekala, 1991; Pekala and Kumar, 2007). Although patterns of consciousness during hypnosis for sub-groups, based on hypnotic susceptibility, have been reported in the literature, no whole group results have previously been published in the form of a psygram (the means used to diagram patterns of consciousness during PCI research (Pekala, 1991; Pekala and Kumar, 2007)). See Chapter 8 for a discussion on psygram construction.

Fourthly, although the design could have consisted of a control condition, hypnosis and charismatic leadership (an alternative three-condition design), because of the nature of the experimental condition, having a pseudo attention placebo condition that allowed for the control of effects associated with watching film and crowd scenes from the context seemed more prudent for two
reasons. Specifically, the PCI literature is clear about the extent to which PCI results can be affected by focused attention (Pekala, 1991) and the leadership literature is equally strong in emphasising the role of context and motivation in leadership (Bass, 1990a; Northouse, 2004); therefore without such an active control any results could easily have been confounded by such influences.

4.3.2 Application of, and adherence to, the University of Surrey Ethical Guidelines for Teaching and Research

The present studies’ author stringently maintained and adhered to University of Surrey ethical guidelines throughout both the Pilot Analytical Study and the Main Studies phases (University of Surrey, 2009). The PCI is a clinical instrument as well as being a research tool and therefore close and careful consideration was given to obtaining clear informed consent and allowing individuals to withdraw from the research at any time. In addition, following the final motor suggestibility test session (see below) participants were given the opportunity to participate in group debrief and individual debrief sessions, with the opportunity to receive feedback on their results should they wish to.

In connection with this opportunity, although there were some exceptions, in most of the research session groups (for all conditions) some people chose to stay behind to discuss their experiences and one person requested detailed feedback on their structure of consciousness at the end of the research. On one occasion, one participant had a strong affective response to the speech and required support following the speech condition as a result of becoming tearful and highly emotional. This was (incidentally) one of the participants later found to have attained a high hypnoidal state during the speech and be part of the follower Type V sub-group (identified during cluster analysis). For a discussions of this follower group’s characteristics and similarity of response to hypnotic virtuosos during deep trance (Cardeña, 2005), see Chapter 9.
4.4 Analytical issues and PCI-Hypnotic Assessment Protocol item adaptations

4.4.1 Establishing what levels of trance relate to what types of conditions through the systematic review of the PCI literature and adapting the PCI-Hypnotic Assessment Protocol for use with oratory

Two analytic problems required resolution in advance of carrying out the research. Regarding the first of the areas discussed above (the measurement of trance depth), Pekala and colleagues have shown that a combination of 10 PCI major and minor intensity scores can predict Harvard Group Scale of hypnotic susceptibility scores (Pekala and Nagler, 1989; Pekala and Kumar, 1984; 1987; 2000; Pekala and Maurer, 2013). They refer to this measure as a ‘predicted Harvard Group’ or ‘hypnoidal state’ score, which they suggest is analogous to a ‘general measure of trance’. However, with a small number of exceptions, researchers have generally reported hypnoidal state scores mostly in relation to only hypnosis and a small number of comparison conditions, with no general compilation of results from across PCI studies.

To facilitate later analysis and comparison of the trance depth attained during charismatic leadership oratory to hypnosis and a wide range of other conditions, all published PCI studies were scrutinised, and reported hypnoidal state scores for whole groups and sub-groups were combined into a single table. Together with this, it was possible to calculate depth of trance for those studies that had reported all PCI major and minor dimensions. This analysis yielded the results presented in the trance tables in Appendix B, to which for the purpose of this thesis have been added results from the present research. This table allowed for the comparison of present results with hypnoidal state scores from a wide range of studies involving 7,257 participants. The scale of coverage further enabled the calculation of usable Sten scores ranges for the reported results, mapping which appears to support Pekala and colleagues’ contention that predicted Harvard Group or hypnoidal state scores may well represent a general measure of trance. These tables are discussed in more detail later.
A further issue arose in connection with the use of PCI-Hypnotic Assessment Protocol items (Pekala, Kumar and Maurer, 2005) which clearly needed adaptation (for example, replacing the word ‘hypnotised’ with ‘influenced’). Pekala gave permission for this, so that they could become suitable for use before and after a charismatic leadership speech (see Appendix D). Finally, the author sourced an alternative to the motor suggestibility test embedded within the protocol.

Drawing on the parallels between the effects of oratory and stage hypnosis in the literature (as in Estabrooks, 1943/1957) a stage hypnosis training course was attended as a participant observer (as outlined in Chapter 1). Following this, two tests documented in a book by the particular hypnotist who delivered the training (Chase, 2000; 2006) were selected and a scale for measuring the effects designed. In order to avoid influencing participants unduly the decision was taken that the suggestibility tests should not be conducted until after the completion of the three main counterbalanced conditions.

4.5 Identification of a suitable charismatic leadership speech

4.5.1 Use of the literature to identify a suitable speech

Review of the literature and of available archive film suggested that the most suitable speech for use in an experimental design might be Martin Luther King’s 1963 Lincoln Memorial Address (a speech often referred to as the ‘I have a dream’ speech because of its iconic use of this phrase). Desk research indicated four strong reasons for using the speech, discussed in more detail below:

- there are frequent references to Martin Luther King in the academic literature as a charismatic leader and in popular culture he is one of the leaders referred to as ‘hypnotic’
- the particular speech was rated the highest in a list of 100 ‘top’ speeches during an academic survey (Lucas and Medhurst, 1999)
- the Lincoln Memorial Address has itself been described as ‘hypnotic’
- the availability of the speech and the nature and availability of archive film of crowds assembling at the location for use within an active control/pseudo attention control condition.

These factors are discussed in more detail below.

Martin Luther King is regularly identified in the literature as a charismatic leader by a wide range of authors (e.g. Bass, Avolio and Goodheim, 1987; Carson, 1987; Emrich et al., 2001; Huggins, 1987; Mio et al., 2005; O’Connor et al., 1995; Paul et al., 2006; Popper, 2000; 2004). In terms of transformational leadership factors, he emerged in the top five political leaders for the charismatic factor, in retrospective research using the Multifactor Leadership Questionnaire by Bass, Avolio and Goodheim (1987). Bass, Avolio and Goodheim (1987) included industrial leaders as well as political leaders and Martin Luther King’s rating in the charismatic leadership factor was higher than all the business leaders who were included in the research. The top 10 industrial leaders in the charismatic factor were: Thomas J. Watson Sr. (IBM), George F. Johnson (Endicott-Johnson), Alfred P. Sloan (General Motors), Edwin Land (Polaroid), Louis B. Mayer (MGM), Andrew Carnegie (Carnegie Steel Company), Elizabeth Arden (Elizabeth Arden), Lee Iacocca (Chrysler), Malcolm Forbes (Forbes magazine) and Alexis I. du Pont (E.I. du Pont de Nemours).

With regard to the speech itself, in 1999 Professors Stephen E. Lucas (University of Wisconsin-Madison) and Martin J. Medhurst (Baylor University, Texas) asked 137 leading scholars to recommend American speeches according to the criteria of political and social impact and ‘rhetorical artistry’ (Lucas and Medhurst, 1999). 100 top speeches were identified by the academics and Martin Luther King’s *I have a dream* speech was shown to be the most highly rated speech of all. Second came John F. Kennedy’s 1961 inaugural address, followed by Franklin D. Roosevelt’s 1933 speech and declaration of war on 8 December 1941. The remaining speeches in the top 10 include: Barbara Jordan’s 1976 Democratic National Convention speech, Richard Nixon’s *Checkers* speech (1952), Malcolm X’s *The Ballot of the Bullet*, 1964, Ronald Reagan’s eulogy following the death of the Challenger astronauts.
in 1986, John F. Kennedy’s 1960 speech to the Houston Ministerial Association
and Lyndon Johnson’s We shall overcome (1965).

Martin Luther King’s 1963 speech has itself been the subject of a number of
journal articles and books (Lischer, 1997; 1999; Miller, 1992; Reed, 1999) and
is associated with the term ‘hypnotic’ (Lischer, 1997; 1999; Read, 1999).

Typically:

Each phrase ascends by degrees to the peak of the accented word, which
the speaker does not only stress but plays or bends in a tonal curve. With
sufficient repetitions, King achieves a hypnotic power that is his to sustain
or break. (Lischer, 1997: 56)

Repetition was, of course, an essential ingredient in the King sound. With it
he established a near-hypnotic rhythm by which he induced pleasure in the
audience, won its assent, and, ideally, energized it for action in the
community or nation. (Lischer, 1997: 62)

Once introduced, the dream motive becomes a ringing symbol of King’s
connection to a brighter coming day in race relations. The drama, power
and hypnotic quality of the phrase cannot be realized on the printed page.
(Reed, 1999: 153)

Thus, not only was this speech appropriate from the perspective of being
identified as a ‘world-class’ charismatic speech by a ‘world-class’ charismatic
leader, it has already been associated with the term ‘hypnotic’. On top of this,
the desk research identified that there was an archive film version of the
speech available (broadcast in cinemas and prepared for use in a newsreel
format); with parallel archive film of crowds travelling to and congregating at the
speech location that the research could use as a ‘pseudo attention placebo’
condition.

4.5.2 The historical context behind the speech that was eventually chosen

In 1957 Martin Luther King, together with Ralph Abernathy and a number of
civil rights activists, established the Southern Christian Leadership Conference.
This organisation aimed to draw together the moral authority and potential of
black churches and congregations to carry out non-violent protest. The Conference consisted of a number of organisations and well-known civil rights leaders, known as the Big Six. These leaders were: A. Philip Randolph (Brotherhood of Sleeping Car Porters), James L. Farmer, Jr. (Congress of Racial Equality), John Lewis (Student Nonviolent Coordinating Committee), Roy Wilkins (National Association for the Advancement of Colored People) and Whitney Young (National Urban League).

In 1963 the Conference was instrumental in organising the so-called March on Washington for Jobs and Freedom. King’s position at the time was controversial as he was one of the civil rights leaders who had accepted President John F. Kennedy’s request to amend the focus of the protest. Initially Kennedy stood in opposition to the march taking place. He was concerned about the potential negative impact that it might have on the passage of civil rights legislation on Capitol Hill. Members of the Conference were firm in their desire to proceed, however, and pressed their case. In the first instance the march was intended to highlight the desperate conditions of African-Americans in the southern states and to provide a public platform for the expression of grievances and concerns. Ultimately, the Conference, largely influenced by King, acceded to pressure from Kennedy and the march took on a far less controversial tone – a position that was criticised strongly by other black leaders. Malcolm X, for example, described the march as ‘the farce of Washington’ and members of his own organisation (the Nation of Islam) were not allowed to participate. It was during this march, in front of the Lincoln Memorial, that King delivered his I have a dream speech to more than 250,000 people.

The next chapter describes the method used in detail and presents the pilot results, which indicated the design could be effective in identifying significant changes in the phenomenology of consciousness related to the research questions.
Chapter 5 – Methods used for the Pilot Analytical Study and Main Studies A, B, C and D

The structure of the thesis from this point on is as follows. This chapter is organised into two sections:

- **SECTION 1 – Methods**
- **SECTION 2 – Pilot Analytical Study results \( n = 24 \) and their implications for the Main Study analyses in Chapters 6, 7, 8 and 9

Section 1 describes the precise method used in the research, beginning with assessments made to establish the necessary sample size for the Main Studies. It then goes on to discuss participant selection and the processes of random sampling, informed consent and random allocation to condition order. As is the convention in experimental research reporting, an outline of the materials and procedure used is then given. However, it was felt that this chapter should include the Pilot Analytical Study results from the first 24 participants because the purpose of the pilot was to assess the proposed research design and use of the PCI within it, rather than to establish findings as such. These results (found in Section 2) indicated that the PCI and related adapted PCI-Hypnotic Assessment Protocol items appeared to offer a means of assessing differences between the experimental condition and the two control conditions within the research design; and that therefore the research design should proceed as planned and discussed in Chapter 4.

Detailed explanations of the analytical and methodological basis underpinning each of the propositions appear the start of the four Main Study results chapters (Chapters 6 to 9). Each of these chapters covers one of the four propositions and therefore one of the analytical approaches associated with the PCI, as reflected in the chapter titles:

- Chapter 6 – Main Study A: Trance depth during charismatic leadership oratory
• Chapter 7 – Main Study B: Relationships between trance depth during oratory and adapted PCI-Hypnotic Assessment Protocol items

• Chapter 8 – Main Study C: The structure of consciousness during charismatic leadership oratory

• Chapter 9 – Main Study D: Follower types and their phenomenology of consciousness during charismatic leadership oratory

Each chapter begins with a review of the evidence from prior hypnosis research that has used the respective approach.

SECTION 1 – Methods

5.1 Participants

5.1.1 Sample size

There has been a growing recognition of the importance of prospective (a priori) power calculations to determine sample size prior to the conducting of experimental research (Lenth, 2001) with recommendations that such assessments should look for power levels of at least 0.8 (or 80% power) (Hair et al., 2006). A priori statistical power analysis enables the determination of an experiment’s ability to detect an effect size with a sufficient level of statistical significance. As such, it is arguably the primary means of avoiding a Type II error. It is also true that over-sampling can be an issue, particularly in studies where variables may be highly sensitive to an effect. As Thomas and Juanes (1996) note with reference to biological studies, if the sample size is high enough then all hypotheses are likely to be significant, irrespective of the biological importance of the actual result. Similar points have been well made in respect of clinical trials (see Bhardwaj et al., 2004) and the contemporary management literature (Cashen and Geiger, 2004). This was a concern in the present research since the PCI has shown itself to be a precise instrument able to distinguish, with consistency, shifts in the structure of consciousness between conditions such as sitting with eyes closed quietly compared to sitting quietly with eyes open (Pekala, 1991), even with relatively small sample sizes.

In the case of the present investigation, a priori power analysis in the same fashion enabled the selection of a sample size which was high enough to detect
meaningful effects on some PCI variables without being so high that the majority of variables ended up statistically significant, which would have made interpretation difficult. Despite this, such forms of power analysis are not an exact science, as they require the selection of a predicted effect size for use in the calculation. In the case of the analyses below, predicted effect sizes were based on estimates by the author from reading the existing PCI literature. Ahead of recruiting participants for the research, a priori power analyses using G*Power 3.1.2 (Faul et al., 2007; 2009) were carried out to calculate an optimum sample size. A number of different ways to assess power were possible within the present investigation. Because the question of whether charismatic leadership oratory deepens trance (as assessed by predicted Harvard Group Score) was central to the research purpose of exploring whether there is a relationship between the effects of charismatic leadership oratory and hypnosis, a priori power analysis benchmarked itself primarily in relation to this question. This analysis indicated that a sample size of 95 would give 95% power to detect an effect size of $f = 0.29$ (G*Power ‘as in SPSS option’), the equivalent of 0.40 (Cohen, 1988) ($\alpha = 0.05$), with planned comparisons requiring a sample size of 84, to achieve $d_z = 0.4$ with the same power. Two other issues needed consideration. First of all, prior PCI research has shown a small percentage of participant data is likely to need removal, because of Reliability Index (RI) scores greater than 2.00 (usually approximately 10%); secondly, there was the need to randomly allocate to six condition orders to control for order effects. A final sample of between 120 and 150 seemed prudent, therefore, depending on the response to participate. The PCI Excel scoring spreadsheet calculates RI scores automatically, giving a measure of intra-individual reliability (see discussion below). Assuming the removal of 10% because of failure to meet intra-individual reliability thresholds (studies have reported the need to remove between 9% (Kumar, Pekala and Cummings, 1996) and 19% of participants (Terhune and Cardeña, 2010b)), this would allow for group sizes in each condition order of 20–25. High levels of participant attrition were unlikely because of the decision to source all participants from current employees in one organisation, and the fact that the
organisation had given permission for the research to take place within the working day over a number of weeks.

In like manner, and for completeness, power analyses took place for the main effects related to the second and third areas of investigation (change in the structure of consciousness) and to explore the relationship between self-reported depth, imagoic suggestibility and hypnoidal state. For the first areas (assuming a correlation among the 12 PCI major dimension repeated measures of $r = .25$), using MANOVA repeated measure, within-factors, 30 participants would yield 95% power to detect an effect size of $f = 0.29$ ($\alpha = 0.05$). For the 14 minor dimensions the required sample size was unchanged. Power analysis for the proposed assessments that would explore adapted PCI-Hypnotic Assessment Protocol items (specifically relationships between self-reported depth, imagoic suggestibility and hypnoidal state) indicated that to detect the smallest of effects found by Pekala and colleagues (1996) ($r = .45$ between trance depth and imagoic suggestibility) a sample of 61 would give 95% power to detect an effect size $r = .44$ ($\alpha = 0.05$).

5.1.2 Participant selection and randomisation (random sampling and random allocation to conditions order)

Random sampling of 50% of full-time employee email addresses within a single organisation (an education charity) took place using the RAND function in Excel. The sample ($n = 348$) then received an email invitation to participate in the research (Appendix G). Participation in the research was voluntary. In total 132 agreed to take part. Random allocation then took place to six condition orders to ensure full Latin square counterbalancing. The first eight participants in three condition orders ($n = 24$) then completed the research design as a pilot. The results from the Pilot Analytical Study suggested no need to alter the design (see below) and the research continued, with these results included in the analysis. Between the Pilot Analytical Study and Main Studies, 14 participants dropped out (mostly because of re-organisation within the company and the time that passed between Pilot Analytical and Main Studies). The original email sample was then contacted again, a further 35 participants expressed interest in the research and from these a further re-sampling and
allocation of 14 participants took place to return the participant group to 132 (22 participants in each condition order). In order to reduce the risk of participant attrition, an email informed participants of their condition order allocation. This included a link that allowed them to opt (using an electronic meeting choice system) for a wide range of dates on which they could complete the conditions, provided they did this in the right order and with a four-week washout period. Structuring the delivery in this way ensured that there were a number of occasions when participants could ‘catch up’ on a missing condition (due to extraneous circumstances), yet still preserve their allocated condition order. Because the research design was within-subject (repeated measures) it was not necessary to stratify the sample during random allocation or match pairs of participants.

5.1.3 The participating organisation from which the sample was drawn

Initially, a number of organisations were approached to help with the provision of participants. For practicality and because of the complications involved in implementing a three-condition within-subject (repeated-measures) design with six counterbalanced condition orders, it was decided to acquire permission from the author’s employer to conduct the research at CfBT Education Trust’s head offices. CfBT Education Trust (recently rebranded as Education Development Trust) is a top UK-based charity which operates globally with offices across the world. Although the organisation has a board of trustees who support and advise on policy and research its governance is technically that of a company limited by guarantee. In 2012/2013 the company had a turnover of £131 million, expenditure of £125 million globally and for income generation was ranked 36th out of 3,000 UK charities by Caritas Data (Caritas Data, 2013). CfBT Education Trust described itself in a publication produced to celebrate its fortieth year of trading, as follows:

. . . a private sector, not-for-profit education services company; that it is now one of the largest charities in Britain with a turnover of £140 million; that it delivers contracts on behalf of governments and aid agencies in more than twenty countries across the world, with offices in Abu Dhabi, Nairobi, Hyderabad, Tripoli, Muscat, Malaysia, Singapore and Brunei; that there are
no shareholders, but a board of trustees, who every year distribute about £1 million to fund a programme of research and development in education around the globe. (CfBT Education Trust, 2008: 6)

The present author has been a senior manager, Principal Consultant and Adviser within the company since 2003. Although the organisation is a charity, it has a number of staff who are carrying out management, human resource development, IT and finance roles that are essentially the same in nature as would be found in the profit-making commercial sector and who are non-client facing. The present research sample was broadly representative of the company's permanently employed population.

5.1.4 Participant data

The average age of participants whose results were RI < 2.0 was 43.93 (SD = 11.67, Skew = -0.04, Range = 22–74), 38 were male and 98 female (see Table 5.1) reflecting approximately the gender balance in the organisation’s head offices which participated in the research (31.4% male and 68.8% female).

A breakdown of the participants by organisational role and ethnicity is shown in Appendix H. For the pilot group, the average age was 46.22 (SD = 13.01, Skew = -0.24, Range = 27–68), with 11 males and 13 females. Participants were treated in accordance with University of Surrey ethical guidelines and all completed a consent form.

Table 5.1: Participants with RI < 2.0 whose results were therefore included in the main analysis

<table>
<thead>
<tr>
<th>Total</th>
<th>%</th>
<th>Mean age</th>
<th>Standard deviation</th>
<th>Range Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>38</td>
<td>44.9</td>
<td>11.9</td>
<td>25</td>
<td>68</td>
<td>-.101</td>
</tr>
<tr>
<td>Females</td>
<td>83</td>
<td>43.5</td>
<td>11.6</td>
<td>22</td>
<td>74</td>
<td>-.026</td>
</tr>
<tr>
<td>All</td>
<td>121</td>
<td>43.9</td>
<td>11.7</td>
<td>22</td>
<td>74</td>
<td>-.046</td>
</tr>
</tbody>
</table>

5.2 Materials and apparatus

In advance of participant sampling and allocation, Dr Ronald Pekala (Coatesville Veterans Administration Medical Center, Coatesville, Pennsylvania)
gave permission for the use of both the PCI within the research design and the PCI-Hypnotic Assessment Protocol. This included permission to adapt some of the PCI-Hypnotic Assessment Protocol items for use before and after the speech condition, paralleling their use in pre- and post-hypnotic induction. A single pencil-and-paper questionnaire booklet containing all the research questionnaires was given to participants at the start of each research session and then collected in at the end of each session. The participant booklet contained the following questionnaires:

- pre-research questionnaire including the collection of biometric data (e.g. age, gender, job title etc)
- three copies of the PCI (Form 1) for completion after each condition
- adapted PCI-Hypnotic Assessment Protocol pre-condition questions for use immediately before watching the charismatic leadership speech (see Appendix D for adaptations)
- adapted PCI-Hypnotic Assessment Protocol post-condition questions for use after watching the charismatic leadership speech in conjunction with one of the PCI questionnaires above (see Appendix D for adaptations)
- stage hypnosis suggestibility tests questionnaire for completion after experiencing all three conditions (discussed in detail in Chapter 11).

5.2.1 The Phenomenology of Consciousness Inventory (PCI)

The PCI is a 53-item self-report questionnaire and has 30 years of robust research behind it (Pekala and Kumar, 2007). The PCI is a third-generation instrument that was developed from the 37-item (Abbreviated) Dimensions of Consciousness Questionnaire ((A)DAQ) (Pekala and Wenger, 1983). The (A)DAQ was in turn a development of an earlier questionnaire, the Phenomenology of Consciousness Questionnaire (PCQ); see Pekala (1991) for a discussion. The main modification to the (A)DAQ involved the inclusion of Plutchik’s primary emotions (Plutchik, 1980), namely: anger, fear, sadness, and joy (which were included within the two PCI major dimensions of positive affect and negative affect).
As already discussed in Chapter 4, Pekala, Steinberg and Kumar (1986) report alpha coefficients between .70 and .90 for all of the PCI major and minor dimensions, which suggests that the PCI has good levels of internal reliability. Pekala (1991) further assessed the internal reliability of the PCI for a number of conditions. Coefficient alphas for the PCI during eyes open sitting quietly ranged from .69 for altered time sense through to .92 for sexual excitement with an average of .82 for all the 14 PCI minor dimensions and .82 for the 12 minor dimensions. In terms of the questionnaire’s criterion validity, they found that participant exposure to a range of different stimulus conditions generated significantly different scores, supporting Pekala and colleagues’ contention that the PCI is fully able to detect qualitatively different states of consciousness (Pekala, Steinberg and Kumar, 1986).

Because prior research has already established the internal reliability of the PCI, as usual with established psychometric questionnaires (Kline, 1986) it has been standard practice within the PCI literature not to repeat assessments of internal reliability within the literature, but rather to quote the evidence above. For completeness, however, although not calculated for the Pilot Analytical Study, an internal reliability consistency analysis took place for the Main Studies' PCI results, using SPSS Cronbach’s Alpha. These are included in the tables in Appendix F, alongside evidence for three conditions reported in Pekala (1991) (eyes open sitting quietly, eyes closed sitting quietly and hypnosis). Coefficient alphas in the present research for the eyes open sitting quietly condition ranged from .70 for love through to .91 for positive affect. In response to the pseudo attention placebo condition (archive film), internal reliability ranged from .69 for fear through to .93 for love. For charismatic oratory, this was .70 for memory through to .94 for internal dialogue. Major dimension average coefficient alphas for the three conditions were .83, .78 and .81 respectively. For the minor dimensions, these were .80, .82 and .85.

To facilitate scoring by both the clinician and the researcher, Pekala and colleagues built an Excel Scoring Spreadsheet (Pekala, Maurer and Ott, 2009) (see Appendix I) which calculates mean scores for all PCI major dimensions (reversing item scores where necessary). In a similar way the spreadsheet automatically generates a hypnoidal state score for an individual participant for
the condition experienced (see Chapter 6 for a detailed discussion of the use of hypnoidal state scores as a general measure of trance).

As noted above, the PCI Excel Scoring Spreadsheet furthermore provides a means of assessing intra-individual reliability (Pekala, 1991: 128) through the generation of a Reliability Index (RI). This enables the researcher to identify and remove participants who have contrary patterns of responding; for example, in instances where the questionnaire may have been completed casually, with misconceptions regarding the instructions, or with mischievous intent. The RI score is made up of five pairs of items contributing to the major and minor dimensions of: sexual excitement, direction of attention, amount of imagery, altered state of awareness and internal dialogue. Initially, Pekala (1991) defined marginal reliability as > 2.0. However, because an average responding score would be 2.29 (see Pekala, 2010 for a discussion) the Excel scoring programme (Pekala, Maurer and Ott, 2009) gives three reliability criterion levels:

RI scores of 2.00 or less are considered reliable; RI scores between 2.01 and 2.29 are marginally reliable; [and] RI scores of 2.30 or greater are unreliable. (Pekala, Kumar and Maurer, 2005: 22)

Concerning the concepts measured by the PCI, these are as follows. *Altered state of awareness* assesses the extent to which a person is experiencing a very unusual state of awareness or one which is not different to their usual experience. *Altered experience* consists of four subdimensions: altered body image (the extent to which bodily feelings are experienced as expanded into the world around them); altered perception (changes in perception related to colour, shape, size and perspective); altered time sense (the extent to which perceptions of time have been altered: speeded up/slowed down); and unusual meanings (the extent to which experiences might be called religious, spiritual, transcendent etc. or participants might experience a sense of awe). *Arousal* makes an assessment of muscle tension (very tense and tight to not tense and tight). *Attention* consists of two subdimensions: direction of attention (which assesses whether a subject’s attention is directed towards the external environment or towards internal subjective experience) and absorption, which
assesses the extent to which a participant is continually distracted by external stimuli, or absorbed in their own world. Internal dialogue provides a measure of the extent to which a person is engaging in silent self-talk, or not. Memory measures a participant’s perception of whether they were able to remember everything they experienced. Negative affect has three subdimensions: anger (being enraged/very angry/upset); sadness (feelings of being very sad/unhappy) and fear (feeling afraid/very frightened/scared). Positive affect has three subdimensions that contribute to this dimension: joy (extreme happiness/ecstasy), sexual excitement (intensity of sexual feelings) and love. Rationality assesses clarity of thinking, how distinct an individual’s thinking is, whether they found comprehension easy and whether they experienced confusion or difficulty in understanding. Self-awareness provides an assessment of how aware of self a person is and if there is any loss of consciousness of self, or loss of an awareness of self. Visual imagery has two subdimensions that relate to an assessment of the amount of visual imagery and the vividness of the imagery (clarity, three-dimensionality, vividness compared to the reality). Volitional control looks at the extent to which a person’s experience was one of complete control (or will) over what they were paying attention to, whether they felt passive and receptive or had thoughts and ideas come to mind without any sense of control. See Appendix C for a full description of PCI items as a function of PCI major and minor dimensions. With reference to reporting conventions, different researchers have reported the PCI major and minor dimensions results in various orders. For consistency, in the present investigation, dimension results follow the clockwise order that the major dimensions appear within the standard PCI psygram (Pekala, 1991; 2007) (see Chapter 8 for a discussion of psygram construction). In relation to the PCI questionnaire, participants assess their subjective experience on a seven-point Likert scale (Pekala, Wenger and Levine, 1985). The PCI-Hypnotic Assessment protocol uses a range of different scales.

5.2.2 Stage hypnosis suggestibility tests questionnaire

As is noted above, the PCI-Hypnotic Assessment Protocol (sometimes referred to as the PCI-HAP within the literature) additionally includes an assessment of two classic suggestion effects: eye catalepsy and an involuntary finger
movement. It was not possible to embed such assessments within the charismatic leadership speech; however, a separate assessment of similar forms of suggestibility was carried out before the final research debrief. This involved the use of two suggestibility tests from stage hypnosis that are frequently used before a hypnotic induction as part of the audience selection process, before a call for volunteers, and the use of a hypnotic induction and deepening procedure (Chase, 2000). These consisted of a) the suggestion that their index fingers would move together of their own volition (eyes open); and b) the suggestion that a balloon had been tied to one hand and was floating upwards and that their other hand (clenched and turned upward) had become an iron ball and was becoming heavier and heavier (eyes closed). Participants scored responses on 7-point Likert scales after completion of each test. Ahead of analysis, amalgamation of the items took place to provide a quasi-interval measure.

5.2.3 Final debrief questionnaire

This questionnaire included a range of questions about the participant’s experience and the opportunity for participants to describe their experiences in a free text box should they wish to.

5.3 Procedures

5.3.1 Room layout

All conditions used the same room layout (Figure 5.1) for all condition orders; however, participants stood for the two motor susceptibility tests, in order to make it easier to do the second test. Blinds were drawn to ensure clear visibility of the films and the room was maintained at a comfortable temperature. Films were projected onto a screen with dimensions 130 x 90 cm. The room layout was U-shaped and participants were sitting at tables with their research booklet handed out in advance to allow for ease of access immediately after each experience.

5.3.2 Instructions given to participants and the three conditions

On the first occasion that participants attended, they were required to read a plain language statement explaining the general nature and requirements of the
research. They were then required to sign a consent form that complied with the University of Surrey School of Management ethical requirements and codes of practice (University of Surrey, 2009). These ethical requirements were maintain rigorously throughout the research process. Participants, in conjunction, completed the pre-research questionnaire at this stage in the procedure. This included biometric data questions and a question about how familiar they were with the speech that was to be part of the research.

**Figure 5.1: Room layout**

![Room layout diagram]

Alongside this, before beginning each condition, participants were required to read the standard Phenomenology of Consciousness Inventory (Form 1) Instructions. Within the conditions, participant activity was as follows (see Figure 4.1, Chapter 4 for research design diagram):

1. **Baseline control condition (eyes open sitting quietly)**
   
   Participants sat quietly for 4 minutes with their eyes open. At the end of this period, they completed the PCI questionnaire with reference to the previous 2–4 minutes.

2. **Pseudo attention placebo condition (archive film from the same day and context as the charismatic leadership speech)**
Participants watched archive film consisting of crowds travelling to the Lincoln Memorial on trains and coaches and assembling at the Lincoln Memorial just before the commencement of Martin Luther King’s speech. The film extracts in total lasted for approximately the same length as Martin Luther King’s speech (13 minutes and 30 seconds). At the end of the film, participants completed the PCI questionnaire in reference to the previous 2–4 minutes only.

3. Experimental condition (charismatic leadership oratory)

Participants first completed a precondition questionnaire that contained adapted items from the PCI-Hypnotic Assessment Protocol pre-assessment questionnaire. The items associated with the pre-hypnosis combined expectancy, pre-hypnosis visual imagery and pre-hypnosis kinaesthetic imagery were adapted to produce scores for pre-speech combined expectancy, visual imagery and kinaesthetic imagery. Participants then watched a film of Martin Luther King delivering the speech. The speech lasted 13 minutes and 40 seconds in total. At the end of the film, they completed the PCI in reference to the previous 2–4 minutes only. Finally, they completed the adapted PCI-Hypnotic Assessment Protocol post-assessment questionnaire.

5.3.3 A note on the different lengths of the three conditions in the present research design

It should be noted that it is considered acceptable, in the PCI literature, for experimental conditions and active control conditions to last for different time periods and longer than the standard baseline control conditions (eyes closed sitting quietly/eyes open sitting quietly) within a single PCI study (Pekala, 1991), the proviso being that there is a specific identifiable (and standard) episode within the condition that the participants can reliably reference when completing the PCI. Typically, this is the last 2–4 minutes of an experience, but it can be a specific 2–4 minute episode embedded within a condition period, such as sitting quietly within the Harvard induction (see, for examples, Pekala, 1991; Kumar, Pekala and Marcano, 1996; Pekala and Forbes, 1997). Therefore, there was no need for the baseline condition (eyes open sitting
(quietly) to extend to the length of the speech because the effects of such a baseline condition are well established; also keeping the condition to 2–4 minutes enables comparison to the same baseline condition in the literature. This said, it was felt that the archive film would benefit from being the same length as the speech with the PCI completed in reference to the last 2–4 minutes, in case there was a potential confounding variable associated with how long a person watched a video on screen. Ronald J. Pekala confirmed the appropriateness of this approach in correspondence with the author before the conducting of the Pilot Analytical Study.

After the PCI, participants completed adapted PCI-Hypnotic Assessment Protocol post-assessment questionnaire items. Self-reported hypnotic depth and imagoic suggestibility items from the PCI-HAP hypnotic dream underwent modification by the author to provide a speech self-reported depth of influence score and an imagoic suggestibility score.

**Figure 5.2: Instructions given to participants prior to completion of the PCI (Form A)**

Before completing the PCI participants were given the following standard instructions.

> With the following questionnaire, you are to rate your experience of yourself and the time period in question by means of statements like the one shown below. You are to evaluate your subjective experience according to the statements listed.

1. I felt very tranquil. 0 1 2 3 4 5 6 I felt very anxious.

You are to do this by circling the number on this inventory that best corresponds to your subjective experience during the time period in question for each of the following items. (If you are using an optical scanning sheet, then darken the number on the answer sheet that best corresponds to your subjective experience during the time period in question.) As an example, if during the time period in question, you would rate your mood as “very calm and tranquil” and not at all “very anxious”, you would circle the “0” on this questionnaire (or darken the number “0” on the answer sheet if you are using an optical scanning form) that corresponds to statement number 1.
If, on the other hand, you were neither “very tranquil” nor “very anxious,” that is, you were midway between the two statements, you would circle the “3” on the answer sheet. Circling the “0” means your experience is very much like the statement on the left, while circling the “6” means your experience is very much like the statement on the right. Circling the numbers between “0” and “6” means your experience was somewhere between the statement on the left and that on the right. Please feel free to choose any one of the numbers between “0” and “6”.

Thus you are to circle the number (or darken in the number on the answer sheet if you are using an optical scanning form) for each statement that best corresponds to your subjective state at the time mentioned. Please do this for each of the following statements (found on the following pages), trying to be as accurate as you can.

In order to best determine your subjective experience, definitions have been provided for some of the key words used on the following pages.

1. SENSATIONS: are internal bodily impressions that you become aware of. Itches, pressure, pain, warmth, and coldness are examples of such sensations.

2. PERCEPTIONS: are impressions that you feel you receive from the external world. Perceptions come from the environment through sights, sounds, smells, etc.

3. FEELINGS OR EMOTIONS: are those internal impressions or moods such as happiness, joy, anger, excitement, etc.

4. THOUGHTS: are internal words, statements, and verbalizations that you are saying to yourself.

5. IMAGES OR IMAGERY: are internal visual (sights), auditory (sounds), kinesthetic (bodily), olfactory (smells), tactual (touch), or gustatory (tastes) impressions or pictures which pass before your mind, no matter how vague or dim they may be. They originate within you instead of coming from the environment.

6. IMPRESSIONS OR EVENTS: are any of the above, i.e., sensations, perceptions, thoughts, or images.
For example, the last item in the PCI-HAP post-assessment form asks participants about their hypnotic depth: ‘On a 1-to-10 scale, how hypnotised do you feel that you became? Let 1 = not hypnotised at all, and let 10 = the most hypnotised that you can imagine.’ In the present research, this item was adapted to ask participants about how deeply influenced they were by the speech with: ‘1 = not influenced at all, and 10 = the most influenced that you can imagine’. The original PCI-Hypnotic Assessment Protocol items and their adaptations are detailed in Appendix D.

SECTION 2 – Pilot Analytical Study results (n = 24) and their implications for the Main Study analyses in Chapters 6, 7, 8 and 9

5.4 Reduced analysis in the Pilot Analytical Study

The purpose of the Pilot Analytical Study was to rehearse the method in advance of scaling up the sample size further and before conducting the analyses in Main Studies A, B, C and D. Because of the small pilot sample size, the analysis of the Pilot Analytical Study data focused on a reduced number of hypotheses and ones related to three out of the four methodologies within the capacity of the PCI, namely:

- the measurement of trance depth
- the use of PCI-Hypnotic Assessment Protocol measures (before- and after-condition questions allowing for the exploration of relationships between areas such as trance depth, self-reported depth and imagoic suggestibility
- the mapping of the structure of consciousness with regard to intensity effects only.

5.5 Pilot Analytical Study hypotheses

The Pilot Analytical Study allowed for a preliminary assessment of the research design’s ability to explore the following reduced range of interrelated hypotheses. In terms of trance depth (see Chapter 6 for a definition):
• **Pilot Study Hypothesis A1** – Charismatic leadership oratory deepens trance (PSHA1)

• **Pilot Study Hypothesis A2** – Trance depth during charismatic leadership oratory is equivalent to that attained by high hypnotic susceptibility individuals during hypnosis (PSHA2)

• **Pilot Study Hypothesis A3** – Charismatic leadership oratory increases trance depth and at the same time widens range of hypnoidal response, as in hypnosis (PSHA3)

In terms of the relationship between depth of trance during a speech and adapted PCI Hypnotic Assessment Protocol areas:

• **Pilot Study Hypothesis B1** – There are positive relationships between adapted PCI-Hypnotic Assessment Protocol items similar to relationships found in hypnosis (PSHB1)

Finally, in respect of the mapping of the phenomenological structures of consciousness during a charismatic leadership speech:

• **Pilot Study Hypothesis C1** – Charismatic leadership oratory alters the structure of consciousness in relation to changes in PCI major and minor intensity levels (PSHC1)

Pattern effects are not reported for the Pilot Analytical Study due to the small sample that was analysed.

### 5.6 Pilot Analytical Study results

#### 5.6.1 Reliability Index (RI) scores

As a first step, participant Reliability Index (RI) scores were scrutinised. None of the 24 pilot-stage participants were found to have scores greater than RI = 2.01, suggesting that no participants had contrary patterns of response.

#### 5.6.2 Preliminary analysis

Because of the small sample, and distributions, non-parametric tests took place.
5.6.3 Depth of trance associated with charismatic leadership oratory (PSHA1, A2 and A3)

As will be discussed in depth at the start of the main results chapter below (Chapter 6), 10 PCI major and minor dimension intensity scores can generate a measure of trance depth (hypnoidal state) which predicts Harvard Group Scale of Hypnotic Susceptibility scores. Before undertaking the analysis, the PCI Excel spreadsheet programme (Pekala, Maurer and Ott, 2009) calculated hypnoidal state (predicted Harvard Group) scores.

Descriptive statistics for hypnoidal state across the three conditions (eyes open sitting quietly, archive film, charismatic leadership speech) suggested a slightly higher hypnoidal state for the charismatic speech than for the two control conditions and a higher hypnoidal state for the archive film than for the eyes open sitting quietly condition. Participants experienced a mean depth of trance of pHGS = 3.69 (SD = 0.90) during the baseline control condition, pHGS = 4.40 (SD = 0.87) during the pseudo attention placebo and a level of hypnoidal state of 4.59 (SD = 1.25) during the charismatic leadership oratory conditions (see Table 5.2, below). As expected, with the size of sample, confidence intervals (95%) overlapped between the conditions. Two participants out of 24 attained a high hypnoidal state (Pekala, 1991), pHGS > 7.0.

To address the hypothesis that people experience a deeper trance state during charismatic leadership oratory compared to ordinary consciousness, a series of tests took place.

Firstly, Related-Samples Friedman’s Two-Way Analysis of Variance by Ranks assessed differences between the distributions of the eyes open sitting quietly, archive film and speech conditions. This yielded a significant effect across all three conditions of \( \chi^2_2 (2) = 150, p < .0005 \) (two-tailed). Separate Related-Samples Wilcoxon Signed Rank Tests followed this.

These additional tests indicated a significant difference between the eyes open sitting quietly and archive film conditions \( (Z = 2.80, p = .003 \) (one-tailed)) and between the eyes open sitting quietly and speech conditions \( (Z = 2.87, p = .002 \).
(one-tailed)). A comparison of the archive film and speech condition hypnoidal state scores yielded a non-significant effect ($Z = 1.34$, $p = .089$ (one-tailed)).

Table 5.2: Hypnoidal state (predicted Harvard Group Score) differences for the three conditions in the Pilot Analytical Study ($n = 24$)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean</th>
<th>Range (minimum and maximum)</th>
<th>Standard deviation (SD)</th>
<th>Variance</th>
<th>Standard error (SE)</th>
<th>95% Confidence interval Lower bound</th>
<th>95% Confidence interval Upper bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>3.69</td>
<td>3.00–5.00</td>
<td>0.90</td>
<td>0.80</td>
<td>0.18</td>
<td>3.31</td>
<td>4.07</td>
</tr>
<tr>
<td>Archive film</td>
<td>4.40</td>
<td>2.94–5.87</td>
<td>0.87</td>
<td>0.75</td>
<td>0.18</td>
<td>4.03</td>
<td>4.77</td>
</tr>
<tr>
<td>Charismatic leadership speech</td>
<td>4.59</td>
<td>2.24–7.77</td>
<td>1.25</td>
<td>1.57</td>
<td>0.26</td>
<td>4.05</td>
<td>5.11</td>
</tr>
</tbody>
</table>

5.6.4 Relationships between trance depth during charismatic leadership oratory and adapted PCI-Hypnotic Assessment Protocol items (PSHB1)

To test the hypothesis that there are positive relationships between self-reported depth of influence, imagoic suggestibility and trance depth (hypnoidal state) during charismatic leadership oratory, correlations between these variables were assessed using Spearman’s Rho. Tests indicated a significant association between all of the variables. Specifically, there was a strong positive relationship between self-reported depth and imagoic suggestibility ($r_s(24) = .81$, $p < .0005$ (one-tailed)), and moderately strong positive relationships between self-reported depth and hypnoidal state ($r_s(24) = .51$, $p =.003$ (one-tailed)). Together with this there was a moderately strong relationship between imagoic suggestibility and hypnoidal state ($r_s(24) = .63$, $p <.0005$ (one-tailed)).

5.6.5 The structure of consciousness during charismatic leadership oratory (PSHC1)

*Eyes open sitting quietly versus charismatic leadership oratory*

Descriptive statistics for major and minor dimension intensity levels are provided in Appendix J.

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A Related-Samples Wilcoxon Signed Rank Test was used to test the null hypothesis that the median of differences between each of the PCI Major and Minor Dimensions would equal zero (see Appendix K). With regard to differences between the baseline control condition (eyes open sitting quietly) and the experimental condition (charismatic leadership speech) for the major dimensions, the four variables had significantly different scores: positive affect, arousal, negative affect and altered experience. Differences in mean score were not statistically significant for rationality, self-awareness, memory, inward absorbed attention, volitional control, vivid imagery, internal dialogue and altered state.

Differences between the baseline control condition (eyes open sitting quietly) and the experimental condition (charismatic leadership speech) for the minor dimensions were statistically significant for the following: joy, anger, sadness, altered meaning and absorption. There were non-significant changes for the minor dimensions of sexual excitement, love, fear, altered body image, altered time sense, altered perception, amount of imagery, vividness of imagery and direction of attention.

*Archive film versus charismatic leadership oratory – Pilot Analytical Study results*

As above, a Related-Samples Wilcoxon Signed Rank Test was used to test the null hypothesis that the median of differences between each of the PCI major and minor dimensions would equal zero (again see Appendix K). In relation to differences between the pseudo attention placebo condition (archive film) and the experimental condition (charismatic leadership speech) for the major dimensions, two variables had significantly different scores: arousal and altered state. Differences in mean score were not statistically significant for rationality, positive affect, self-awareness, memory, inward absorbed attention, negative affect, altered experience, volitional control, vivid imagery and internal dialogue.

In relation to differences between the pseudo attention placebo condition (archive film) and the experimental condition (charismatic leadership speech) for the minor dimensions there was one significant change for the variable absorption. All the other 13 minor dimension variables showed no significant
change (joy, sexual excitement, love, anger, sadness, fear, altered body image, altered time sense, altered perception, altered meaning, amount of imagery, vividness of imagery and direction of attention).

5.7 Discussion of Pilot Analytical Study results

*Does charismatic leadership oratory deepen trance (Pilot Study Hypothesis A1)?*

The descriptive statistics showed a small increase in depth of trance for the participant group as a whole. Criterion power analysis (using G*Power) indicated that if this difference were replicated for the full sample of n = 132 this would produce a statistically significant effect. This suggested that the research design might well be able to detect an increase in trance depth during charismatic leadership oratory and that it was capable of exploring the research purpose and main research question.

*Is trance depth during charismatic leadership oratory equivalent to that of high hypnotic susceptibility individuals during hypnosis (Pilot Study Hypothesis A2)?*

Prior PCI research has shown that, on average, high hypnotic susceptibility individuals attain a trance depth of pHGS = 7.0. Two participants (8.33%) attained a hypnoidal state greater than pHGS = 7.0. No participants attained a depth of trance greater than 5.87 in either the baseline control condition or the pseudo attention placebo condition. If found in the scaled-up Main Studies, this would suggest that for some people, experience of charismatic leadership oratory (in terms of depth of trance) is similar to that experienced by high hypnotisable individuals during hypnosis.

*Does charismatic leadership oratory increase the depth and widen the range of hypnoidal response, as in hypnosis (comparison with prior research) (Pilot Study Hypothesis A3)?*

The range of hypnoidal state score means (depth of trance) was greater for the charismatic leadership speech than for the other conditions as would be expected during hypnosis (see Chapter 6 for a detailed discussion). Again, an
increased range of scores would be something that one would expect to find if there was indeed a relationship between hypnosis and charismatic oratory.

**Are there positive relationships between adapted PCI-Hypnotic Assessment Protocol items that are similar to relationships found in hypnosis (Pilot Study Hypothesis B1)?**

As found in prior hypnosis research, using the PCI-Hypnotic Assessment Protocol, there were positive relationships between self-reported depth, imagoic suggestibility and trance depth. The strength of relationships suggests that if multiple regression were used with the full sample, self-reported depth of influence might predict hypnoidal state and amount of response imagery as does self-reported hypnotic depth during hypnosis (see Chapter 7 for discussion of prior research in this area).

**Does charismatic leadership oratory alter the structure of consciousness in relation to changes in PCI major and minor intensity levels (Pilot Study Hypothesis C1)?**

There were a number of significant changes in intensity levels despite the small sample size. This indicated that the piloted design, once scaled up to full size, might detect some of the more granular shifts in consciousness that have been detected in prior PCI research across a range of conditions.

**5.8 Analytical considerations arising from the literature and learning from the Pilot Analytical Study analysis**

Preliminary analysis of the Pilot Analytical Study data led to the use of a non-parametric test with the PCI major and minor dimensions. This raised a number of issues connected with thinking about the nature of the inferential tests during the final analysis with the full sample, should there be similar distributions. It was clear that the present investigation might yield skewed data and in some cases heavy tailed distributions (for example, in the case of the minor dimension of sexual excitement during all three conditions). This is an area that has been little discussed in the PCI literature where, with only one identified exception (a small-scale study related to state of consciousness during partial epileptic seizures (Johanson et al., 2008)), the convention has
been to apply separate MANOVA for major and minor dimensions followed by between-condition ANOVA and then pairwise comparisons. Although established in the literature as the conventional approach, there is no clear line accompanying this with regard to the question of whether it may be advantageous to transform skewed distributions in order to improve normality prior to doing this. Indeed, the vast majority of peer-reviewed journal articles do not state whether data had undergone transformation before testing or not. One exception, however, (Barnes, Lynn and Pekala, 2008) clearly shows the effectiveness of applying transformation in a PCI study. The question of whether to transform or not is generally, though, a controversial one with a number of points of view (see for discussions Field, 2007). Referring to ungrouped data, however, Tabachnick and Fidell (2007) suggest that ‘it is probably best to transform variables to normality unless interpretation is not feasible with the transformed scores’ (Tabachnick and Fidell, 2007: 86). As the study chose this text to inform approaches such as preliminary assumption testing, and the use of multiple regression, in like manner adopting Tabachnick and Fidell’s view of transformation seemed appropriate – at least for consistency.

A second consideration arose from the use of parametric tests with amalgamated Likert scale items, which is not universally accepted. Although acknowledging the debate (see Jamieson, 2004), the author’s decision was to proceed with parametric testing, if possible. Lubke and Muthen (2004) note that true parameter values are attainable if the data meets assumptions related to areas such as skewness and number of categories. Similarly, Glass, Peckham and Sanders (1972) showed that ANOVA F tests could yield reliable levels of statistical significance when ordinal data is used. Of particular relevance to the present investigation, Carifio and Perla (2008), in response to Jamieson (2004), point out that although Likert individual question items may be ordinal, Likert scales consisting of sums of many items can be seen as generating a form of interval data and therefore the use of a parametric test is valid. PCI major and minor dimensions are a function of multi items and so meet this criterion, if this argument is accepted. There are, however, some single item questions within the PCI-Hypnotic Assessment Protocol (something
noted in a critique of the protocol by Wagstaff (2010), but defended by Pekala (2010)). Chapter 10 (which covers possible limitations in the research design and results) gives a rationale for maintaining these as single items within the present research.

On balance, normalising the Main Study C data (following Barnes, Lynn and Pekala’s approach (2008)), if skewness occurred, and using the MANOVA approach above, was seen as the most appropriate action for two reasons: firstly, because of the advantage of being able to compare evidence to prior research; secondly, because of the desire to construct reliable psygrams from the same data. Psygrams first require the calculation of Pearson’s Product Moment Correlation Co-efficient and therefore reasonable normality. Mindful of evidence suggesting that in some instances the use of transformation may reverse effects (Grissom, 2000), as Howell recommends (2007), it was decided that before analysis the transformed and untransformed means would be compared and (following the analysis) parallel non-parametric tests conducted to check for possible Type I errors resulting from the use of transformed data. In the case of a need for transformation, there would also be a Bonferroni adjusted level of alpha imposed for both PCI major and minor dimensions to ensure a more stringent level of hypothesis testing, again with a view to avoiding a Type I error.

5.9 Conclusions of the Pilot Analytical Study

The Pilot Analytical Study result suggested that the present research design was capable of producing results that were significant and methodologically sound in respect to comparison with existing PCI research. The Pilot Analytical Study design was therefore taken forward without modification and the remaining participants informed of their research session dates. In terms of the two research aims outlined at the opening of Chapter 1:

**Research Aim 1** – To identify a means of operationalising the effects of charismatic leadership in a way that could allow a comparison of such effects to hypnosis
Research Aim 2 – To use the approach identified in research aim 1 to find out whether the effects of charismatic leadership are similar to, or the same as, the effects of hypnosis

– pilot findings indicated that the use of the PCI as an operational bridge between the effects of charismatic leadership and hypnosis was a suitable method to adopt, if the research focused on leadership oratory. In addition to this, it appeared that (with a larger sample) this means of operationally defining the effects of oratory would be able to detect both an increase in trance depth during oratory and relationships between adapted PCI-Hypnotic Assessment items and hypnoidal state, two effects predicted by the long-standing hypnotic leadership hypothesis.
Chapter 6 – Main Study A: Trance depth during charismatic leadership oratory

6.1 Areas of the research design made use of in Main Study A

In relation to the research design discussed in Chapter 5, Main Study A made use of data from those areas of the design which are indicated in blue in Figure 6.1. Areas in grey did not contribute to the analysis in Main Study A.

Figure 6.1: Areas of the research design which apply to the analyses in Main Study A
6.2 Introduction: operationalising trance using Phenomenology of Consciousness Inventory (PCI) results

6.2.1 The concept of hypnoidal state

The Harvard Group Scale of Hypnotic Susceptibility (Shor and Orne, 1962) has been one of the most widely used instruments in the study of hypnosis during the past 70 years (see for discussions Heap, Brown and Oakley, 2004; Nash and Barnier, 2008). By embedding an eyes closed sitting quietly period towards the end of the Harvard protocol associated with the scale and asking participants to complete the PCI in reference to this period, Pekala and colleagues have been able to demonstrate empirically, with replication, the relationship between Harvard scores and PCI major and minor dimension intensity results.

A ‘predicted Harvard Group Score’ (pHGS) can be generated from 10 of the 26 major and minor PCI dimensions. Pekala and Kumar (1984) first reported a validity coefficient of $R = .62$ illustrating the pHGS’s ability to predict Harvard scale scores. Two later studies generated coefficients of $R = .65$ (Pekala and Kumar, 1987) and .67 (Forbes and Pekala, 1993). A replication, using the Stanford Scale of Hypnotic Susceptibility (Form C) scores (Hand, Pekala and Kumar, 1995), found a coefficient of $R = .86$. Therefore, it is possible to argue that pHGS predicts hypnotic susceptibility for two of the most frequently used instruments in the study of hypnosis as well as, at the same time, being a measure of trance depth when applied to any research condition.

As well as a valid and reliable research measure, pHGS is used with individual clients as part of therapeutic practice because it is a less invasive way of assessing hypnotic susceptibility and depth of trance than the Harvard protocol and similar assessments (for a discussion, see the PCI and PCI-Hypnotic Assessment Protocol therapist’s manual (Pekala, 2009)). It is then possible to compare individuals' hypnoidal state (pHGS) during hypnosis to baseline assessments such as sitting quietly with eyes closed and other conditions, and therapeutic interventions, such as skin temperature biofeedback, a body scan and relaxation (see Pekala, 1991, for case study examples). It is also argued (Pekala et al., 2010b) that because of the nature of the phenomenology
measured by the pHGS, hypnoidal state (as expressed by pHGS) is less likely to be distorted by some confounding variables than are typical self-report measures of hypnotic depth. In particular, it is suggested that pHGS is less prone to being affected by demand characteristics (Orne, 1962b) (subtle cues that may make participants aware of what the experimenter expects to find or how participants are expected to behave) and response sets (Wagstaff, Cole and Brunas-Wagstaff, 2008) (the tendency for participants to acquiesce and answer ‘true’ or ‘yes’).

To facilitate consistent and accurate scoring of the pHGS and related PCI measures by researchers, and during therapy, Pekala and colleagues developed an Excel spreadsheet programme (Pekala, Maurer and Ott, 2009).

The pHGS regression equation (Pekala and Kumar, 1987), integrated into the Excel scoring protocol, generates a benchmark of hypnoidal state (or depth of trance) from the selected PCI major and minor dimension intensity scores. The higher the resulting pHGS score, the deeper the trance state, and the similar a condition is to the phenomenological experience of high hypnotic susceptibility individuals following the Harvard scale induction. Pekala and colleagues use the term ‘hypnoidal’ (Pekala, 1991; Pekala and Kumar, 2000; 2007; Pekala et al., 2010a; 2010b; 2010c) to distinguish correlations to the continuum of phenomenology (PCI major and minor dimension intensity) associated with hypnosis from the behavioural effects and self-reports usually associated with the term ‘hypnotic’, the Harvard scale and similar suggestibility tests.

**6.2.2 How the pHGS is constructed**

Before going on to present and then discuss the hypnoidal results from Main Study A, the next section clarifies what pHGS measures and therefore the nature of hypnoidal state, both with regard to the statistics used in the pHGS’s construction and the content of the Harvard protocol against which the pHGS benchmarks itself.

The Harvard Group Scale of Hypnotic Susceptibility (Form A) (Shor and Orne, 1962) is an adaptation of the Stanford Hypnotic Susceptibility Scale (Form A) (Weitzenhoffer and Hilgard, 1959). Shor and Orne designed the Harvard scale
for group administration (with self-report scoring) rather than individual administration and objective scoring.

The twelve tests embedded within the Harvard protocol are a mixture of production and inhibition (see Figure 6.2) but have a strong bias towards motor rather than cognitive suggestion. Scoring is simply + or – for each of 12 suggestibility tests. A person who has attained a Harvard score of 12 has ‘passed’ all tests, a person with a score of 0, none. In theory, hypnoidal state scores can range from pHGS = -0.71 to 11.77 (Pekala and Nagler, 1989) albeit in practice they usually range from pHGS = 1 to 9 (Pekala, 1991). For hypnosis, specifically, this has been shown to be pHGS = 1.84 to 9.44 (Pekala and Forbes, 1997; in Pekala, 2009), reflecting the wide and normally distributed response to hypnosis and hypnotic susceptibility in the general population.

The highest theoretical hypnoidal state would be associated with a maximum intensity of experience (scores of 6) for altered experience, altered state of awareness, rationality, absorption and altered time sense, with minimum intensity (scores of 0) for volitional control, self-awareness, memory, altered body image and internal dialogue. The lowest theoretical hypnoidal state (completely non-hypnoidal) is therefore associated with the opposite scores for the dimensions above. However, whilst increased altered body image contributes to increased altered experience, the Harvard score predictions for these two variables go in the opposite directions. Therefore, the minimum hypnoidal state score, with altered body image of 0, is pHGS = -0.23 (or -0.29 for a score of 6). The maximum hypnoidal state with a score of 6 for altered body image is pHGS = 11.29 (or 11.35 for a score of 0).
Figure 6.2: The tests in the Harvard Group Scale of Hypnotic Susceptibility (Form A), with the order in which they take place following induction indicated in brackets

<table>
<thead>
<tr>
<th>Type of suggestion</th>
<th>Motor</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>Head falling</td>
<td>Hallucination (fly [annoying buzzing])</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(9)</td>
</tr>
<tr>
<td></td>
<td>Eyes closure</td>
<td>Post-hypnotic suggestion (touch ankle)</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>(11a)</td>
</tr>
<tr>
<td></td>
<td>Hand lowering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands moving (together)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>Inhibition</td>
<td>Arm immobility</td>
<td>Eyes catalepsy</td>
</tr>
<tr>
<td></td>
<td>(4)</td>
<td>(10)</td>
</tr>
<tr>
<td></td>
<td>Finger lock</td>
<td>Amnesia</td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td>(11b)</td>
</tr>
<tr>
<td></td>
<td>Arm rigidity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication inhibition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6.3 illustrates the relationship between predicted Harvard Group Score and actual Harvard scores. For hypnosis versus a period of sitting quietly with eyes closed, changes begin to emerge from around Harvard score 4 (hypnosis pHGS = 5.04).

To calculate the regression equation, Pekala and Kumar (1987) used multiple regression with all 26 major and minor dimensions in response to the Harvard induction. The regression equation uses only those unstandardised coefficients for the 10 dimensions with significance $p < .001$. Table 6.1 describes the regression equation that produces the pHGS (or ‘hypnoidal state’ score) in detail.

Figure 6.4 depicts in a graphical form the transition from a non-hypnoidal to a hypnoidal state and the underlying direction and contribution of each relationship within the regression equation that predicts Harvard score.
Thus, someone entering a high hypnoidal state (similar to a person who has ‘passed’ most or all the Harvard suggestibility tests) is likely to become aware of alterations in their experience of reality, such as feelings that are ‘deeply sacred and meaningful’ and ‘religious, spiritual or transcendental’. See Appendix C for the PCI item wording associated with the major and minor dimensions.

They may also perceive changes in the ‘colour or form of the world’ around them, with their experience changing in relation to their ‘perception of the flow of time’, and possibly, the experience of time ‘standing still’ or appearing to ‘speed up or slow down’. In conjunction with this, they are likely to be aware that their state of consciousness is ‘extremely different and unusual’ (relative to what it is ‘ordinarily’) and a feeling that they have less control over what they are paying attention to as ‘images and thoughts’ start ‘popping’ into their mind seemingly without their volition. Indeed, they may also not feel that they are
‘aware of being aware’ of themselves at all, losing their sense of self, and possibly recalling little of what has happened to them.

Table 6.1: Hypnoidal state score (pHGS [predicted Harvard Group Score]) regression equation

<table>
<thead>
<tr>
<th>PCI (Sub)Dimension</th>
<th>x</th>
<th>Unstandardised Regression Coefficient</th>
<th>Relative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered experience</td>
<td>+.35</td>
<td></td>
<td>17%</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>+.31</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Volitional control</td>
<td>-.28</td>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>-.27</td>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>Rationality</td>
<td>+.23</td>
<td></td>
<td>11%</td>
</tr>
<tr>
<td>Absorption</td>
<td>+.19</td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>Memory</td>
<td>-.14</td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>+.13</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>-.11</td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>Altered body image</td>
<td>-.07</td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td>Constant</td>
<td>+ 4.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Percentages indicate relative magnitude of the coefficient. Each PCI (sub)dimension is rated on a ‘0’ to ‘6’ scale, with ‘0’ indicating ‘none or little’, and ‘6’ indicating ‘much or complete’.

Source: Pekala et al. (2010a: 280)

At the same time, however, their thinking may feel more ‘clear and distinct’ with a slightly increased sense of being in their own body as they also become more ‘able to be completely absorbed’ in the experience. In addition, there is likely to be a reduction in the amount of silent talking that they find themselves engaged in.

It is the regression equation above that has been converted into an Excel spreadsheet formula and which generates, for the researcher or clinician, a hypnoidal state score in cell R33 of the Excel Scoring Spreadsheet for whatever condition the participant has experienced and completed the PCI questionnaire with reference to (see Appendix I). Creating such an automatic and practical process for the generation of trance depth (hypnoidal state) scores has helped to ensure the fidelity of PCI research over the past 30 years.
The regression equation is only calculated for participants with marginal or better (RI > 2.29) levels of intra-individual reliability as indicated by the Reliability Index Score (RI), reported in cell R43 of the spreadsheet.

Figure 6.4: The transition from non-hypnoidal to hypnoidal state, showing graphically the direction of prediction for increase in Harvard score and relative contribution of the major and minor dimensions of consciousness

<table>
<thead>
<tr>
<th>Altered experience</th>
<th>Altered state</th>
<th>Rationality</th>
<th>Absorption</th>
<th>Altered time sense</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volitional control</th>
<th>Self-awareness</th>
<th>Memory</th>
<th>Internal dialogue</th>
<th>Altered body image</th>
</tr>
</thead>
<tbody>
<tr>
<td>↓</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
</tbody>
</table>

6.2.3 pHGS as a general measure of trance

Pekala and Kumar suggest that pHGS can be seen as a ‘general measure of trance’ (2000: 112), paralleling Spearman’s ‘g’ factor (Spearman, 1904, 1923) for general mental ability. As such, it has the potential to compare hypnoidal state during hypnosis to other conditions, to establish whether these conditions generate trance depths similar to hypnosis or just to assess conditions not normally associated with hypnosis, and to look for similar patterns in relation to trance depth. Pekala and colleagues’ ‘general measure of trance’ (referred to in the literature as either a predicted Harvard Group Score or Hypnoidal State Score) is said to be such because of the following argument in relation to the use of regression equations.

Because a regression equation can be used to explain or predict the behaviour of a dependent variable, in the case of the use of PCI major and minor intensity levels, the prediction of the complex multidimensional phenomenological state is associated with different levels attained during the Harvard Group Scale of Hypnotic Susceptibility (Form A). When such an equation is used outside of
the original context, with a different condition, it can be said to provide an analogue and read-across to the original condition that was used in the generation of the equation. In this case, the PCI regression equation can be used as a means of establishing depth of trance outside of hypnosis.

For example, a study by Pekala and Ersek (1992-1993) compared the phenomenal experience of fire-walking with hypnosis. This study looked at depth of trance during fire-walking in order to assess whether this was similar to the experience of the average high hypnotic susceptibility individual during hypnosis (pHGS > 7.0). A score of above pHGS = 7.0 is therefore considered a ‘high hypnoidal state’ (see Figure 6.5).

![Figure 6.5: Thresholds of hypnoidal state for pHGS scores (Pekala, Maurer and Ott, 2005)](image)

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 – 3.00</td>
<td>Non-hypnoidal state</td>
</tr>
<tr>
<td>3.01 – 5.00</td>
<td>Mild hypnoidal state</td>
</tr>
<tr>
<td>5.01 – 7.00</td>
<td>Moderate hypnoidal state</td>
</tr>
<tr>
<td>7.01 – 9.00+</td>
<td>High hypnoidal state</td>
</tr>
</tbody>
</table>

6.3 Generation of trance tables (Appendix B) to facilitate a comparison with findings from prior research and across a wide range of conditions

6.3.1 Method used to construct the trance tables

One possible criticism of the approach taken, particularly in relation to the exploration of whether charismatic leadership oratory deepens trance, was a tacit assumption that increased hypnoidal state score (depth of trance) by definition indicates the presence of a relationship to hypnosis. Alongside this, a review of the literature related to the PCI indicated that (despite the fact that there were good reasons to assume that the hypnoidal state scores are equivalent to a ‘general measure of trance’ (Pekala and Kumar, 2000; 2007)), no formal comparison of trance depths from a range of conditions had ever been carried out. This was confirmed in correspondence with Ronald J. Pekala.
This section describes the desk research that was carried out to develop such a classification and presents the resulting trance tables that were used in the various discussions in the results sections of the research. It is these tables that have been used below in the discussions in order to make a comparison with a wide range of conditions that have been assessed using the PCI.

A review of all the published and available papers and literature that have used the PCI within a research design, where there was a base line control condition, yielded 23 publications where hypnoidal state scores were reported or could be generated from published results. Because the regression equation produces the same score (to within a reasonable number of decimal places) when calculated from means presented within tables showing major and minor intensity levels, it was still possible to generate hypnoidal state scores from papers where the actual score had not been calculated.

It was also possible, where graphs were drawn with a degree of quality, to measure scores to within two decimal places (approximately) and then enter these scores into the regression equation. Thus the results presented in Appendix B are either:

1. Hypnoidal state scores as they were reported in the papers that are cited
2. Hypnoidal state scores generated from reported PCI major and minor dimension means within papers where the dimensions are reported but not predicted Harvard Group Scores
3. Hypnoidal state scores estimated from the measurement of graphs which reported the necessary 10 PCI major and minor dimension intensity levels

These variations in reporting or calculation are indicated within the tables in the key. The population from which the sample was drawn is also shown, as are sub-groups.
### Figure 6.6: The first page of the trance tables (see Appendix B)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Whole participant group or sub-group</th>
<th>pHGS</th>
<th>Sten</th>
<th>Participants</th>
<th>n</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discarnate reading by mediums</td>
<td>Whole group</td>
<td>7.47</td>
<td>10</td>
<td>M</td>
<td>7</td>
<td>Rock and Beischel (2008)</td>
</tr>
<tr>
<td>Hypnosis (Harvard Induction)</td>
<td>High hypnotic susceptibility (10-12)</td>
<td>7.26</td>
<td>9</td>
<td>SP</td>
<td>12</td>
<td>Kumar, Pekala and Marcano (1996)***</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Hypnotic type VIII ‘Fantasy highs’ (7.85)</td>
<td>7.22</td>
<td>9</td>
<td>SP</td>
<td>100</td>
<td>Pekala (1991: 275)</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>High hypnotic susceptibility (9-12)</td>
<td>7.17</td>
<td>9</td>
<td>SN</td>
<td>57</td>
<td>Pekala and Forbes (1988)</td>
</tr>
<tr>
<td>Hypnosis (non-standard protocol x 3)</td>
<td>Hypnotic ‘virtuosos’ (Harvard score M = 10.58)</td>
<td>7.09</td>
<td>9</td>
<td>S</td>
<td>12</td>
<td>Cardena (2005)</td>
</tr>
<tr>
<td><strong>High hypnoidal state</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progressive relaxation</td>
<td>High hypnotic susceptibility (9-12)</td>
<td>6.91</td>
<td>9</td>
<td>SN</td>
<td>57</td>
<td>Pekala and Forbes (1988)</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>High-medium hypnotic susceptibility (7-8)</td>
<td>6.59</td>
<td>8</td>
<td>SN</td>
<td>70</td>
<td>Pekala and Forbes (1988)</td>
</tr>
<tr>
<td>Charismatic leadership oratory</td>
<td>Follower Type IV</td>
<td>6.38</td>
<td>8</td>
<td>B</td>
<td>18</td>
<td>Present Main Study A</td>
</tr>
<tr>
<td>Hypnosis (Harvard Induction) (see author’s note)***</td>
<td>High hypnotic susceptibility (10-12)</td>
<td>6.31</td>
<td>8</td>
<td>SP</td>
<td>44</td>
<td>Kumar, Pekala and Marcano (1996)***</td>
</tr>
</tbody>
</table>

**Continued in the trance tables in Appendix B**
In total the scores presented in the trance tables represent data from 7,257 participants, with an overall mean for all reported conditions of $M = 4.93$, $SE = .10$, $SD = 1.22$ and a range of scores from 1.78 to 7.64. Analysis of histograms indicated a normal distribution of scores with skewness = .063 and kurtosis = -.087. The presence of a normal distribution and the nature of the range of scores appear to confirm the contention that hypnoidal state score can be perceived as a general measure of trance. Finally, sten scores were calculated in order to facilitate discussion in the various results sections.

6.3.2 What the trance tables confirm in relation to hypnosis within the continuum of trance types and conditions

Evidence from the trance tables broadly suggests that compared to other conditions, hypnosis appears to both increase hypnoidal state and disperse scores to their widest range, a feature of hypnosis first identified in Pekala and Forbes (1988), see below. This happens at the individual participant range level (as noted above, in Pekala, 2009) and in relation to sub-groups based on susceptibility (trance tables, sten 1 to 10). This breadth of score during hypnotic induction also reflects the wide and approximately normal distribution of hypnotisability in the general population (Hilgard, 1965). In this respect, the relationship between hypnoidal state generally and conditions is similarly to that of light travelling through a prism where one angle causes refraction and some dispersion and the next angle, wider dispersion.

Some conditions are associated with ‘downward refraction’, reducing trance depth compared to the overall mean for conditions (in the table pHGS = 4.96) and cause less dispersion of range (such as the two standard control conditions used in PCI research (eye closed or open sitting quietly, which range from sten 1 to 5, with one study borderline 5–6)). Other conditions increase trance depth but do not appear to disperse scores as widely as hypnosis. Drawing further on the analogy of a prism, the first angle may relate, perhaps, to what are sometimes termed ‘state effects’ (the condition itself) (Pekala, 1991) with the wider dispersion being the result of trait effects (such as hypnotic susceptibility and perhaps related traits, such as dissociativity). Pekala, Kumar and Marcano (1996) using the Dissociative Experiences Scale (Bernstein and Putnam, 1986),
in conjunction with the PCI, Harvard induction and related Harvard scores, have shown that during hypnotic induction, high susceptibility individuals with high dissociativity attain the highest levels of hypnoidal state (pHGS) and low susceptibility individuals with low dissociativity the lowest levels of hypnoidal state.

Figure 6.7 illustrates, for example, the way in which deep abdominal breathing and progressive relaxation refract hypnoidal state scores (in this case downward and upward, respectively) whilst only the hypnosis condition refracts and disperses mean depth of trance according to trait. It also illustrates that this refraction (or widening of trance depth) is clearly a function of level of hypnotic susceptibility with a clear attenuation of trance depth for low hypnotisables and amplification for highs with regard to the difference between progressive relaxation and hypnosis (two conditions which shared similar average intensity levels).

Figure 6.7: Hypnoidal state as a function of four conditions (re-drawn presentation of results in Pekala and Forbes, 1988)
6.4 Proposition A and hypotheses related to an exploration of trance depth during oratory

Because it is possible to use PCI major and minor dimension intensity results to predict Harvard Group Scale of Hypnotic Susceptibility (Form A) scores (Shor and Orne, 1962), the present research was able to obtain a measure of the ‘hypnodidal effects’, or trance depth (Pekala and Nagler, 1989) associated with the subjective phenomenological experience of charismatic oratory. Using the PCI in this way enabled the exploration of the first of the four propositions outlined in Chapter 1:

Proposition A – Trance depth during a charismatic leadership speech is affected in a similar way to that found during prior hypnosis studies and research into other conditions associated with the term altered state of consciousness

Associated with this, it was possible to evaluate five interrelated hypotheses:

- **Hypothesis A1** – Charismatic leadership oratory deepens trance
- **Hypothesis A2** – Overall trance depth during oratory is similar to that found for a whole sample during prior hypnosis research
- **Hypothesis A3** – Trance depth during charismatic leadership oratory is equivalent to that attained by high hypnotic susceptibility individuals during hypnosis
- **Hypothesis A4** – Charismatic leadership oratory increases trance depth and at the same time widens range of hypnoidal response, as in hypnosis
- **Hypothesis A5** – Trance depth during charismatic leadership oratory is similar to other conditions associated with the term altered state of consciousness
A mixture of inferential testing on Main Study A data and descriptive comparison to prior research using the PCI took place. Inferential testing of hypnoidal state score results for the three conditions was used to address *Hypothesis A1*. *Hypothesis A2 – Hypothesis A4* made use of a descriptive comparison of trance depth during oratory with that found during hypnosis and a wide range of other conditions in (in part facilitated by the review of the PCI literature and compilation of trance tables (see Appendix B)).

6.5 Results

6.5.1 Summary of the analytical approach taken with regard to Proposition A

Using predicted Harvard Group Scores (pHGSs), generated from PCI major and minor dimension intensity results, the study’s design allowed for the testing of the hypothesis that charismatic leadership oratory deepens trance compared to control conditions. pHGSs from the charismatic leadership speech condition in Main Study A is then compared to evidence from prior research into hypnosis to look at overall trance depth, whether this depth is similar to the average experience of highly hypnotisable individuals during hypnosis and the range of scores found during charismatic oratory.

Assessment was also made of the possible effects of three potential confounding variables by looking to see if there was a relationship between speech hypnoidal state scores and the participant’s familiarity with the speech, sympathy with the speech content and age. The analysis also compared differences between male and female hypnoidal state during the speech.

The final part of the discussion section below interprets depth of trance during the charismatic speech condition by comparing it to the trance tables (Appendix B) compiled during the literature review and therefore the research conditions/sub-groups from a wide range of previously published research.

*Removal of participants who failed the PCI reliability index*

As is recommended by Pekala (1991), only participants with Reliability Index (RI) scores of less than RI = 2.01 (those without contradictory patterns of response) were included in the analyses, leaving 121 participants. This
reduced the original sample by 11, or 9.16%, a figure that compares favourably with previous research using the PCI (Pekala, 1991). Previous studies have reported the need to remove between 9% (Kumar, Pekala & Cummings, 1996) and 19% of participants (Terhune and Cardeña, 2010b). The number of participants remaining in each condition order can be found in Appendix L.

6.5.2 Charismatic leadership oratory and depth of trance (Hypothesis A1)

Scrutiny of the descriptive statistics (Table 6.2) for hypnoidal state across the three conditions (eyes open sitting quietly, archive film, charismatic leadership speech) suggested a higher hypnoidal state for the charismatic speech than for the two control conditions and a higher hypnoidal state for the archive film than for the eyes open sitting quietly condition. Confidence intervals (95%) did not overlap between the conditions.

To address the hypothesis that people experience a deeper trance state during charismatic leadership oratory compared to ordinary consciousness and because of the speech itself (rather than factors such as seeing crowds and the speech context), a one-way within-subject analysis of variance (ANOVA) examined the change in hypnoidal state between the three conditions and its significance. The analysis used SPSS repeated-measures with pairwise comparisons.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean</th>
<th>Range</th>
<th>SD</th>
<th>Variance</th>
<th>SE</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>3.97</td>
<td>1.23 – 5.74</td>
<td>0.99</td>
<td>0.99</td>
<td>0.09</td>
<td>3.79 – 4.14</td>
</tr>
<tr>
<td>Archive film</td>
<td>4.49</td>
<td>2.27 – 6.50</td>
<td>1.03</td>
<td>1.06</td>
<td>0.093</td>
<td>4.31 – 4.68</td>
</tr>
<tr>
<td>Charismatic leadership speech</td>
<td>5.09</td>
<td>2.06 – 8.04</td>
<td>1.35</td>
<td>1.82</td>
<td>0.12</td>
<td>4.85 – 5.34</td>
</tr>
</tbody>
</table>
**Preliminary assumption testing**

Prior to analysis, an assessment using SPSS Explore was made of the pHGSs for the eyes open sitting quietly, archive film, charismatic leadership speech conditions against the assumptions of normality, sphericity and the absence of outliers necessary for the robust use of ANOVA within a repeated-measures design.

All of the above were found to be satisfactory. However, even though the variables met the assumption of sphericity using Mauchley’s Test ($\chi^2(2) = 5.88$, $p = .053$), because this test statistic was close to significance, sphericity was not assumed. Therefore, the Greenhouse-Geisser epsilon adjustment has been reported (with degrees of freedom corrected using $\varepsilon = .95$). Normality was assessed (as recommended by Tabachnick and Fidell (2007)) using a combination of descriptive data, scrutiny of histograms, Q-Q and P-P plots and the results of the Kolmogorov-Smirnov test which were significant in indicating normality (see Appendix M). Scrutiny of SPSS Explore box plots indicated no potential outliers for the three variables in question.

In order to assess whether counterbalancing had been effective within the study, prior to carrying out any further analysis, analysis of variance was carried out on each of the three conditions with the six condition orders as a between-subject factor. There was a non-significant effect for all three conditions, indicating that any learning from prior conditions had been cancelled out and that asymmetric skill transfer (Poulton and Freeman, 1966) was not a confounding variable in relation to the measure of trance depth within the study. The results of this analysis can also be found in Appendix M.

**Additional ANOVA-based analysis, in order to further account for potential order effects**

The research design, incorporating full counterbalancing to six condition orders, with a minimum washout period of four weeks between conditions, made it very unlikely that altered consciousness related carryover effects would have confounded the research. Indeed, as already noted, current evidence (Pekala, 1991; Pekala and Kumar, 2007; Pekala, 2015) suggests that the PCI has
validity and reliability only in relation to the previous 2–4 minutes of retrospective interoception. Further, most authorities consider similar approaches to the one above to be sufficient to deal with carryover effects in hypnosis-related studies (see for example, Gruzelier, 1998; Oakley, Deeley and Halligan, 2007, respectively). Order effects (due to fatigue or practice) were, however, a potential issue bearing in mind the number of items that participants were required to complete across the PCI and adapted PCI-Hypnotic Assessment. For completeness, and in the light of the potential importance of the initial findings in this first analysis, a more rigorous ANOVA-based assessment was conducted to confirm the between-subject ANOVA on conditions order results described above. As the approach may be less familiar to some readers, for this first assessment, the protocol is both explained and working shown. Further use of this testing in Chapter 8 merely reports the resulting chi-squared values and levels of significance.

Kuehl’s (2000) approach to testing for carryover (and order) effects in within-subject counterbalanced (or crossover) designs was applied in conjunction with the supporting approach to coding carryover covariates recommended by Penn State University (Penn State Science, 2015: 13.1–13.4). This covariate coding approach involves first building a matrix with conditions orders (sequence) versus period (see Figure 6.8). Then the effect-type coding illustrated in Tables 6.3 and Table 6.4 is applied.

**Figure 6.8: The Penn State University approach to coding carryover variables (defining period and sequence values) as applied to condition orders in the present research**

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Period 1</th>
<th>Period 2</th>
<th>Period 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eyes open</td>
<td>Archive film</td>
<td>Charismatic speech</td>
</tr>
<tr>
<td>2</td>
<td>Eyes open</td>
<td>Charismatic speech</td>
<td>Archive film</td>
</tr>
<tr>
<td>3</td>
<td>Archive film</td>
<td>Eyes open</td>
<td>Charismatic speech</td>
</tr>
<tr>
<td>4</td>
<td>Archive film</td>
<td>Charismatic speech</td>
<td>Eyes open</td>
</tr>
<tr>
<td>5</td>
<td>Charismatic speech</td>
<td>Eyes open</td>
<td>Archive film</td>
</tr>
<tr>
<td>6</td>
<td>Charismatic speech</td>
<td>Archive film</td>
<td>Eyes open</td>
</tr>
</tbody>
</table>
Table 6.3: The Penn State University approach to coding carryover variables (coding matrix) as applied in the present research (Penn State Statistics, 2015: 13.2)

<table>
<thead>
<tr>
<th>Condition</th>
<th>$x_1$</th>
<th>$x_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Archive film</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Charismatic speech</td>
<td>-1</td>
<td>-1</td>
</tr>
</tbody>
</table>

Table 6.4: Example coding for two participants within the present research

<table>
<thead>
<tr>
<th>Participant number</th>
<th>Period</th>
<th>Sequence</th>
<th>Condition</th>
<th>pHGS</th>
<th>$x_1$</th>
<th>$x_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>4.57</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2.25</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4.34</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>36</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>3.14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>3.71</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>7.19</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Using this data, it is possible to conduct a repeated-measures ANCOVA using SAS code (Penn State Science, 2015, 13.3) with $x_1$ and $x_2$ as covariates followed by a re-run of the ANOVA in which the carryover covariates ($x_1$ and $x_2$) are now dropped from the model. Because the reduced model is produced as a subset of the full model (which includes the two covariates), a likelihood ratio test can be constructed as follows:

\[ \Delta G^2 = (-2\log L_{\text{Reduced}}) - (-2\log L_{\text{Full}}) \text{ with } df_{\text{Full}} - df_{\text{Reduced}} \text{ degrees of freedom.} \]

Degrees of freedom for the full model and reduced model are given in Table 6.5.

The two fit statistics (-2 Restricted Log Likelihood) when used in this way produce a chi-squared test statistic that can be used to test the null hypothesis that a study’s results have been not been confounded by carryover or order effects. It is also possible to generate the same test statistics in SPSS using Linear Mixed Effects Modelling in which sequence and participant variables are
specified as subject variables; and the period variable as the repeated measure (with heterogeneous compound symmetry structure (Toeplitz: Heterogenous)). The linear models [main effects] consisted of: DV = Period, Sequence, Condition, x₁, x₂ (full model); DV = Period, Sequence, Condition (reduced model).

Table 6.5: Degrees of freedom for the full and reduced models

<table>
<thead>
<tr>
<th>Effect</th>
<th>df Full (numerator)</th>
<th>df Reduced (numerator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Conditions</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sequence</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>x₁</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>x₂</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>9</td>
</tr>
</tbody>
</table>

Following the approach described above, SAS Repeated-Measures ANCOVA with carryover covariates (x₁ and x₂) followed by a reduced model ANOVA yielded -2LogL values of 1103.06 and 1098.67, respectively. Applying $\Delta G^2 = 1103.06 - 1098.67 = 4.39$, with a critical value of $\chi^2 (.05, 2) = 5.99$, it was apparent that there were no significant order effects with regard to changes in hypnoidal state (pHGS) across the three conditions.

Exact calculation of the probability level from the chi-squared test statistic and degrees of freedom yielded $\chi^2 (2) = 4.39$, $p = .111$; and with the sample size of 121 a small to medium effect ($w = 0.188$). The -2LogL values were confirmed using SPSS Linear Effects Modelling in order to verify the SAS coding (Penn State Science, 2015: 13.2).

**Charismatic leadership oratory versus archive film and baseline control (Hypothesis A1)**

There was a statistically significant main effect across the three conditions ($F = 44.34$, df = 1.91, 228.95, $p < .0005$ (two-tailed), partial $\eta^2 = 0.27$); observed power was 1.00. Bonferroni adjusted pairwise comparisons indicated
statistically significant mean differences between all three conditions. Speech versus baseline control (MD = 1.13, SE = 0.13, p < .0005 (one-tailed), CI (95%), 0.81 – 1.45, d = 0.80 (d = 0.95)), speech versus archive film (MD = 0.60, SE = 0.11, p < .0005 (one-tailed), CI (95%) = 0.33 – 0.87, d = 0.51 (d = 0.50)) and archive film versus baseline control (MD = 0.53, SE = 0.11, p < .0005 (one-tailed), CI (95%) = 0.25 – 0.81, d = 0.42 (d = 0.52)).

6.5.3 Mean trance depth associated with a hypnotic induction for whole samples compared to charismatic oratory in the present study *(Hypothesis A2)*

Using the scores above, it was then possible to make a comparison with pHGS scores during hypnosis from previous research.

*Previous research into the effects of a hypnotic induction on a whole participant group*

Prior large sample hypnosis research using the Harvard induction has indicated means of pHGS = 5.85 (n = 246), 5.86 (n = 194) and 5.97 (n = 173) with a lower mean reported for induction in the PCI-Hypnotic Assessment Protocol (pHGS = 5.42, n = 123) (see trance tables in Appendix B). There is one exception to this (Pekala, Kumar and Marcano, 1996). In spite of the fact that this mean is lower than that found in the present study for charismatic leadership oratory, the results in the Pekala, Kumar and Marcano study (1996) are not typical of hypnosis.

Scrutiny of data from the published paper shows that either there was a lower-than-usual percentage of high susceptibility individuals in the sample, or for some reason a large percentage of participants did not enter the depth of trance normally associated with the Harvard induction, because of an unknown confounding variable. Correspondence with one of the authors confirmed concern about the overall level of hypnoidal state. The distribution of lows versus highs is skewed, with 31% lows compared to 56% mediums and only 13% highs – compared to Pekala (1991: 321) where there were 40% lows, 56% mediums and 21% highs.
Most notably, the high susceptibility group mean (Harvard 10–12) is below 7.0, the benchmark for a high hypnoidal state, at pHGS = 6.31. A similarly anomalous effect can be found in a small-scale study of patients with eating disorders, whose mean Harvard score following induction was 6.60, and who therefore as a whole participant group also attained a lower-than-expected score for hypnotic induction according to their level of hypnoidal state (pHGS = 4.90) (Hutchinson-Phillips, Gow and Jamieson, 2007).

This said, based on those studies with more typical hypnoidal state means than the two exceptions described above, if charismatic leadership oratory is affecting a whole population group to the same extent as hypnosis, then mean hypnoidal state would be at least as high for charismatic leadership oratory as that found for the PCI-Hypnotic Assessment Protocol induction (pHGS = 5.42).

**Present study hypnoidal state score results**

The mean hypnoidal state for the charismatic leadership speech condition was pHGS = 5.09 (SD = 1.35, CI (95%) 4.85 – 5.34). As is noted above, in nearly all cases where prior large-scale research has used a standardised hypnosis induction (Harvard or the PCI-Hypnotic Assessment Protocol) the mean for hypnosis was higher than that found in response to charismatic leadership oratory. However, confidence interval data for hypnosis during the PCI-Hypnotic Assessment Protocol (calculated by the present author, from the mean, SD and number of participants reported in Pekala and colleagues (2010b)) (pHGS = 5.42, SD 1.46, CI (95%) = 5.16 – 5.68) overlaps with the confidence interval data for the charismatic speech condition (illustrated in Figure 6.9).
6.5.4 Depth of trance compared to the experience of high hypnotisables during hypnosis (Hypotheses A3 and A4)

Previous research into the effects of a hypnotic induction on high hypnotisables

A hypnoidal state of pHGS = 7.00 or above (associated with what on average a highly hypnotically susceptible person might attain during a standardised hypnotic protocol) is considered a high hypnoidal state (Pekala, Kumar and Maurer, 2005). This figure of pHGS = 7.0 (for a high hypnoidal state) was determined using a series of statistical tests. In Pekala (1991) the process of discriminant validity used to establish what would be considered a high score based on predicted Harvard Group Scores (hypnoidal state or depth of trance) is described. Pekala divided participant scores from prior research (Pekala and Kumar, 1984) into 13 groups according to their Harvard Group Scale of Hypnotic Susceptibility scores. pHGS was computed using the regression equation that was calculated in Pekala and Kumar (1987); paired t-tests were then carried out comparing eyes closed sitting quietly with hypnosis using pHGS scores as the dependent variable. This showed that mean pHGS scores
were significantly higher during hypnosis for all subjects scoring 4 or above. High hypnotisables (Harvard Scale 10 and above) averaged pHGS > 7.0 during hypnosis, with none averaging pHGS > 7.0 during the eyes closed sitting quietly condition. A further later study (Pekala and Forbes, 1988) found equivalent evidence to support the cut-off of pHGS = 7.0 for a high hypnoidal state.

Percentile values for the Harvard induction (in Pekala, 2009, referring to the study in Pekala and Forbes, 1997), indicate that during hypnosis we might expect 25% of participants to attain pHGS > 7.10, whilst the lower quartile range would extend below pHGS = 4.81. The highest 10% of scores would be above approximately pHGS = 7.84, the lowest 10% below pHGS = 3.44. It is also clear that hypnosis generates a much wider overall range of hypnoidal state scores than other conditions; this is not only the case for sub-groups during hypnosis (see trance tables in Appendix B) but also for hypnosis itself. Percentile score tables in Pekala (2009: 39) show hypnoidal state during hypnosis as ranging from pHGS = 1.84 to 9.44 (n = 184) with a broadly normal distribution of scores (slightly negatively skewed) (Pekala 2009: 40). In contrast, whereas a condition like progressive relaxation can generate a higher mean for a whole group (pHGS = 6.12) it does not interact with susceptibility in the same way, resulting in a far narrower range of sub-group means (see Pekala and Forbes, 1988).

If charismatic leadership oratory has similar hypnoidal effects to those experienced by high hypnotisables during hypnosis, there will be a mean score of above pHGS 7.00 for the participant group as a whole. This is a benchmark used in previously published peer-reviewed research comparing hypnosis and fire-walking (Pekala and Ersek, 1992-1993). Furthermore, if charismatic leadership oratory were interacting with susceptibility types in a similar way to hypnosis there would be a wider range of means than in the two control conditions with a normal distribution of scores.

The percentage of participants attaining a high hypnoidal state during charismatic leadership oratory in the present study – range of means and distribution

The number of participants with a high hypnoidal state score during the charismatic leadership speech was calculated and compared to the benchmark
cut-off for a high hypnoidal state (the level of hypnoidal state that might be considered commensurate with the average experience of highly hypnotisable people during hypnosis (pHGS = 7.0)) (Pekala, 1991). Ten participants (8.26%) reached a hypnoidal state that was higher than the benchmark for a high hypnoidal state (pHGS = 7.0). A total of 41 participants (33.9%) attained a hypnoidal state score during the charismatic leadership speech that was higher than the highest score for the baseline control condition (eyes open sitting quietly) (pHGS = 5.74) and 19 (15.7%) attained a higher hypnoidal state score than the highest score in the pseudo attention placebo condition (archive film) (pHGS = 6.50).

Another way to compare trance depths to prior hypnosis research is to look at the various thresholds for percentile value attained during hypnosis and compare these to those in the present study. Table 6.6 does this by first illustrating the depth of trance thresholds for the highest 10% of participants (pHGS >7.84), upper quartile (pHGS > 7.10) and lower quartile (pHGS < 3.44) during one hypnosis study (Pekala, 2009). In the next three columns the same thresholds are shown for the three conditions in the present study: eyes open sitting quietly, archive film and charismatic leadership oratory, respectively.

<table>
<thead>
<tr>
<th>Percentile value during hypnosis (Pekala, 2009)</th>
<th>pHGS threshold associated with this percentile level during hypnosis (Pekala, 2009)</th>
<th>Percentage attaining same pHGS sitting quietly with eyes open (Present study)</th>
<th>Percentage attaining same pHGS whilst watching archive film (Present study)</th>
<th>Percentage attaining same pHGS during charismatic leadership oratory (Present study)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest 10%</td>
<td>&gt; 7.84</td>
<td>0%</td>
<td>0%</td>
<td>0.83%</td>
</tr>
<tr>
<td>Upper quartile</td>
<td>&gt; 7.10</td>
<td>0%</td>
<td>0%</td>
<td>7.43%</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>&lt; 4.81</td>
<td>78.5%</td>
<td>59.5%</td>
<td>44.62%</td>
</tr>
<tr>
<td>Lowest 10%</td>
<td>&lt; 3.44</td>
<td>28.9%</td>
<td>16.5%</td>
<td>11.57%</td>
</tr>
</tbody>
</table>
In the case of the two control conditions there were no participants with trance depths above the thresholds for the highest 10% or upper quartile during hypnosis. However, 0.83% of participants crossed the hypnosis highest 10% 'during hypnosis' threshold (pHGS > 7.84) and 7.43% crossed the upper quartile threshold of pHGS > 7.10 (Table 6.6).

As the trance tables (Appendix B) illustrate, widened range of trance depth (pHGS scores) is also a characteristic of hypnosis. In relation to the range of individual mean scores, there was a wider range of hypnoidal state scores during charismatic leadership oratory (range = 5.98, pHGS = 2.06 – 8.04) than both the eyes open sitting quietly condition (range = 4.51, pHGS = 1.23 – 5.74) and the archive film (range = 4.23, pHGS = 2.27 – 6.50). However, the range of means for the speech condition was not as great as is reported in Pekala (2009), 79% of the range associated with hypnosis (range = 7.60, pHGS = 1.84 – 9.44 (Pekala, 2009). Nonetheless, the highest hypnoidal state attained by an individual during the charismatic speech (pHGS = 8.04) was at a level that places it at sten 10 of the trance tables and above the mean scores attained by Harvard 10, 11 and 12 sub-groups according to Pekala (1991: 321). The lowest depth of trance during charismatic leadership (pHGS = 2.06) is at sten 1 in the table and below the mean for Harvard sub-groups 0, 1 and 2.

A further comparison to the percentile tables given in Pekala (2009: 39, from the study in Pekala and Forbes, 1997) appears to confirm this widening of range. Specifically, in the present study, hypnoidal state during oratory (pHGS = 2.08 – 8.04) extended from the 0.5th to 88th percentile during hypnosis.

**6.5.5 Assessment of the effects of several potential confounding variables (speech familiarity, speech sympathy and age)**

Assessments were made of the relationships between speech hypnoidal state and three variables (speech familiarity, speech sympathy and age) using two tests of bivariate correlation (parametric for speech familiarity and age and nonparametric from speech sympathy). A comparison of male and female mean pHGS during the charismatic speech also took place. Familiarity with and sympathy with the views expressed in the speech were both measured
using a 7-point Likert scale (0 = not familiar, 6 = completely familiar; 0 = not sympathetic, 6 = completely sympathetic).

**Preliminary assumption testing**

Preliminary assumption testing found that speech familiarity and age were both satisfactory in terms of the assumptions of normality, linearity, homoscedasticity of residuals and the absence of outliers necessary for the use of Pearson’s Product Moment Correlation Coefficient. Prior assessment had already showed that charismatic leadership speech pHGSs met the first three of these assumptions. It also met the assumption of homoscedasticity as well as being free of outliers. Speech sympathy was strongly negatively skewed (skewness = -2.26; kurtosis = 5.05), with people much more sympathetic than not to the speech content. Despite there being a range of scores (2–6), with increasing frequency as sympathy scores increase, there was a cluster of low-score outliers and transformation was unable to improve the data sufficiently for the use of a parametric test. Relationship to speech pHGS was therefore assessed using a nonparametric equivalent (Spearman’s Rank Correlation Coefficient).

**Analyses of the potential confounding variables of speech familiarity and sympathy with the speech content**

There were no significant correlations between charismatic leadership oratory pHGS and any of the three variables that were assessed: speech familiarity ($r = .0003$, $p = .980$ (two-tailed)), speech sympathy ($r_s = .40$, $p = .66$ (two-tailed)) or age ($r = .025$, $p = .780$ (two-tailed)).

**Discounting gender and nature of employment role as potential confounding variables in relation to assessments of the effect of charismatic leadership oratory on mean trance depth**

At this point, it also seemed appropriate to assess if there were any significant differences between males and females and those participants whose job role brought them directly into contact with clients (education departments in governments, regional or local education authorities, schools or teachers) compared to non-client facing and essentially back-office support staff. The assessment of gender was important because some prior research has
reported occasional gender differences on some PCI variables (Pekala, 1991). Further, there was a strong gender imbalance within the company population and in the sample that was used, although there is no evidence to support gender differences in any PCI hypnosis-related studies or in relation to hypnoidal state during other conditions, so no difference was anticipated. Selection bias might also have been an issue in relation to the nature of participants’ job roles, with those participants engaged more directly in education-related activities possibly more open to influence, as a result of the content of the speech collected, compared to back-office support staff whose roles would perhaps be similar in a profit-making commercial organisational setting.

Table 6.7 shows the descriptive statistics for hypnoidal state for the three conditions in the present study by gender. Independent-samples t-tests were conducted to compare the hypnoidal state scores for each of the three conditions. Because there was equity of variance between groups, the imbalance of sample size was accepted. There was no significant difference in scores for males and females for any of the three conditions: eyes closed sitting quietly (t(119) = -0.43, p = .677 (two-tailed)), archive film (t(119) = -1.05, p = .295)) and charismatic leadership oratory (t(119) = 0.12, p = .988 (two-tailed)).

<table>
<thead>
<tr>
<th>Condition</th>
<th>Gender</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>Males</td>
<td>38</td>
<td>3.90</td>
<td>0.86</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>3.98</td>
<td>1.05</td>
<td>0.16</td>
</tr>
<tr>
<td>Archive film</td>
<td>Males</td>
<td>38</td>
<td>4.34</td>
<td>0.90</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>4.55</td>
<td>1.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Charismatic speech</td>
<td>Males</td>
<td>38</td>
<td>5.09</td>
<td>1.27</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>5.09</td>
<td>1.39</td>
<td>0.15</td>
</tr>
</tbody>
</table>

To assess the potential effect of job role on trance depth scores, as a first step the 11 occupational codes (see Appendix H) were categorised into their respective broadly client-facing and non-client facing designations. Table 6.8
illustrates the descriptive statistics related to depth of trance for each of these sub-groups during the present study conditions.

### Table 6.8: Hypnoidal state score means for employment type during each of the three present study conditions (n = 121)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Employee</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>Client</td>
<td>61</td>
<td>4.11</td>
<td>0.97</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-client</td>
<td>60</td>
<td>3.81</td>
<td>1.00</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Archive film</td>
<td>Client</td>
<td>61</td>
<td>4.54</td>
<td>0.90</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-client</td>
<td>60</td>
<td>4.44</td>
<td>1.15</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charismatic speech</td>
<td>Client</td>
<td>61</td>
<td>5.16</td>
<td>1.24</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-client</td>
<td>60</td>
<td>5.01</td>
<td>1.46</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As above, independent-samples t-tests were conducted to compare the hypnoidal state scores for each of the three conditions. There was no significant difference in scores for client-facing compared to non-client-facing employees and for males compared to females in any of the three conditions: eyes closed sitting quietly (t(119) = 1.71, p = .089 (two-tailed)), archive film (t(112) = 0.53, p = .601 (two-tailed)) and charismatic leadership oratory (t(119) = 0.59, p = .557 (two-tailed)).

### 6.6 Discussion

**Does charismatic leadership oratory deepen trance (Hypothesis A1)?**

Predicted Harvard Group Score (pHGS) is thought to represent a general measure of trance depth, or hypnoidal state. There was a statistically significant difference between the depth of trance attained by participants during charismatic leadership oratory compared to both the baseline control condition and archive film. The archive film condition used content intended to act as a pseudo attention placebo (e.g. crowds at the speech location on the same day as the speech, prior to its delivery) as well as seeking to control for watching the film alone. That the mean hypnoidal state for charismatic leadership oratory was higher again than the archive film mean suggests that
the speech itself was indeed having a genuine amplificatory hypnoidal effect, although it is worth noting that the archive film also increased hypnoidal state to some degree. Converting the findings to effect size (Cohen, 1988; Morris and DeShon, 2002) showed that oratory on film has a large effect on trance depth compared to a resting state of quietness (\(d_z = 0.80\) (\(d = 0.95\))). A moderate effect on trance depth was found when the speaker was added to film showing crowds arriving and demonstrating, prior to the speech (\(d_z = 0.51\) (\(d = 0.50\))). The archive film alone appeared to deepen trance by a moderate amount (\(d_z = 0.42\) (\(d = 0.52\))).

With such a famous leadership speech (and the nature of the content) there was also always the possibility that hypnoidal state score results could be confounded by factors such as age (particularly where people were old enough to remember the speech taking place in 1964), participant familiarity with the speech and their pre-existing sympathy with the speech content. Furthermore, an imbalance in gender in the sample, a result of a similar imbalance being present in the population group in the business from which the sample was drawn, meant that it was also important to assess if there were any differences in gender associated with hypnoidal state during the speech. Results, however, show that trance depth during charismatic leadership oratory appears unaffected by age, familiarity, gender or sympathy with the speech.

Taking the above into account, increase in hypnoidal state for the speech condition can therefore be said to support the hypothesis that charismatic leadership oratory deepens trance and that people generally experience greater trance depth during charismatic leadership speeches compared to ordinary everyday states of consciousness (such as sitting quietly, watching television content or a film). This could be taken, in itself, as an explanation of the frequently hypothesised relationship between charismatic leadership oratory and hypnosis, particularly if, historically, some individuals familiar with the feeling of entering trance during hypnosis were aware of their trance depth being increased during a speech and shared this with others, this awareness eventually entering the popular mind and explaining the association. Alternatively, bearing in mind the growing evidence for the heritability of hypnotic susceptibility and the tendency to enter an altered state, there might
also be a more inherent trait relationship at play (a notion that will be discussed in more detail in Chapter 11). However, for such a theory to stand, more evidence for distinct levels and types of susceptibility with parallels to those found in hypnosis needs to be established. These are areas that relate to Propositions B and D, and which will be explored further in Chapters 7 and 9.

In any case, that there is an apparent relationship between the effects of a world-class charismatic leadership speech and depth of hypnoidal state is remarkable. Arguably, alongside the neurophysiological evidence in Schjoedt and colleagues (2010) this provides the first empirical controlled evidence for the associations made between charisma, related group processes and hypnosis, associations that, as we have seen, have permeated the literature for many years (Bryman, 1992; Fishman, 1964; Freud, 1921/2001; Kellerman, 2008; Le Bon, 1895/1947; 2002a), and most explicitly in relation to oratory by Estabrooks (1943/1957), Gardner and Avolio (1998), Harris (1979), Reed (1999) and Willner (1984).

**Is trance depth overall similar to that found for a whole sample during prior hypnosis research (Hypothesis A2)?**

If we discount the two uncharacteristically low hypnosis pHGS prior research whole sample means in the trance tables discussed above (Hutchinson-Phillips, Gow and Jamieson, 2007; Pekala, Kumar and Marcano, 1996), the present study did not appear to support the idea that charismatic leadership oratory deepens trance state to the same extent (depth) as hypnosis for a whole sample, although it should be noted that the hypnoidal state reached in the present study was close to the range obtained in prior hypnosis research (pHGS = 5.42 – 5.97). Specifically, confidence interval data for the PCI-Hypnotic Assessment Protocol mean (pHGS = 5.42) overlaps with the confidence interval lower and upper bounds for the charismatic leadership speech in the present study.

This implies that if a sufficient number of studies took place comparing charismatic leadership oratory directly with the PCI-Hypnotic Assessment Protocol there might be some occasions in which a charismatic leadership speech could attain a similar depth of trance.
Is trance depth during charismatic leadership oratory equivalent to that of high hypnotic susceptibility individuals during hypnosis (Hypothesis A3)?

In relation to the experience of highly hypnotisable individuals during hypnosis (pHGS > 7.0), documented in prior PCI studies, the overall depth of trance attained during the charismatic speech for the whole sample was not comparable. This is perhaps not a surprising finding, bearing in mind that, due to the broadly normal distribution of hypnotic susceptibility in the general population (Hilgard, 1965), only a relatively small proportion are likely to attain such levels even during hypnosis. Nonetheless, as with fire-walking in a previous study (Pekala and Ersek, 1992/1993), the findings confirm empirically that a charismatic leadership speech is not a ‘hypnotic’ experience per se, if ‘hypnotic’ is defined as the experience of high hypnotisables during hypnosis.

Does charismatic leadership oratory increase the depth and at the same time widen the range of hypnoidal response, as in hypnosis (Hypothesis A4)?

The notion of follower type and the possible existence of a range of levels of follower susceptibility (Willner, 1984; Shamir and Howell, 2005; Campbell et al., 1996; Freemasser, 1976) and engagement (Kellerman, 2007; 2008) has increasingly become a focus of leadership theory and research (Northouse, 2004). In particular, Klein and House (1995), who, as noted above, also make use of the fire metaphor used by Popper (2002a), specifically point to the need to explore and understand what factors may predict a person’s response to the charismatic. The pHGS’s unique construction, and established levels of validity and reliability in relation to hypnosis, provided an opportunity to explore whether there appear to be different levels of follower response to charismatic oratory that might be related to a hypnoidal state. With regard to Proposition A, as we have already noted on several occasions, only a proportion of high hypnotisables on average respond to hypnosis by experiencing a deep trance state (pHGS > 7.0). Finding a proportion of individuals responding to oratory in a similar way could be important for the debate on follower types, particularly
where this debate has referenced itself to hypnosis in relation to some types (e.g. in Kellerman (2008), with regard to ‘diehards’).

In total 10 participants out of the 121 in the present research attained a depth of trance in response to charismatic leadership oratory above the threshold considered to be a high hypnoidal state pHGS > 7.0 (Pekala, 1991). One third of participants (33.88%) attained a speech hypnoidal state score that was greater than the highest score in the baseline control condition (pHGS = 5.74). Compared to hypnosis, however, less than 1% of participants attained the pHGS level that we might expect the top 10% to attain during hypnosis. In relation to the upper quartile hypnoidal state boundary for hypnosis, 7.43% of participants attained this (approximately 30% of the number during hypnosis).

Nonetheless, this is an important finding, as no participants attained these levels during either of the control conditions, with nearly four-fifths of the hypnoidal state scores for the eyes open sitting quietly condition, and over half those for the archive, below what would be the lower quartile for hypnosis.

Alongside this, scrutiny of the range of hypnoidal state scores experienced during charismatic leadership oratory reinforces the idea that there may be parallels with the underlying processes modulating consciousness during hypnosis (the upward refraction of hypnoidal mean and dispersion of range, referred to above in the introduction to this chapter), processes that are primarily a function of trait susceptibility. In detail, in relation to distribution and range of scores, hypnosis produces a wider range of hypnoidal scores than a baseline control condition (usually eyes closed sitting quietly) and produces a normally distributed response. Charismatic leadership oratory appears to share this feature, at least partially, with both a normal distribution of scores and a range of scores that is approximately 29% wider than for the archive film and nearly 26% wider than the baseline control condition. This sort of interaction could be because a range of follower types/susceptibility is mediating response to charismatic leadership oratory, as happens in hypnosis due to the existence of hypnotic types (Pekala, 1991; Forbes and Pekala, 1996; Pekala and Forbes, 1997) and hypnotisability. Chapter 9 describes other results from the present study which explore this possibility, statistically using K-means cluster analysis,
paralleling the approach used by Pekala and Forbes (1997) to identify hypnotic ‘types’ from PCI major dimension intensity scores.

Klein and House (1995), in using the fire metaphor to explain the complex relationship between the leader (the spark), the followers (the fuel) and the oxygen (the circumstances and context), propose the following: in certain circumstances, the effect of charismatic leadership may not be homogeneous but variable. In other words, there may be ‘pockets’ of fire that exist independently, or which could possibly result in spreading the effect.

If the small group of individuals who attain high hypnoidal states in response to charismatic oratory type media and content were to find themselves closely connected, and in extended proximity to a highly charismatic leader (or charismatic ideal) it is perhaps not beyond the realms of possibility to suggest that this smaller group could become a ‘raging’ local pocket of fire whose behaviour might then lead to a wider social conformity effect within the general population. Others have also noted how a central group of core followers around a leader or charismatic philosophy could have greater effects on a whole population way beyond their actual numbers, as is encapsulated in the notion of a Crowd Crystal (Canetti, 1984; Jacobs, 1987):

A Crystal consists of probably no more than a hundred people in a national system and often considerably less in a social and religious one . . . from within the Crystal the most talented and charismatic individual emerges as the Master of Masters. (Jacobs, 1987: 62-63)

Thus, it might also be the case that the ‘purpose’ of a charismatic leadership speech within the ‘fire’ (Klein and House, 1995; Popper, 2002a) process could be to help to select the highly susceptible. These could in turn be those who have experienced a significant alteration to the structure of consciousness, and people who might then step forward to become part of a leader’s inner circle – as is the case during the selection mechanisms and processes of stage hypnosis. The author discusses this possibility further in Chapter 11, in the light of the results from all four Propositions (A–D).
How does trance depth during charismatic leadership oratory compare to other conditions from previous research (Hypothesis A5)?

Using the trance tables in Appendix B (n = 7,527), the hypnoidal effects of charismatic leadership oratory were found to be at sten 6 (pHGS range = 4.96 – 5.53) (a ‘moderate’ hypnoidal state according to Pekala’s thresholds). Other conditions that generate a similar level of trance (sten 6) for a whole sample include: meditation at home, before (pHGS = 5.01) and after a Scalar room (ritual environment) experience (pHGS = 5.12) (Löffler, 2007); and all the studies that have looked at shamanic practice. These studies include: lower world shamanic journeying (pHGS = 5.04) (Rock et al., 2008b), shamanic journeying followed by 15 minutes of drumming (pHGS = 5.20) when followed by ganzfeld (5.25) (Rock et al., 2008a); and shamanic journey with (pHGS = 5.26) and without (pHGS = 4.96) imagery suggestions (5.26), as opposed to free visualisation (pHGS 4.96) (Rock, Casey and Baynes, 2006). The hypnoidal state for charismatic oratory was also similar to the recalling of a religious experience (pHGS = 5.27) (Wildman and McNamara, 2010), biodynamic cranio-sacral osteopathy (5.28) (Nyul, 2008) and fire-walking (pHGS = 5.39) (Pekala and Ersek, 1992-1993).

In relation to hypnosis, the depth of trance during the PCI-Hypnotic Assessment Protocol appears just at the upper boundary of sten 6 (5.42) (Pekala et al., 2010b). However, all other hypnosis large study whole group means (which use Harvard induction rather than the PCI-Hypnotic Assessment Protocol (Pekala, 1991; Pekala and Forbes, 1997; 1998; Pekala and Kumar, 1984; Pekala, Steinberg and Kumar, 1986) are at sten 7 (pHGS range = 5.59 – 6.12), as is progressive relaxation (pHGS = 6.12). The highest whole group means are for partial epileptic seizure (pHGS = 6.18, sten 8) (Johanson et al., 2008), Scalar room conditioned space meditation (pHGS = 6.23) (Löffler, 2007); and the depth of trance attained by mediums carrying out discarnate readings (pHGS = 7.47, sten 10).

That oratory trance depth (sten 6) seems to behave in a similar way to hypnosis (increasing and widening trance depth) but is more akin to depth during the PCI-Hypnotic Assessment Protocol (sten 6) than the Harvard Induction (sten 7)
is perhaps not surprising. The PCI-Hypnotic Assessment Protocol is less focused on the experience of responding to constant specific series of motor and imaginative suggestibility tests than the Harvard protocol. Instead, there is more emphasis on imaginative suggestion through the use of a core suggestion to experience a dream in which there is significant person choice in relation to how to respond:

Tell the client that during the hypnotic induction you will first relax them with a relaxation protocol called a ‘body scan’. You will then try to move them into hypnosis by counting from ‘10’ to ‘1’. After that you will take them on a fantasy journey to a vacation place. Ask them to think of a place, e.g. the beach, Mexico, the mountains, etc. they would like to go visit (they do not have to tell you beforehand where they will go). When they go on vacation via a hypnotic dream, they want to just relax and experience it as best they can. (Pekala, Kumar and Maurer, 2005: 24)

In contrast, imaginative suggestions in the Harvard induction (sten 7) are aimed at the production of a particular narrow hallucination. For example:

I am sure that you have paid so close attention to what we have been doing that you have not noticed the fly which has been buzzing about you . . . But now that I call your attention to it you become increasingly aware of this fly which is going round and round about your head . . . nearer and nearer to you . . . buzzing annoyingly . . . hear the buzz getting louder as it keeps darting at you. (Shor and Orne, 1962: 12)

Greater openness of response is also characteristic of the suggestions in shamanic journeying, as illustrated in Rock, Casey and Baynes (2006) (also yielding a sten 6 hypnoidal state):

Visualise an opening into the earth that you remember from some time in your life. It can be an opening that you remember from your childhood, or one you saw last week, or even today. Any kind of entry into the ground will do – it may be a hole made by a burrowing animal, a cave, a hollow tree stump, a spring, or even a swamp. It can even be a man-made opening. The right opening is one that really feels comfortable to you, and one that
you can visualise. Spend a couple of minutes seeing the hole without going in it. Note its details clearly [Harner 1990:32]. (Rock, Casey and Baynes, 2006: 69)

Equally, although full of high levels of imagery, there is no direct instruction to experience the imagery in Martin Luther King’s speech and many options are provided throughout. For example:

My country ‘tis of thee,
Sweet land of liberty,
Of thee I sing:
Land where my fathers died,
Land of the Pilgrim’s pride,
From every mountainside
Let freedom ring!

And if America is to be a great nation, this must become true. So let freedom ring from the prodigious hilltops of New Hampshire. Let freedom ring from the mighty mountains of New York. Let freedom ring from the heightening Alleghenies of Pennsylvania! Let freedom ring from the snow-capped Rockies of Colorado! Let freedom ring from the curvaceous slopes of California! (MacArthur, 1996: 490-91)

Validating the control conditions in the present study, in relation to standard PCI research control conditions, all of the eyes open sitting quietly whole group means (the same baseline control used in the present study) are lower than charismatic leadership oratory (pHGS range = 3.96 – 4.34, sten 4–5), as is the pseudo attention placebo condition (archive flim) from the present study (pHGS = 4.50, sten 5). One eyes closed sitting quietly condition was found to be at the very bottom boundary of sten 6 (pHGS = 4.96) (Rock et al., 2008b); however, all other studies indicate that this condition usually sits between sten 1 and sten 5 (pHGS range = 2.29 – 4.93). Other lower hypnoidal states at sten 5 are indicated in relation to monotonous drumming alone (pHGS = 4.82) (Woodside, Kumar and Pekala, 1997), and one group meditating at home, pre-Scalar room in the Löffler (2007) study. Conditions that were lower again in relation to
hypnoidal state (at sten 4) included monotonous drumming with trance postures (pHGS = 4.09) and with trance postures and suggestions (pHGS = 4.23), the recall of a happy experience (pHGS = 4.30) and an ordinary experience both from Wildman and McNamara’s 2010 study and hypnoidal state during a casual telephone conversation (Rock and Beischel, 2008).

6.7 Conclusions in relation to Proposition A

This chapter sought to address the first of the four propositions presented in Chapter 1:

**Proposition A – Trance depth during a charismatic leadership speech is affected in a similar way to that found during prior hypnosis studies and research into other conditions associated with the term altered state of consciousness**

Charismatic leadership oratory deepens trance as measured by predicted Harvard Group Scores. The trance depth attained is not, however, as high as would be expected during the Harvard induction but does approach levels associated with the hypnotic induction that is embedded within the PCI-Hypnotic Assessment Protocol. Because overall trance depth for the sample was not as high as that experienced by high hypnotic susceptibility individuals, it appears that the overall response in the general population to charismatic oratory may not be sufficient to be described as a ‘hypnotic’ one, if we define hypnotic as the experience of high hypnotisables during induction. A similar conclusion was drawn by Pekala and Ersek in relation to fire-walking (Pekala and Ersek, 1992/1993). However, it is also the case that not all participants attain a deep trance during hypnotic induction, with only a certain percentage of individuals found to enter such a state in proportions akin to the normal distribution of hypnotic susceptibility in the general population (Hilgard, 1965). In the case of the present study, no less than 8.26% of individuals entered a deep trance state, with one third of participants experiencing deeper trance and hypnoidal states that were greater than the highest score for any participants during the baseline control condition. In addition, it appears that there is a widening of range of hypnoidal state during charismatic leadership oratory, a feature that has also been found during hypnosis.
These findings overall support the idea that charismatic leadership might also be a sub-domain of a broader domain of suggestion (Kirsch et al., 2011), albeit a weaker form of suggestion than hypnosis, in terms of the effects that are generated. The evidence in this chapter for a range of trance depth scores and a sub-group of individuals who entered a deep trance state further suggests the possibility of the existence of follower types which may parallel types of hypnotic susceptibility individuals. This will be explored in more depth in Chapter 9, using the same method deployed by Pekala and colleagues in their identification of nine hypnotic types.

The next chapter explores the relationship between the trance depth scores discussed above and imaginative suggestion as operationalised by the adaptation of the imaginative suggestibility item from the PCI-Hypnotic Assessment Protocol, an adaptation of the self-reported hypnotic depth item and measures of expectancy.
Chapter 7 – Main Study B: Relationships between trance depth during charismatic leadership oratory and adapted PCI-Hypnotic Assessment Protocol items

7.1 Areas of the research design made use of in Main Study B

In relation to the research design discussed in Chapter 5, Main Study B made use of data from those areas of the design which are indicated in blue in Figure 7.1. Areas in grey did not contribute to the analysis in Main Study B.

Figure 7.1: Areas of the research design which apply to the analyses in Main Study B
7.2 Introduction: the PCI-Hypnotic Assessment Protocol

7.2.1 Extending the PCI’s capabilities using the Hypnotic Assessment Protocol

In order to extend the PCI’s capabilities in exploring various theories about the nature of hypnosis and trance, Pekala and colleagues designed a hypnotic assessment protocol (Pekala, Kumar and Maurer, 2005). This protocol includes pre-assessment questions, an induction procedure and hypnosis, followed by a post-assessment questionnaire. Finally, participants complete the PCI in reference to a two-minutes sitting quietly episode towards the end of the hypnosis. The pre- and post-assessment items aim to operationalise a number of areas and theories that are frequently discussed in relation to hypnosis and trance (see Pekala, Kumar and Maurer, 2005; Pekala et al., 2006; Pekala, 2009; Pekala et al., 2010a; b; c: Pekala and Kumar, 2007).

An in-depth explanation of how to use the PCI-Hypnotic Assessment Protocol in clinical practice is given in Pekala (2009). Figure 7.2 shows the structure of the PCI-Hypnotic Assessment Protocol.

**Figure 7.2: Structure of the PCI-Hypnotic Assessment Protocol**

With regard to adaptations made for use in Main Study B, Figure 7.3 illustrates the use of PCI-Hypnotic Assessment Protocol adapted pre- and post-assessment items around the charismatic speech agreed with Dr Ronald J. Pekala.
The pre- and post-assessment items most relevant to the present study include self-reported hypnotic depth (how deeply hypnotised a person thinks that they have been), expectancy (their pre-induction expectations in relation to hypnotic depth) and imagoic suggestibility (the vividness of imagery experienced in relation to suggestions to experience a dream in the middle of the induction).

In conjunction with the measurement of hypnoidal state (calculated from PCI questionnaire major and minor dimensions intensity levels, discussed in the previous chapter), Pekala and Kumar (2007) argue that the PCI-Hypnotic Assessment Protocol is able to operationalise Holroyd’s research and theories of hypnosis (Holroyd, 2003) which propose an interactive interrelationship between trance depth/altered state effects and suggestibility.

As Pekala (2009) puts it when making the case for the PCI’s multiple domain approach:

... [as] Wagstaff (1981), Baker (1990), Kihlstrom (2003), Woody and colleagues (Woody, Barnier and McConkey, 2005; Woody and McConkey, 2003) and many others (Barabasz and Watkins, 2005; Lynn and Rhue, 1988; Lynn and Sherman, 2000; Killeen and Nash, 2003; Sheehan and McConkey, 1982) have theorised, 'hypnotism' appears to subsume a number of different domains (Brown and Fromm, 1986), the activation of a particular domain(s) leading to the perception of being 'hypnotised'. (Pekala, 2009: 4)
The four major domains mapped by the PCI-HAP include trance state, suggestibility, expectancy, and self-perceived hypnotic depth. (Pekala, 2009: 4)

7.2.2 Self-reported depth as a function of imagoic suggestibility and trance depth

The PCI-Hypnotic Assessment Protocol item self-reported hypnotic depth reflects procedures used for estimating hypnotic depth for more than 70 years (Pekala et al., 2006). As Pekala and Kumar (2007) note in a later discussion of this variable:

Clinicians often employ a ‘1’ to ‘10’ scale (‘1’ = ‘your normal, waking state’, ‘10’ = ‘the most deeply hypnotised you can imagine’) and ask their clients to estimate how deeply hypnotised they feel themselves to be at a particular moment in time. (Pekala and Kumar, 2007: 184)

The imagoic suggestibility item in the PCI-Hypnotic Assessment Protocol seeks to measure notions of suggestibility proposed by a number of writers. Kirsch and Braffman (1999), in particular, emphasise the role of imagination in suggestibility, with hypnotic suggestibility seen as the level of responsiveness to suggestion after induction and non-hypnotic suggestibility as the parallel level of responsiveness without induction. Specifically, they define imaginative suggestion as ‘requests to experience an imaginary state of affairs as if it were real’ (Kirsch and Braffman, 2001: 59) with imaginative suggestibility related to the level of success a person has in doing so.

In terms of the interrelationship between these areas and depth of trance, Pekala and colleagues (2006) demonstrated that self-reported hypnotic depth can be predicted from the imagoic suggestibility item in the PCI-Hypnotic Assessment Protocol and hypnotoidal state (predicted Harvard Group Score, previously discussed in Chapter 6). Specifically (Pekala et al., 2006), there is a positive relationship between how deeply hypnotised a person perceives themselves to be (self-reported hypnotic depth) and their trance depth (calculated using the predicted Harvard Group Score regression equation) ($r(180) = .57$, $p < .001$). There is a similar relationship between self-reported depth and imagoic suggestibility (amount of imagery in response to suggestion).
Multiple regression has indicated that during hypnosis self-reported depth is predicted by trance depth and imagoic suggestibility ($R^2(180) = .52$, $p < .0005$). In their paper Pekala et al. (2006) graph the results onto a three-dimensional plot with imagoic suggestibility on the x-axis, hypnoidal state on the y-axis and self-reported hypnotic depth (srHD) on the z-axis (Figure 7.4). The pattern revealed, they suggest, indicates that neither a high hypnoidal state (srHD > 7.0) nor a high imagoic suggestibility score (ISS > 7.0) is associated with a similarly high srDH score (srDH > 7.0), if the other variable has a score that is 3.0 or lower.

**Figure 7.4: Self-reported hypnotic depth as a function of imagoic suggestibility and hypnoidal state (Pekala et al., 2006) (n = 180)**


Pekala and colleagues (2006) argue this implies that, although both imagoic suggestibility and hypnoidal state each individually accounted for significant portions of the variance (based on their high correlation coefficients with self-reported hypnotic depth scores), each appears to moderate the level of self-reported hypnotic depth, more so if the particular score on the other variable is
low. A replication of the study above (Pekala et al., 2010b) produced similar results, indicating similarly positive correlations between self-reported hypnotic depth and hypnoidal state \((r(123) = .48, p < .001)\), self-reported hypnotic depth and imagoic suggestibility \((r(123) = .68, p < .001)\) and imagoic suggestibility and hypnoidal state \((r(123) = .36, p < .001)\).

### 7.2.3 Relationships between self-reported depth, hypnoidal state, expectancy and motor suggestibility

In relation to motor suggestibility, there are two PCI-Hypnotic Assessment Protocol items: a finger response item and an eye catalepsy-related question. Expectancy is measured by asking participants to predict how deeply hypnotised they expect to become before induction.

Table 7.1: The relationships between self-reported hypnotic depth, expectancy and the two PCI-Hypnotic Assessment Protocol motor suggestibility related items (Pekala et al., 2010b)

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>1. Self-reported hypnotic depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hypnoidal state (pHGS)</td>
<td>.72***</td>
<td>(.68***))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Finger response item</td>
<td>.20*</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(.06)</td>
<td>(-.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Eye catalepsy item</td>
<td>.15</td>
<td>.30**</td>
<td>-.26*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.45***))</td>
<td>(.30**))</td>
<td>(-.25*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Pre-hypnotic estimated hypnotic depth</td>
<td>.43***</td>
<td>(.19*)</td>
<td>(.18)</td>
<td>(.21*)</td>
<td></td>
</tr>
</tbody>
</table>

* = \(p < .05\), ** = \(p < .01\) *** = \(p < .001\)

Correlations with parentheses are from Pekala et al. (2010b); those without are from Pekala et al. (2006)

Table 7.1 shows the relationships between self-reported hypnotic depth, hypnoidal state, finger response, eye catalepsy and pre-hypnotic estimated hypnotic depth found in two pieces of prior PCI-Hypnotic Assessment Protocol research. In relation to expectancy, there is a positive relationship between expectancy (as is measured by pre-hypnotic estimated hypnotic depth) and self-reported hypnotic depth \((r(123) = .45, p < .001)\), hypnoidal state
relationships to finger response are less consistent, with a mixture of significant and non-significant relationships.

7.3 Proposition B and hypotheses related to the exploration of relationships with hypnoidal state

As discussed above, Dr Ronald J. Pekala gave permission to adapt some of the PCI-Hypnotic Assessment Protocol (Pekala, Kumar and Maurer, 2005) pre- and post-assessment item wording. This allowed for the investigation of the second proposition:

Proposition B – There are relationships between trance depth and PCI-Hypnotic Assessment Protocol measures during charismatic leadership oratory that are similar to those found during hypnosis

Making adaptations – for example by replacing the word ‘hypnotised’ with ‘influenced’ to assess self-reported depth and expectancy in the context of a leadership speech; and rewording the imagoic suggestibility item to ask participants about internal imagery experienced in response to metaphors and imagery used by the orator – made it possible to explore the following hypotheses:

- **Hypothesis B1** – There are positive relationships between adapted PCI-Hypnotic Assessment Protocol items similar to relationships found in hypnosis
- **Hypothesis B2** – A person’s perception of how deeply influenced they have been by a charismatic leadership speech is predicted by the amount of imagery they have experienced in response to the speech content and their depth of trance (paralleling the relationship between self-reported hypnotic depth, imagoic suggestibility and depth of trance during hypnosis)

Obviously, it was not possible to embed motor suggestions in the middle of the charismatic leadership speech as is done in middle of the PCI-Hypnotic Assessment Protocol hypnotic induction. Rather, drawing on the parallels between the charismatic leadership manipulation of crowds and the processes...
of stage hypnosis discussed in the literature review, two suggestibility tests used during stage hypnosis (identified for use in the present research during attendance on a stage hypnosis training course) were given to participants after all the research conditions had been experienced. Doing this allowed for exploration of a further hypothesis:

- **Hypothesis B3** – *There are positive relationship between motor suggestibility as assessed by stage hypnotists prior to the administration of an induction to volunteers, adapted PCI-Hypnotic Assessment Protocol items and depth of trance during oratory*

In the cases of **Hypothesis B1 – Hypothesis B3**, it was possible to use both inferential testing on present study results and make a descriptive comparison to results that used the same approach in prior PCI hypnosis studies.

### 7.4 Results

#### 7.4.1 Summary of the analytical approach taken with regard to Proposition B

SPSS Pearson’s Product Moment Correlation Coefficient and standard (simultaneous) multiple regression were used to assess relationships between adapted PCI-Hypnotic Assessment Protocol items and hypnoidal state scores. For completeness, the effect of potential confounding variables was analysed using partial correlation.

#### 7.4.2 The relationship between self-reported depth of influence, hypnoidal state and imagoic suggestibility during charismatic leadership oratory (Hypotheses B1 and B2)

**Preliminary assumption testing**

Hypnoidal state during charismatic leadership oratory had already been assessed for normality and found to meet this assumption. In order to meet the assumptions of normality, linearity and homoscedasticity of residuals prior to the use of multiple regressions, it was necessary to transform self-reported depth of influence scores, with a ‘reflect and square root transformation’.

Hypnoidal state (predicated Harvard Group (pHGS) and imagoic suggestibility scores met all assumptions and therefore were not transformed.
Following the transformation of self-reported depth of influence scores, additional preliminary assumption testing used SPSS Regression to look for multivariate outliers and suppressor variables (IVs that might enhance other IVs). The use of $p < .001$ for Mahalanobis distance found no multivariate outliers. The pattern of regression coefficients and correlations for each IV and the DV were scrutinised; this identified no suppressor variables. In addition, the residuals scatterplot and the Normality Probability Plot of the regression standardised residuals were inspected. There was a straight line relationship within the Normal Probability Plot, suggesting no major deviations from normality.

The scatterplot of the standardised residuals was found to be roughly rectangularly distributed, with most scores centrally concentrated (about the 0 point). As before, a graphic method was used to assess linearity and homoscedasticity between each pair of variables. This analysis similarly indicated a meeting of assumptions.

**Analysis of relationships**

There were large positive correlations for all interrelationships between the three variables that were tested: self-reported depth of influence and hypnoidal state ($r(121) = .55, p < .0005$ (one-tailed)), self-reported depth of influence and imagoic suggestibility ($r(121) = .61, p < .0005$ (one-tailed)) and hypnoidal state and imagoic suggestibility ($r(121) = .65, p < .0005$ (one-tailed)). All three variables indicated a greater relationship than .30, indicating that the further assumption of multicollinearity had been met.

With these three variables placed on a three-dimensional graph, paralleling the analysis in Pekala et al. (2006) with imagoic suggestibility on the x-axis, hypnoidal state on the y-axis and self-reported hypnotic depth on the z-axis (see Figure 7.5), a pattern emerges that suggests that hypnoidal state and imagoic suggestibility scores may predict self-reported depth of influence.

A standard (simultaneous) multiple regression explored the relationship between self-reported depth of influence (srDI) and imagoic suggestibility – with srDI as the dependent (construct) variable and hypnoidal state (predicted
Harvard Group Score) and imagoic suggestibility as independent (predictor) variables.

Figure 7.5: Self-reported depth of influence as a function of hypnoidal state and imagoic suggestibility (present study) (n = 121)

Table 7.2 displays the correlations between the variables, the unstandardised regression coefficients ($\hat{\beta}$) and intercept, standardised coefficients ($\beta$), semipartial correlations (sr$^2$), $R^2$, and adjusted $R^2$. $R$ for regression was significantly different from zero, $F(2, 118) = 40.93, p < .0005$ (one-tailed), with $R^2$ at .41. 95% confidence limits for $R^2$ from .29 to .54 were calculated using Steiger and Fouladi’s (1992) software R2 (Version 1.1). The adjusted $R^2$ value of .40 indicates that more than a third of the variability in self-reported depth of influence is predicted by hypnoidal state (predicted Harvard Group Score) and imagoic suggestibility. Both regression coefficients differed significantly from zero, therefore 95% confidence limits were calculated. The confidence limits for hypnoidal state were .034 to .18, and those for imagoic suggestibility were .053 to .13. Semipartial correlations calculated the amount by which $R^2$ might reduce if the equation omitted one of the independent variables. The sum of
the two significant independent variables \( .30^2 \) (imagoic suggestibility) + \( .21^2 \) (speech hypnoidal state) was calculated to determine the amount of \( R^2 \) attributable to unique sources (.15). The difference between \( R^2 \) and the unique variance (.41 – .15) indicated that the two independent variables in combination contribute .26 in shared variance. In other words, 26% of the variance in the model was due to the combination of hypnoidal state and imagoic suggestibility scores and 15% was due to the unique contribution of the predictor variables.

Table 7.2: Standard (simultaneous) multiple regression of hypnoidal state (pHGS) and imagoic suggestibility on self-reported depth of influence: full sample (n = 121)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Self-reported depth</th>
<th>pHGS</th>
<th>Imagoic suggestibility</th>
<th>( B )</th>
<th>( \beta )</th>
<th>( sr^2 ) (unique)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pHGS</td>
<td>.55*</td>
<td>.11</td>
<td>.27</td>
<td>.042</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imagoic suggestibility</td>
<td>.61*</td>
<td>.65*</td>
<td>.093</td>
<td>.43</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>Intercept = -3.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Means</td>
<td>-2.03</td>
<td>5.09</td>
<td>5.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard deviations</td>
<td>0.53</td>
<td>1.34</td>
<td>2.51</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* p < .0005 (two-tailed)

\( R^2 = .41^a \)

\( Adjusted R^2 = .40^a \)

Altogether, 41% (40% adjusted) of the variability in self-reported depth of influence was predicted by knowing scores on the two independent variables. The size and direction of the relationship suggest that people who experience the higher level of hypnoidal state (or trance) in combination with higher imagoic suggestibility (internal visual imagery experience) in direct response to an orator’s suggestions are more like to report higher levels of depth influence than people who experience lower levels of hypnoidal state and imagoic suggestibility. Between the two predictor variables, however, imagoic suggestibility is much more important than hypnoidal state, as is indicated by the squared semipartial correlations (imagoic suggestibility = .19; hypnoidal
state = .042) in relation to individual contribution to the model. This said, as is indicated by the analysis of unique predictor variability compared to shared variability above, it is the combination of increased hypnoidal state (trance depth) and increased imagoic suggestibility scores (26%) that makes the most important contribution to how deeply influenced a person feels they have been in response to charismatic oratory.

7.4.4 Relationships between expectancy, motor suggestibility and self-reported depth of influence, hypnoidal state and imagoic suggestibility during charismatic leadership oratory (Hypothesis B3)

Preliminary assumption testing

The same approaches as above were used to assess normality for the additional variables analysed below. Pre-speech expectancy and motor suggestibility scores met the assumptions of normality, linearity and homoscedasticity, as had hypnoidal imagoic suggestibility and pHGS in preliminary assumption testing (see above).

The analysis below used the same transformed self-reported depth scores.

Analysis of relationships

There was a strong positive correlation between pre-speech expectancy and self-reported depth ($r(121) = .51, p < .0005$ (one-tailed)), a moderately strong correlation between expectancy and imagoic suggestibility ($r(121) = .37, p < .0005$ (one-tailed)), and a similarly moderate relationship between expectancy and hypnoidal state ($r(121) = .26, p = .002$ (one-tailed)). Although there was a moderately strong positive correlation between motor suggestibility and hypnoidal state ($r(121) = .27, p = .0005$ (one-tailed)) the relationships between motor suggestibility and self-reported depth was not significant ($r(121) = .11, p = .061$ (one-tailed)). In terms of the relationship between motor suggestibility and pre-speech expectancy, this showed a statistically significant but small positive correlation ($r(121) = .16, p = .046$ (one-tailed)). This was also case for the relationship between motor suggestibility and imagoic suggestibility ($r = .120, p = .047$ (one-tailed)).
7.4.5 Assessment of the potential effects of several possible confounding variables

To extend the analysis, and for completeness, a series of additional tests took place to assess the effect of possible confounding variables on self-reported depth and speech hypnoidal state. The archive film 'pseudo attention placebo' condition aimed to control for two potential confounding variables: a) the effect of watching a film; b) the effect of seeing crowd scenes and related political material (such as placards, marching etc.). Partial correlation employing archive film pHGS scores assessed the potential of these areas to confound the results. Similar tests took place using participant age and a measure of familiarity with the speech content.

Additional preliminary assumption testing prior to partial correlation

Preliminary assumption testing found that archive film pHGS scores, participant age and speech familiarity all met the assumptions of normality, linearity and homoscedasticity of residuals necessary for the use of partial correlation.

Analysis of partial correlation results

There was a strong, positive, partial correlation between self-reported depth of influence and imagoic suggestibility ($r(121) = .59$, $p < .0005$ (one-tailed)), with high levels of depth of influence associated with high levels of imagoic suggestibility. An inspection of the zero order correlation ($r = .61$) suggested that controlling for archive film hypnoidal state and the effects of watching black and white film and context-related content from the same date as the speech had very little effect on the strength of the relationship between these two variables. There was also a strong, positive, partial correlation between self-reported depth of influence and speech hypnoidal state score ($r(121) = .54$, $p < .0005$ (one-tailed)). Likewise, on inspection of the zero order correlation ($r = .55$), this effect also appeared largely unaffected when archive film effects were controlled for. Similar results were found for imagoic suggestibility and speech hypnoidal state ($r(121) = .61$, $p < .0005$ (one-tailed)). Once again comparison with the zero order correlation ($r = .65$) suggested that film watching and contextual content were having little effect on the variables.
Partial correlation similarly explored the relationship between the three variables, this time controlling for participant age. There were statistically significant, strong, positive, partial correlations between self-reported depth of influence and imagoic suggestibility ($r(121) = .61, p < .0005$ (one-tailed)), self-reported depth of influence and speech hypnoidal state ($r(121) = .55, p < .0005$ (two-tailed)), and imagoic suggestibility and speech hypnoidal state ($r(121) = .65, p < .0005$ (one-tailed)).

Again, assessment of the zero order correlations, compared to the partial correlations, for self-reported depth of influence and imagoic suggestibility ($r = .61$), self-reported depth of influence and speech hypnoidal state score ($r = .55$) and imagoic suggestibility and speech hypnoidal state scores ($r = .65$) indicated that age had virtually no effect on the strength of the relationships. Furthermore, there were no statistically significant zero order correlations for age and self-reported depth of influence ($r(121) = -.022, p = .40$ (two-tailed)), age and imagoic suggestibility ($r(121) = .020, p = .41$ (two-tailed)), or age and speech hypnoidal state score ($r(121) = .025, p = .39$ (two-tailed)).

Partial correlations controlling for the effect of familiarity with the speech prior to joining the research study were as follows: self-reported depth of influence and imagoic suggestibility ($r(121) = .69, p < .0005$ (two-tailed)), self-reported depth of influence and speech hypnoidal state score ($r(121) = .55, p < .0005$ (two-tailed)), imagoic suggestibility and speech hypnoidal state ($r(121) = .66, p < .0005$ (two-tailed)).

Zero order correlations, in parallel, indicated that this potentially confounding variable also has little effect on the strength of relationship for self-reported depth of influence and imagoic suggestibility ($r = .61$), self-reported depth of influence and speech hypnoidal state score ($r = .55$), or for imagoic suggestibility and speech hypnoidal state ($r = .65$). There was no statistically significant zero order correlation for self-reported depth of influence and speech familiarity ($r(121) = -.012, p = .45$ (two-tailed)), imagoic suggestibility and speech familiarity ($r(121) = -.21, p = .01$ (two-tailed)), or speech hypnoidal state and speech familiarity ($r(121) = .003, p = .49$ (two-tailed)).
7.4.6 Discounting gender and nature of employment role as potential confounding variables in relation to assessments of the effect of charismatic leadership oratory on mean adapted PCI-Hypnotic Assessment Protocol items

In Chapter 6 it was established that gender and nature of job role had no effect on depth trance score. Paralleling the approach taken in that chapter, the other variables of interest explored in this chapter were assessed both for gender and client- or non-client-facing employment tasks. Descriptive statistics for the PCI-Hypnotic Assessment Protocol adapted item scores as a function of gender and job role are provided in Tables 7.3 and 7.4, respectively.

Table 7.3: PCI-Hypnotic Assessment Protocol adapted item scores for males and females (n = 121)

<table>
<thead>
<tr>
<th>PCI-HAP Measures</th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reported depth of influence</td>
<td>Males</td>
<td>38</td>
<td>5.92</td>
<td>2.70</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>6.89</td>
<td>2.05</td>
</tr>
<tr>
<td>Imagoic suggestibility</td>
<td>Males</td>
<td>38</td>
<td>5.61</td>
<td>2.82</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>5.61</td>
<td>2.37</td>
</tr>
<tr>
<td>Expectancy</td>
<td>Males</td>
<td>38</td>
<td>5.95</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>6.89</td>
<td>1.65</td>
</tr>
<tr>
<td>Motor suggestibility</td>
<td>Males</td>
<td>38</td>
<td>3.26</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>83</td>
<td>3.16</td>
<td>1.51</td>
</tr>
</tbody>
</table>

Because of the imbalance in sample size, in combination with Levene’s test suggesting inequality of variance for all the variables except motor suggestibility, it was decided to report a non-parametric equivalent test result. Independent samples Mann-Whitney U tests showed no significant gender difference in three out of the four variables: self-reported depth of influence (p = .71 (two-tailed)), imagoic suggestibility (p = .942 (two-tailed)) and motor suggestibility (p = .21 (two-tailed)). However, women had higher levels of expectancy of influence before watching this speech compared to men (U = 1.26, p = .021 (two-tailed)), although clearly any underlying processes causing this difference were no longer present after watching the speech in any other PCI-Hypnotic Assessment Protocol items.
As before (in Chapter 6), the analysis then looked at the potential confounding effects of job role. Descriptive statistics for the variables of self-reported depth of influence, imagoic suggestibility, expectancy and motor suggestibility by job role can be found in Table 7.4.

Independent samples t-tests indicated no differences between the groups for any of the PCI-Hypnotic Assessment Protocol adapted items: self-reported depth of influence (t(119) = 296, p = .768 (two-tailed)), imagoic suggestibility (t(119) = -0.094, p = .925 (two-tailed)), expectancy (t(119) = -0.51, p = .614 (two-tailed)) or motor suggestibility (t(115) = 0.48, p = .629 (two-tailed)).

### 7.5 Discussion

**Are there positive relationships between adapted PCI-Hypnotic Assessment Protocol items that are similar to relationships found in hypnosis (Hypothesis B1)?**

Evidence from the present study indicates that as self-reported depth of influence increases during a charismatic leadership speech, so does depth of trance and the amount of internal imagery experienced in response to an
orator’s metaphors and suggestions. This parallels the relationship between self-reported hypnotic depth, imagoic suggestibility and hypnoidal state found in hypnosis studies (Pekala et al., 2006; 2010b).

When a three-dimensional plot for the three variables – self-reported depth of influence, imagoic suggestibility and hypnoidal state for charismatic leadership oratory – is compared to a similar plot showing self-reported hypnotic depth as a function of imagoic suggestibility and hypnoidal state during hypnosis, the similarity between relationships is striking. However, it is also clear that the surface represented in three dimension does not extend as far during charismatic leadership oratory in relation to lower-end scores. This seems to bear out conclusions about the nature of hypnotic state during charismatic leadership compared to hypnosis discussed in the previous chapter, namely that charismatic leadership oratory appears to interact with consciousness in similar ways to hypnosis but not to the same degree and, in particular, with an attenuation of range at the lower end of the hypnoidal state scores range compared to typical ranges during hypnosis.

Partial correlation results suggested that the interactions above take place independently of, and are unaffected by, factors such as the effect of watching film and context-related content (such as crowds assembling prior to a speech, demonstrations and protestors). As the speech used in the present research is famous and took place within the lifetime of a number of participants, results might have been confounded by factors such as participant age and familiarity with the speech. Similarly, partial correlation suggests that the relationships above were unaffected by whether participants knew the speech or had been born prior to the speech’s delivery in 1964.

As we have seen above, charisma and transformational leadership are often associated with visionary language and the use of metaphor (Conger, 1991; Conger and Kanungo, 1988a; Gardner and Avolio, 1998; House and Shamir, 1993; Willner, 1984). Definitions of what constitutes vision in leadership are less clear. It would appear, however, based on the evidence for a relationship between self-reported depth of influence, imagoic suggestibility and depth of trance, that a person’s relative capacity to experience internal imagery in
response to suggestion may play an important role in the mechanism by which oratory is able to influence. Not only does imagery appear to be acting in a similar way to hypnosis regarding the relationship of this variable to feelings of being influenced and of entering a trance state, but there is also a wide range of response, as is to be found in hypnosis. This in turn further suggests that there may indeed be follower types with different levels of responding and that these responses parallel those during hypnosis (i.e. those related to hypnotisability).

A further similarity with hypnosis can be seen in the positive relationship between expectancy, self-reported depth, imagoic suggestibility and trance depth. As people’s expectations of how influenced they will be by a speech increase so does the likelihood that they will be influenced by the oratory. A similar relationship exists between the amount of internal imagery experienced in response to an orator’s suggestions during a charismatic leadership speech and expectancy of influence. This was also true for imagoic suggestibility and trance depth, as has also been found during hypnosis.

The next question which inevitably flows from this evidence is the question of whether these variables interact in the same way as hypnosis, and specifically if depth of influence can be predicted from trance depth and imagoic suggestibility (discussed below).

*Is a person’s perception of how deeply influenced they have been by a charismatic leadership speech predicted by the amount of imagery they have experienced in response to the speech content and their depth of trance (paralleling the relationship between self-reported hypnotic depth, imagoic suggestibility and depth of trance during hypnosis) (Hypothesis B2)*?

How deeply influenced a person says they have been by a charismatic leadership speech is indeed predicted by both the amount of internal imagery they experience in response to suggestions made by the oratory and their depth of trance (as assessed by their predicted Harvard Group Score). Further, this parallels the relationship between how hypnotised a person thinks they have been, and the amount and vividness of imagery during a hypnotic dream embedded in a hypnotic induction and hypnoidal state during a two-minutes eyes closed sitting quietly episode towards the end of hypnosis. In terms of the
relative importance within this interaction, imagoic suggestibility appears to be more important in predicting self-reported depth influence than depth of trance. Overall, the combination of increased internal imagery and deepened trance state was found to make the greatest contribution to people’s sense that they have been influenced by an orator.

Arguably this provides the strongest evidence so far for a domain relationship between charismatic leadership and hypnosis, in that it may be that the same underlying mechanisms are at play. Several writers have pointed to the possible relationship to altered states of consciousness (Popper, 2002a) and sense of loss of self for some groups during charismatic oratory. It may be that the combination of latent trait susceptibility and high levels of imaginative suggestion lead some groups of individuals to abandon their sense of self to the charismatic leader, in turn, as Jacobs suggests, then experiencing a form of ‘reparenting’ (Jacobs, 1994) if this state were experienced for long enough.

Is there a relationship between motor suggestibility as assessed by stage hypnotists, prior to the administration of an induction to volunteers, adapted PCI-Hypnotic Assessment Protocol items and depth of trance similar to that found in hypnosis (Hypothesis B3)?

If the relationships above are underpinned by the same mechanism as that during hypnosis, one would expect there also to be a relationship to the sort of motor suggestibility tests that are used in hypnosis. In the case of the present study, however, although increased scores for motor suggestibility tests appear to be associated with increased hypnoidal state and expectancy, these scores were not associated with self-reported depth of influence. It is difficult to draw any specific conclusions from this, since, as was noted above, the relationship between the motor suggestibility item in the PCI-Hypnotic Assessment Protocol and self-reported hypnotic depth has been reported differently in various studies. Specifically Pekala (2010b) reports only a mild correlation ($r = .20$, $p < 0.05$) with no correlation reported in Pekala et al., (2006) ($r = .06$, $p > 0.05$) in relation to the finger response item and self-reported depth. Similarly, for the eye catalepsy item there is a different result in the two studies. In Pekala et al. (2006) a moderate positive correlation is reported for the relationship between
eye catalepsy and self-reported depth ($r = .45, p < .001$) whereas there was no relationship in Pekala (2010b) ($r = .15, p > .05$). In any case it should be noted that the motor suggestibility tests used in the present study are not the same as those used by Pekala in the PCI-Hypnotic Assessment Protocol and therefore represent the greatest adaptation of the protocol items. Nonetheless, the partial evidence for a relationship between people’s response to stage hypnosis-type suggestibility tests and some of the variables associated with the PCI-Hypnotic Assessment Protocol (in particular, trance depth) would appear to support the hypothesis of a general domain relationship between the effects of charismatic oratory and hypnosis.

### 7.6 Conclusions in relation to Proposition B

The purpose of Main Study B was to examine the second of the four propositions:

**Proposition B – There are relationships between trance depth and PCI-Hypnotic Assessment Protocol measures during charismatic leadership oratory that are similar to those found during hypnosis**

Using adapted PCI-Hypnotic Assessment Protocol items, it was found that relationships exist between how deeply influenced a person feels they have been during charismatic leadership oratory and the amount of imagery they experience in relation to imaginative suggestions by the oratory and trance depth. This is the same relationship as that found in hypnosis, where people are asked how deeply hypnotised they think they have been. Further, imagoic suggestibility and trance depth predict depth of influence, once more paralleling findings from hypnosis that indicate self-reported hypnotic depth can be predicted by imagoic suggestibility and trance depth.

This parallel relationship implies that charismatic leadership and hypnosis not only share the ability to deepen trance and place some individuals into a deep trance state (as was established in Chapter 6), but also that the two conditions share the generation of an interaction between trance depth and imaginative suggestion. This further supports the idea that charismatic leadership may be a form of sub-domain within the wider domain of suggestion, alongside hypnosis and other established phenomenon such as placebo effects, memory effects.
and sensory suggestibility (Kirsch et al., 2011). It also appears that the link to hypnotic susceptibility may be related not only to subjective experience of consciousness, but also to the important distinguishing feature of hypnosis, involuntariness. Remarkably, the use of motor suggestibility tests from stage hypnosis (similar to those found in the Harvard induction) showed a relationship between ‘passing’ these tests and depth of trance during the speech.

By extension, the evidence unites for the first time in the leadership and management literature the various hypotheses about a relationship between charismatic leadership and hypnosis, belief, and the evidence in support of the importance of both oratory, vision and imaginative rhetoric in such leadership. Importantly, and in addition, there was a strong relationship between expectancy and all three of the key variables assessed (self-reported depth, imagoic suggestibility and hypnoidal state) – a finding which chimes with the fMRI evidence for the importance of belief in a leader’s charisma, presented by Schjoedt and colleagues (2010) and Weber’s views that charisma is essentially in the eye of the beholder (Weber, 1922/1968). Drawing the results together, and bearing in mind the strong identification of the importance of visual imagery (Willner, 1984) and metaphor (Conger, 1991; Conger and Kanungo, 1998b), the creation and communication of a future-focused vision (Conger, 1989; Holladay and Coombs, 1993; Shamir et al., 1994; Tichy and Devanna, 1986) and the significance of oratory, these results appear to explain why these may all be the case. In other word, it appears that high levels of imaginative suggestion interact with susceptibilities (which may be related to hypnosis) and a person’s belief in a leader’s ability to influence.

In the next chapter, the PCI’s capacity to sensitively measure changes in the structure of consciousness with regard to shifts in intensity across the 26 PCI major and minor dimensions and patterns effects between major dimensions is deployed. There is also an assessment of whether charismatic leadership oratory generates an altered state of consciousness – an important consideration, since prolonged exposure to an altered state has been suggested as one means by which people may end up experiencing substantial changes in personal attributes and attitudes (Lifton, 1969; Popper, 2002a).
Chapter 8 – Main Study C: The structure of consciousness during charismatic leadership oratory

8.1 Areas of the research design made use of in Main Study C

In relation to the research design discussed in Chapter 5, Main Study C made use of data from those areas of the design which are indicated in blue in Figure 8.1. Areas in grey did not contribute to the analysis in Main Study C.

**Figure 8.1: Areas of the research design which apply to the analyses in Main Study C**
8.2 Introduction: how the PCI can assess changes in the structure of consciousness and altered states of consciousness

8.2.1 Operationalising phenomenological intensity effects using the PCI and evidence from prior hypnosis studies

Singer’s theories about altered state of consciousness suggest that altered state might be seen as a function of changes in the intensity of phenomenological experience (Singer, 1977). Using the 12 PCI major dimension and 14 minor dimension results, it is possible to look at the effects of a particular stimulus condition on consciousness, applying separate MANOVA for the major and minor dimension scores, followed by ANOVA and then post-hoc comparisons of mean difference for each dimension. In terms of the effects of a hypnotic induction (compared to a baseline sitting quietly condition), there are consistent findings in relation to intensity differences (Pekala, Steinberg and Kumar, 1986; Kumar and Pekala, 1988; 1989; Pekala and Kumar, 2007). Summarising the evidence from the studies above, Pekala and Kumar (2007) note that hypnosis (as in the experience of high hypnotisables during a hypnotic induction) is associated with decreases in the major dimension of positive affect (the mean composite of the minor dimensions of joy, love and sexual excitement). There is also a reduction in negative affect intensity (anger and sadness). Lower intensity scores have, in addition, been found for the major dimensions of rationality, self-awareness, memory, internal dialogue and volitional control. In relation to increases in phenomenological intensity, hypnosis has been found to increase altered state of awareness and altered experience (specifically, involving the minor dimensions of altered perception and altered time sense). Pekala and Kumar (2007) suggest:

These results are congruent with the viewpoint of hypnosis as an altered state of awareness, along with the feeling of decreased volitional control that is regarded as the hallmark of the classic suggestion effect (Brown and Fromm, 1986; Bowers, 1981; McCloskey, Kumar and Pekala, 1999). (Pekala and Kumar, 2007: 170)
Cardeña (2005), in a study of the phenomenological experience of hypnotic virtuosos (people with the highest levels of hypnotic susceptibility (2–5% of the general population)), where the suggestion was to ‘go as deeply into hypnosis as possible’, identified changes in intensity for 20 out of the 26 major and minor dimensions (Cardeña, 2005: 37). Specifically, deep hypnosis was associated with higher levels of intensity for the minor dimensions of altered body image, altered time sense, altered perception, altered meaning and for the major dimension of altered state of awareness. There were also higher levels for positive affect, inward absorbed attention and vividness of imagery. Lower levels of intensity were found for rationality, self-awareness, memory and volitional control. There were no differences for arousal.

Research into the effects of a hypnotic induction using the PCI usually uses a different baseline control to the one in the present study, specifically eyes closed sitting quietly rather than eyes open (although there is a descriptive comparison of an eyes open sitting quietly condition compared to an induction for a whole sample in Pekala (1991)). The eyes closed baseline control is chosen for the study of hypnosis because the PCI is sensitive enough to be able to detect shifts in major and minor intensity level for this ostensibly subtle change in physiology (see Pekala, 1991 and the trance tables in Appendix B) and in most PCI hypnosis studies the subjective effects of a hypnotic induction have been measured by completing the PCI in reference to an eyes closed sitting quietly period embedded towards the end of the Harvard induction (with the exception of those using the PCI-Hypnotic Assessment Protocol (Pekala et al., 2006 and Pekala et al., 2010b, c)), making eyes closed both a more valid and reliable control. This presents a problem for the present research, if one were to try to compare (descriptively) significant changes in intensity in the present study with those found in prior hypnosis studies, as changes compared to an eyes open baseline will be different to changes in an eyes closed one.

The different effects of an eyes closed baseline versus an eyes open one are illustrated in Figure 8.2. This shows the PCI major dimension profile of phenomenological intensity for the eyes open sitting quietly condition in the present study compared to data supplied for use in this research by Ronald J. Pekala for a whole sample experiencing an eyes closed baseline versus the
effects of the Harvard induction. These conditions and samples are the same ones reported on in Pekala and Forbes (1988) and Pekala and Ersek (1992-1993) and are discussed in more detail below. A partial solution was decided on for the present study. As well as carrying out a descriptive comparison of means during hypnosis compared to the speech condition, there was inferential testing of the relationship between rank orders of intensity level during hypnosis from the prior study with those during charismatic leadership oratory. This not only allowed for the use of an inferential test between the present study experimental condition and hypnosis but also for the use of $r_x^2$ in a PRE (proportional reduction in error) interpretation comparing hypnosis and conditions in the present study. The results of these analyses are presented below.

### 8.2.2 Operationalising pattern effects

PCI major dimension results can be used to operationalise pattern effect in two ways (see for discussion, Pekala, 1991; Pekala and Kumar, 2007). Drawing on Izard’s conception of altered state of consciousness, psygrams (a clock-face diagram illustrating the variance in common ($r^2 \times 100$) between pairs of PCI major dimensions) can be graphed for significant correlations. In this way, a psygram can provide a visual map of the relative coupling of dimensions (those that are either positively or negatively correlated; and with significant variance in common) compared to the discoupling of variables (non-significant variance in common).

Pekala and colleagues (see Pekala and Kumar, 2007) argue that this approach can be seen as a way to operationalise Izard’s concept of ‘bonding’. This approach has been used in previous research to compare high and low hypnotic susceptibility individuals (Pekala and Bieber, 1989-1990; Pekala and Kumar, 2000) to a baseline control and whole samples experiencing conditions such as reading erotic literature (Pekala, 1985), relaxation/meditation (Pekala, 1985), shamanic states (Rock, Casey and Baynes, 2006; Rock et al., 2008a; b) and the experience of mediums carrying out discarnate reading (Rock and Beischel, 2008).
Izard (1997) suggests that an ordinary state of consciousness is characterised by the combination of affective-cognitive structures (emotions, perceptions, cognition) in an interrelational way. In contrast to Singer, Izard’s theorising suggests that an altered state is one in which the bonding, or coupling, of affective-cognitive structures breaks down:

Since bonds between affect and cognition provide the principal structures of ordinary consciousness it follows that special states of consciousness will result only if the individual can alter or temporarily break these bonds or interrupt the seemingly automatic bonding process. (Izard, 1977: 158)

Tart (1975) offers a more holistic view and proposes that states of consciousness (and specifically ‘discrete states of consciousness’ (d-Soc)) are associated with changes in the overall pattern across subsystems of consciousness that make up a particular state of consciousness:
... a d-SoC for a given individual ... [is] a unique configuration or system of psychological structures or subsystems, a configuration that maintains its integrity or identity as a recognisable system in spite of variations in input from the environment and in spite of various (small) changes in the subsystems. (Tart, 1975: 62)

From this perspective, an ordinary state of consciousness can be said to constitute a set of rules that help to facilitate interaction between, and the interpretation of, experiences between a person and the environment (Tart, 1972), the nature of these rules being implicit rather than explicit, the rules operating automatically so that a person feels as if a consequent state of being is natural. A ‘discrete altered state of consciousness’ (d-ASC (Tart, 1975)) is therefore one in which there is a significant change in the way in which a person perceives their state of consciousness compared to an ordinary state of consciousness (or ‘baseline state of consciousness’ (b-SoC)). Thus perceived alterations are underpinned by changes in the pattern, or relationships, between different subsystems of consciousness.

Specifically, Tart suggests that a d-SoC is stabilised by volitional ‘focused attention/awareness energy’ and by the processes of positive and negative feedback. A d-ASC is the result of disruption by forces which drive subsystems beyond the limit where they can function in a stable way together with patterning forces that result in the organisation of a new subsystem structure. Furthermore, Tart’s view is that during the transition from one state of consciousness to another state of consciousness there may be a temporary disorganisation. Comparing Tart’s concept to more recent research, Cardeña (2011) notes evidence from a number of areas of study which suggest that pathological transitions between states of consciousness may indeed involve some form of psychophysiological disorganisation. In support of this, Cardeña points to switches between identity states during Dissociative Identity Disorder (Putnam, 1988), the transition from being awake to being asleep (Foulkes and Vogel, 1965) and being in a normal state of consciousness compared to feeling possessed by a spirit (Cardeña, 1998; 1989).
Concerning Tart’s concept of altered state of consciousness, changes in overall PCI major dimension pattern effect can be assessed for large samples (n > 60) using the Jennrich Test (Pekala, 1985; Pekala and Bieber, 1989-1990; Kumar and Pekala, 1989; Pekala, 1991; Pekala and Kumar, 2000; 2007). The Jennrich Test (Jennrich, 1970) is an asymptotic \( \chi^2 \) test (one that includes the assumption that, as the sample size increases so the distribution will approach normality). The test is able to compare the equality of two intercorrelation matrices as well as the equality of two covariance matrices. As is noted by Pekala (1991: 293) because the Jennrich Test was devised for use with independent groups, it is a more conservative test when applied to a within-subject design. For small samples (n < 60), the Box Test (Box, 1949), which compares the equity of covariance matrices, is used (Rock and Beischel, 2008; Rock, Casey and Baynes, 2006; Rock et al., 2008a; b).

**8.2.3 Evidence from hypnosis studies**

Evidence from research into the effects of a hypnotic induction using the PCI (Pekala and Bieber, 1989-1990) indicates that low versus high hypnotisables, as defined by Harvard Group Scale of Hypnotic Suggestibility Scores (Form A), have more significant (p < .001) couplings whilst sitting quietly with their eyes closed (17 in total) than high hypnotic susceptibility individuals (10 couplings). Furthermore, as low hypnotisables move from a sitting quietly condition (eyes closed) to experiencing the effects of hypnosis, the process of hypnotic induction appears to have enhanced the relative strength of associations. Although it is the case that the number of significant associations (or couplings) increases only by a small amount, from 17 to 21, the average percentage variance in common nearly doubles, from 19% (eyes closed sitting quietly) to 37% (hypnosis). It therefore appears that, for low susceptibility individuals, the subsystems of consciousness are more strongly coupled during hypnosis whilst at the same time the overall pattern of consciousness appears to be altered significantly (Jennrich Test results indicated a difference between correlation matrices of \( \chi^2(66) = 150, p < .001 \)).

In contrast, although high hypnotisables also experience a significant alteration in overall pattern of consciousness (\( \chi^2(66) = 88.6, p < 0.05 \)) the interaction of
subsystems of consciousness is very different. For high susceptibility individuals the number of significant couplings remains similar (9 and 10 respectively), as they move from the baseline state to hypnosis, with the average variance in common also remaining similar. Pekala and Kumar (2007) propose that this alteration in overall pattern is explained by changes in the paired pattern relationships for high susceptibility individuals during hypnosis. Specifically, for high hypnotisables rationality is more strongly associated with visual imagery during hypnosis; this is also the case for positive affect and visual imagery. However, there is no longer a strong coupling between memory and inward absorbed attention.

Prior research by Pekala and colleagues found similar relationships, illustrated in the two psygrams below. These psygrams were drawn using amalgamated data for the same sample and condition (Pekala, 1991: 292), reported in Chapters 12 and 13 of Pekala (1991: 270, 295-298), and include the hypnoidal state (pHGS) for this same piece of research that was calculated for inclusion in the trance tables in Appendix B. These are the same pattern effects reported by Pekala and Kumar (1986).

Figure 8.3 shows rounded major dimension intensity levels within psygram circles, variance in common between pairs of dimensions (thickness of line and percentage) and direction of relationship (positive or negative) for high hypnotic susceptibility individuals with a mean Harvard score of 9–12 (M = 10.27) following an eyes closed sitting quietly period embedded towards the end of the Harvard induction. Figure 8.4 illustrates data for low hypnotic susceptibility individuals with Harvard scores of 0–5 (M = 3.25), during the same condition.

In the case of the pattern effects in Pekala and Kumar (1986), although the overall change in pattern (as assessed by the Jennrich Test) was significant for low hypnotisables compared to the control condition (eyes closed sitting quietly) ($\chi^2(66) = 118, p < .001$), it only approached significance for high hypnotisables ($\chi^2(66) = 82, p < .10$). However, the difference in intercorrelation matrices for lows versus highs was significant ($\chi^2(66) = 108, p < .005$).
Pekala and Kumar (2007) suggest that such results (Pekala and Bieber, 1989-1990; Pekala and Kumar, 1986), which also show a reduction in the number of significantcouplings between pairs of major dimensions, can be interpreted as follows. Increased magnitude and frequency of associations among subsystems may make it more difficult for lows to experience a hallucination high or to dissociate the perceptual experience of one’s arm, since a change in one particular subsystem appears to lead to changes in associated subsystems. Drawing on Parallel Distributed Processing (PDP) models of consciousness (Baars, 1988; McClelland et al., 1986; Rumelhart et al., 1986) and the notion of a ‘global workspace’ (Baars, 1997), in which learning is seen as a function of the modification of connection among the processing units of consciousness, this would make it quite difficult for lows to modify the phenomenological contents of a particular subsystem of consciousness without affecting many other subsystems concurrently.
Pekala and Kumar (2007) further argue that this method also provides a way to operationalise the relationship between dissociation and hypnosis, not as a function of the contents of consciousness (as for example, is measured by the Dissociative Experiences Scale (Bernstein and Putnam, 1986)) but instead as a means of defining ‘dis-association among the processors of consciousness’ (Pekala and Kumar, 2007: 175). From this perspective they argue that their hypnosis study results are consistent with other research that suggests hypnosis has an effect on the integrative functions of the brain and in doing so alters or causes a breakdown in communication between the sub-units within the brain that are responsible for the generation of conscious experience (Vaitl et al., 2005; cited in Pekala and Kumar, 2007).
8.2.4 Comparing pattern effects for hypnosis and charismatic leadership oratory in the present study

With regard to making a comparison of the effects of charismatic leadership on the pattern of consciousness compared to hypnosis, no publications currently contain psygrams for a whole sample group for hypnosis. Rather, studies have focused on the differences between sub-groups such as high versus low hypnotic susceptibility individuals (Pekala and Kumar, 1986; Pekala and Bieber, 1989-1990; Pekala and Kumar, 2000). However, to support the analysis in the present study, Ronald J. Pekala and Elizabeth Forbes agreed to supply the intercorrelation matrices constructed from the PCI major dimension results (with intensity levels and standard deviations) for 246 nursing students who completed the PCI in reference to an eyes closed sitting quietly period during the Harvard induction. These are the same results whose intensity levels are reported in Pekala and Ersek (1992-1993) in a comparison with fire-walking and in Pekala and Forbes (1988) where the hypnoidal state attained during hypnosis is compared to other stress management conditions for low, low-medium, high-medium and high hypnotic susceptibility individuals. As well as comparing psygrams at a descriptive level, since the Jennrich Test compared correlation matrices directly, it was possible to carry out inferential tests between hypnosis and charismatic leadership to assess overall pattern change.

8.3 Proposition C and hypotheses related to the structure of consciousness during oratory

This chapter describes the results related to the third proposition:

**Proposition C** – Mapping of states of consciousness during charismatic oratory, and comparing these to what has been found during hypnosis, shows that oratory generates an altered state of consciousness

As was noted in the literature review, the effects of some forms of charismatic leadership have been associated not only with the word hypnosis, but also with the concept of altered state of consciousness (for example, Glassman, 1975; Van Over, 1975; Lindholm, 1992; Popper, 2002a). Popper, in particular, makes
the parallel between Lifton’s studies of thought reform in Chinese communist prisons (Lifton, 1969) and prolonged altered state of consciousness in some charismatic leadership contexts, leading to changes in personality and other follower attributes.

In Chapter 6, we saw how charismatic leadership oratory deepens trance and creates levels of hypnoidal state that are similar to hypnosis for a whole sample group, although not to the same degree as hypnosis, and not to the same depth overall as is experienced by high hypnotic susceptibility individuals during a standard hypnotic induction. However, charismatic leadership oratory, like hypnosis, generates a wider spread of hypnoidal response compared to control conditions, with 8.28% of people attaining a depth of trance commensurate with a high hypnoidal state, 15.7% a deeper trance than the highest level during the pseudo attention placebo and 33.9% attaining hypnoidal states higher than the highest level in the baseline control condition.

Furthermore, as described in Chapter 7, people’s depth of trance during charismatic leadership oratory and the amount of imagery they experience, related to metaphors and imagery used by the speaker, predicts how deeply influenced they say they have been by a speech. This parallels the relationship between how deeply hypnotised a person says they have been during hypnosis, imagoic suggestibility and depth of trance during hypnosis. It would appear that some underlying mechanisms might be similar to hypnosis during charismatic leadership oratory.

This raises the question of whether a charismatic leadership speech also alters the structure of consciousness at the level of individual major and minor dimensions of consciousness, or just for the particular combination necessary to produce a deeper level of hypnoidal trance (as defined by the pHGS (predicted Harvard Group Score) regression equation). It further begs the question, if there are significant changes at individual major and minor dimension levels, whether charismatic leadership oratory does this in similar ways to hypnosis; and whether changes are significant enough to be considered an altered state of consciousness (according to definitions based on prior PCI studies). If such altering of consciousness were to be found, this
might help to provide an explanation for the apparent radical shifts in personality and attributes that prolonged exposure to some forms of charismatic leadership seem to be able to facilitate, under the right circumstances (Popper, 2002a).

The PCI operationalises three altered state theories (Pekala, 1991; Pekala and Kumar, 2007): those of Singer (1997), Izard (1977) and Tart (1972; 1975; 1977). These three theories contrast in the following ways: Singer was concerned with changes in intensity, Izard with the idea of bonding between subsystems of consciousness (and as such, pattern effect rather than intensity levels) and Tart with overall pattern effect change. With regard to intensity and pattern effects (and because Ronald J. Pekala supplied additional hypnosis data, used with thanks to Ronald J. Pekala and Elizabeth J. Forbes), the study’s design allowed for the investigation of the following hypotheses:

- **Hypothesis C1** – Charismatic leadership oratory alters the structure of consciousness in relation to: a) changes in PCI major and minor intensity levels, and b) paired major dimension of consciousness pattern changes
- **Hypothesis C2** – Charismatic leadership oratory generates an altered state of consciousness in relation to overall pattern effect change
- **Hypothesis C3** – Charismatic leadership oratory alters the structure of consciousness in a similar way to a hypnotic induction for a whole sample

8.4 Results

8.4.1 Summary of the analytical approach taken with regard to Proposition C

The first section below compares PCI major and minor dimension intensity levels between conditions in the present study. To avoid violating the assumption of multicollinearity, separate multivariate analyses of variance were performed on the PCI major and minor dimension scores (following the protocol established in prior PCI research (Woodside, Kumar and Pekala, 1997)). SPSS GLM repeated measures were used to perform the two separate one-way within-subject multivariate analysis of variance with the PCI major and
minor dimension intensity scores as dependent variables, and the three conditions (eyes open sitting quietly, archive film, charismatic leadership speech) as the independent variable. There followed separate univariate analyses of variance (ANOVA) for the 12 major and 14 minor dimensions. Assessment of mean difference between the experimental condition and the baseline condition and between the experimental condition and the pseudo attention placebo condition used pairwise comparisons.

In the next section there is a descriptive comparison of paired major dimension pattern effects between conditions in the present study using psygrams built from the intercorrelation matrices for each condition. The Jennrich Test then compares the equity of the intercorrelation matrices in order to make an overall judgement as to whether charismatic leadership oratory generates an altered state of consciousness according to the way in which Pekala and colleagues (see Pekala and Kumar, 2007) have operationalised Tart's theories (1972; 1975; 1977).

The final section compares the present study results to a previous investigation into hypnosis (described in Pekala and Ersek (1992-1993) and Pekala and Forbes (1988)), using major intensity means and the intercorrelation matrix for the hypnosis condition supplied by Pekala. There is a descriptive comparison of intensity scores for charismatic leadership oratory compared to hypnosis, then an exploration of the rank order relationship of means for the two conditions using $r_s$ and $r_{s}^2$. Pattern effect comparison takes place through the discussion of a psygram drawn from the intercorrelation matrix for the same hypnosis sample and condition, compared to the psygram for charismatic leadership oratory. Finally, the Jennrich Test compares the intercorrelation matrices for hypnosis and the charismatic leadership speech in the present.

**Prior to the analysis – removal of unreliable questionnaires and assessment of whether counterbalancing had been effective**

As before, only the 121 participants with Reliability Index (RI) scores of less than $RI = 2.30$ were included in the analysis. To ensure accuracy the PCI Excel Scoring Protocol (Pekala, Maurer and Ott, 2009) calculated mean intensity scores for PCI major and minor dimensions.
Further, to examine if counterbalancing had been effective within the research design, analysis of variance was undertaken for each of the PCI major dimensions with condition order as the between-subject factor. Using a Bonferroni adjusted level of alpha (0.004 [p < \frac{.05}{12}]), all of the results were non-significant, indicating that there had been no transfer of learning between conditions and that counterbalancing had been successful. The results for the 12 PCI major dimensions with condition order as a between-subject factor are given in Appendix N.

For completeness, the additional ANOVA-based procedure outlined on page 172 was repeated for all 26 PCI major and minor dimensions. No carryover effects were detected (see Appendix O).

### 8.4.2 Changes in phenomenological intensity effects during charismatic leadership oratory (Hypothesis C1a)

Descriptive statistics for the 12 PCI major and minor dimensions (Table 8.1) and graphing of major and minor dimension intensity profiles (Figures 8.5 and 8.6) suggested that the three conditions might have different effects on participant intensity of experience for some of the major and minor dimensions. These figures include untransformed mean differences in major and minor dimension intensity levels for the archive film and charismatic leadership speech compared to the baseline control condition.

#### Preliminary assumption testing

The within-subject design and sign-up rate for participation in the study ensured that the present study easily met the sample size requirements for robust use of MANOVA. Initial preliminary assumption testing checked for violations of normality and the presence of outliers. A number of variables had non-normal distributions and/or outliers, which would preclude the use of parametric tests without first transforming the data. Although MANOVA is reasonably robust to violations of normality, provided there is a sample size > 20 in each cell (Tabachnick and Fidell, 2007), it was apparent that without transformation there was a risk of failing to achieve multivariate normality, as well as having the result adversely affected by outliers which MANOVA is particularly sensitive to.
Transformation also allowed for the application of Singer’s theories (Singer, 1977; Pekala, 1991) in the standard way and then for the same consistent normalised data to be used later in psygrams, in order to look at pattern effects (Izard, 1977; Tart, 1977). This was important because for psygrams to illustrate variances in common they need to be produced using $r^2$, not $r_s^2$, and therefore require reasonably normally distributed data.

Transformations were undertaken as follows. The PCI major dimensions for vivid imagery completely met assumptions. Inward absorbed attention, negative affect, altered experience, volitional control, internal dialogue and altered state of awareness were mostly satisfactory, and were incapable of further improvement. A square-root transformation normalised the positive affect and arousal distributions. A reflection followed by a square-root transformation normalised the rationality, self-awareness and memory distributions.

In respect of the PCI minor dimensions, amount of imagery and imagery vividness were satisfactory in relation to the assumptions of normality, linearity and homoscedasticity and in terms of the presence of univariate outliers. A square-root transformation was used to normalise joy, sexual experience, love, anger, sadness, fear, altered body image, altered time sense, altered perception, unusual meaning, direction of attention and absorption (see Barnes, Lynn and Pekala (2008) for similar use of transformations in a PCI study).

Following transformation, both major and minor dimensions met the assumptions of linearity (as assessed using the graphical method described by Tabachnick and Fidell, 2007). Assessing the major and minor dimension relationship separately, all the transformed variables also appeared to satisfactorily meet the requirements of multicollinearity and singularity, with the exception of one pair of variables which was of borderline concern (the relationship between altered experience and altered state during charismatic oratory ($r = .804$)). It was decided, however, to proceed with the use of MANOVA. In addition, because (following the precedents in prior PCI research) it was intended to follow MANOVA with separate univariate analysis
of variance for the 26 major and minor dimensions, the presence of low correlations was also accepted.

Linearity was assessed using the graphic method described by Tabachnick and Fidell (2007) and again found to be satisfactorily improved as a result of transformation. Multivariate normality was tested separately for the PCI major and minor dimensions using Mahalanobis distance, with alpha = .001. There were no multivariate outliers. Finally, separate Box Tests of Equity of Covariance Matrices were significant for both the major and minor dimensions – suggesting a violation of the assumption of homogeneity of variance-covariance matrices, as has been frequently documented (see Tabachnick and Fidell, 2007; Field, 2007). Although this test can be over-sensitive with large sample sizes, as all other assumptions appeared to have been met (at least satisfactorily), it was decided to proceed with the planned analysis. Because of this, and as discussed below, caution was applied in the use and interpretation of a parametric test in this context, and therefore parallel non-parametric tests were also conducted so that the effect of transformation could be monitored. Homogeneity of regression was not assessed as there was no intention to perform step-down analysis.

Assessments for and correction of violations of sphericity for PCI major and minor dimensions

Following improvement in the normality of dimensions, where this was necessary, the transformed variables were assessed to determine if they violated the assumptions of sphericity. For PCI major dimensions, Mauchly’s test (Mauchly, 1940) showed a violation of sphericity of nine variables. In relation to the PCI minor dimensions, a further seven variables violated the assumption. Therefore, the ANOVA analyses below use Greenhouse-Geisser (Epsilon) estimate corrections (Greenhouse and Geisser, 1959) for these variables. Violations are described in detail in Appendix P.
Table 8.1: PCI major and minor intensity differences for the three conditions in the present study (n = 121)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Eyes open sitting quietly</th>
<th>Archive film</th>
<th>Charismatic leadership speech</th>
<th>Significant pairwise comparisons on transformed data - (see Appendix R)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Rationality</td>
<td>4.25</td>
<td>1.41</td>
<td>4.71</td>
<td>1.10</td>
</tr>
<tr>
<td>Positive affect</td>
<td>1.32</td>
<td>1.14</td>
<td>1.68</td>
<td>1.17</td>
</tr>
<tr>
<td>Joy</td>
<td>1.41</td>
<td>1.48</td>
<td>1.97</td>
<td>1.56</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>0.52</td>
<td>1.16</td>
<td>0.41</td>
<td>1.06</td>
</tr>
<tr>
<td>Love</td>
<td>1.99</td>
<td>1.75</td>
<td>2.63</td>
<td>1.80</td>
</tr>
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<td>Arousal</td>
<td>1.79</td>
<td>1.51</td>
<td>1.59</td>
<td>1.38</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>4.68</td>
<td>1.10</td>
<td>4.13</td>
<td>1.23</td>
</tr>
<tr>
<td>Memory</td>
<td>4.72</td>
<td>1.10</td>
<td>4.75</td>
<td>1.03</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>3.23</td>
<td>1.27</td>
<td>3.75</td>
<td>0.92</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>3.07</td>
<td>1.52</td>
<td>3.12</td>
<td>1.24</td>
</tr>
<tr>
<td>Absorption</td>
<td>3.50</td>
<td>1.57</td>
<td>4.70</td>
<td>1.34</td>
</tr>
<tr>
<td>Negative affect</td>
<td>0.68</td>
<td>1.02</td>
<td>1.21</td>
<td>1.13</td>
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<td>Anger</td>
<td>0.76</td>
<td>1.33</td>
<td>1.43</td>
<td>1.55</td>
</tr>
<tr>
<td>Sadness</td>
<td>0.88</td>
<td>1.43</td>
<td>1.50</td>
<td>1.36</td>
</tr>
<tr>
<td>Fear</td>
<td>0.41</td>
<td>0.91</td>
<td>0.67</td>
<td>1.05</td>
</tr>
<tr>
<td>Altered experience</td>
<td>1.62</td>
<td>1.00</td>
<td>1.89</td>
<td>1.09</td>
</tr>
<tr>
<td>Altered body image</td>
<td>2.09</td>
<td>1.40</td>
<td>2.35</td>
<td>1.48</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>2.32</td>
<td>1.71</td>
<td>1.83</td>
<td>1.62</td>
</tr>
<tr>
<td>Altered perception</td>
<td>1.05</td>
<td>1.19</td>
<td>1.22</td>
<td>1.23</td>
</tr>
<tr>
<td>Altered meaning</td>
<td>1.15</td>
<td>1.30</td>
<td>2.22</td>
<td>1.39</td>
</tr>
<tr>
<td>Volitional control</td>
<td>3.79</td>
<td>1.32</td>
<td>3.78</td>
<td>1.09</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>2.96</td>
<td>1.50</td>
<td>3.00</td>
<td>1.36</td>
</tr>
<tr>
<td>Amount of imagery</td>
<td>2.85</td>
<td>1.77</td>
<td>2.88</td>
<td>1.62</td>
</tr>
<tr>
<td>Vividness of imagery</td>
<td>3.04</td>
<td>1.46</td>
<td>3.14</td>
<td>1.33</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>4.05</td>
<td>1.92</td>
<td>3.23</td>
<td>1.73</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>1.67</td>
<td>1.30</td>
<td>1.54</td>
<td>1.25</td>
</tr>
</tbody>
</table>
Figure 8.5: Changes in major dimension phenomenological intensity for the archive film and charismatic leadership conditions compared to the baseline control (eyes open sitting quietly)

Figure 8.6: Changes in minor dimension phenomenological intensity for the archive film and charismatic leadership conditions compared to the baseline control (eyes open sitting quietly)
8.4.3 Use of MANOVA and ANOVA across and between conditions

**MANOVA across all three conditions and between conditions**

Separate SPSS MANOVA indicated that there was a significant main within-subject effect for conditions on the combined dependent variables for the PCI major (V = .57, F(24, 460) = 7.72, p < .0005 (two-tailed), $\eta^2_p = .29$) and minor dimensions (V = .63, F(28, 456) = 7.47, p < .0005 (two-tailed), $\eta^2_p = .31$). The two effect sizes (partial eta-squared ($\eta^2_p$)) indicate that the change in condition accounts for approximately 29% and 31% of the variance in PCI major and minor dimensions, respectively. Because of violations of sphericity and greater robustness (compared to Wilks' Lambda and Hotelling's trace (Olson, 1979)), Pillai's trace (V) is also reported (see for discussion Tabachnick and Fidell, 1983). Observed power for both tests was 1.00, suggesting high confidence in avoiding a Type II error.

For the baseline control (eyes open sitting quietly) versus the experimental condition (charismatic speech), there were significant main effects for both the major (V = .34, F(12, 109) = 9.75, p < .0005 (two-tailed), $\eta^2_p = .34$) and minor dimensions (V = .42, F(14, 227) = 11.5, p < .0005 (two-tailed), $\eta^2_p = .42$), with 34% and 42% of the variance accounting for the change in condition, respectively. There was also a significant effect in the case of major dimension intensity changes for the pseudo attention placebo condition (archive film), compared to the experimental condition (charismatic speech) (V = .17, F(12, 109) = 3.95, p < .0005 (two-tailed), $\eta^2_p = .17$) and minor dimension changes (V = .12, F(14, 227) = 2.29, p = .006 (two-tailed), $\eta^2_p = .12$), with 17% and 12% of the variance accounting for the change of condition in this case.

**Major dimension ANOVA across all three conditions**

Degrees of freedom were corrected for major dimension results using Greenhouse-Geisser (Epsilon) estimates of sphericity ($\varepsilon = .79$ for rationality, .94 for self-awareness, .90 for memory, .80 for inward absorbed attention, .95 for negative affect, .91 for volitional control, .92 for vivid imagery, .88 for internal dialogue, and .89 for altered state of awareness). Because overall sphericity could not be assumed, statistical significance was assessed using a
Bonferroni adjusted alpha of .004[2] (p < \(\frac{0.05}{12}\)). For PCI major dimensions, SPSS ANOVA showed statistically significant effects for nine out of 12 dimensions (Appendix Q): rationality, positive affect, arousal, self-awareness, inward absorbed attention, negative affect, altered experience, internal dialogue and altered state of awareness. The exceptions were memory, volitional control and vivid imagery where change across the three conditions was non-significant.

**Minor dimension ANOVA across all three conditions**

Degrees of freedom were corrected using Greenhouse-Geisser (Epsilon) estimates of sphericity (\(\epsilon = .95\) for love, .86 for direction of attention, .90 for anger, .92 for altered body image, .94 for altered time sense, .93 for altered perception and .95 for amount of imagery). Once more, because overall sphericity could not be assumed, statistical significance was assessed using a Bonferroni adjusted alpha of .003[6] (p < \(\frac{0.05}{14}\)). There were significant effects for nine out of 14 minor dimensions (see Appendix Q). These were joy, love, absorption, anger, sadness, altered body image, altered perception, altered meaning and amount of imagery. There were non-significant effects for sexual excitement, direction of attention, fear, altered time sense and vividness of imagery.

**8.4.4 Pairwise comparisons for PCI major and minor dimension**

Pairwise comparisons (Appendix R) were undertaken to compare the mean difference between pairs of PCI major and minor dimensions for the charismatic leadership speech versus the eyes open sitting quietly condition and for the charismatic leadership speech versus the archive film (chosen to act as a pseudo attention placebo condition). In the case of the 12 major dimension intensity results, a Bonferroni adjusted alpha of p = .004[2] (p < \(\frac{0.05}{12}\)) has been applied. For the 14 minor dimensions this has been further increased to p = .003[6] (p < \(\frac{0.05}{14}\)).
Charismatic leadership speech versus eyes open sitting quietly (major dimensions)

Pairwise comparisons (using a Bonferroni adjustment for multiple comparisons) for charismatic leadership speech versus eyes open sitting quietly major dimensions intensity scores indicated significant differences for eight of the 12 PCI major dimensions. There were significantly higher levels of intensity during the charismatic leadership speech compared to the eyes open sitting quietly condition for the following six dimensions: positive affect, arousal, inward absorbed attention, negative affect, altered experience and altered state of awareness. Significantly, lower levels of intensity during the charismatic leadership speech compared to the baseline control condition appeared for the two dimensions of self-awareness and internal dialogue. Non-significant effects were identified for rationality, memory, volitional control and vivid imagery.

Charismatic leadership speech versus archive film (major dimensions)

Regarding pairwise comparisons between the major dimensions intensity scores for charismatic leadership oratory compared to the archive film, there were four significantly high intensity levels during the charismatic speech condition. These were for arousal, negative affect, altered experience and altered state of awareness. The following changes in mean were not significant: rationality, positive affect, self-awareness, memory, inward absorbed attention, volitional control, vivid imagery and internal dialogue. However, lower levels of volitional control approached significance (p = .006 (two-tailed)).

Charismatic leadership speech versus eyes open sitting quietly (minor dimensions)

Minor dimension intensity differences between charismatic leadership oratory and sitting quietly with eyes open indicated significantly higher scores for joy, love, absorption, anger, sadness, altered body image, altered perception and altered meaning. Non-significant effects were found for sexual excitement, direction of attention, fear, altered time sense, amount of imagery and vividness of imagery.
**Charismatic leadership oratory versus archive film (minor dimensions)**

Finally, pairwise comparisons took place to compare minor dimension intensity levels between charismatic leadership oratory and the archive film. These indicated significant higher differences for two of the PCI minor dimensions, anger and sadness. The remaining comparisons were not significant: joy, sexual excitement, love, fear, altered body image, altered time sense, altered meaning, amount of imagery, vividness of imagery, direction of attention, absorption. The higher mean for altered perception during the experimental condition compared to the pseudo attention placebo approached significance (p = .005 (two-tailed)).

**Parallel use of a non-parametric test to assess the effect of the transformations**

For completeness and to acknowledge the debates discussed above (in Chapter 5), a series of Related-Samples Wilcoxon Signed Rank Tests assessed the within-subject effects of charismatic leadership oratory versus the control and attention placebo condition. Comparison of the results from these tests indicates no difference in the PCI major and minor dimension results between the charismatic speech and the baseline control condition (eyes closed sitting quietly) compared to the parametric tests above. However, when it came to the same tests for the charismatic leadership speech versus archive film condition, three variables now reached a level of significance high enough for the rejection of the null hypothesis. These were: volitional control (Z = 3.20, N-Ties = 109, p = .001 (two-tailed)), altered perception (Z = 3.52, N-Ties = 97, p < .0005 (two-tailed)) and altered meaning (Z = 3.41, N-Ties = 109, p = .001 (two-tailed)) (see Appendix S for results table).

Interpretation of the differences between the parametric and non-parametric tests depends on one’s position in respect of the use of transformed data in a parametric test with subjective amalgamated ordinal (Likert scale) data. One view is that the use of the parametric test avoids Type I errors, because it is a more stringent test (when applied to data that meets the necessary assumptions). Alternatively, if the view of the non-parametric test is that it is more authoritative in the context of amalgamated Likert-scale data, then the
parametric test could cause a Type II error. In the case above, no Type I errors appear to have resulted from the use of MANOVA followed by ANOVA, compared to a non-parametric alternative. This parametric approach is also the one most commonly used in the literature (Pekala, 1991; Pekala and Kumar, 2007). Most importantly, the added benefit of being able to continue to use the same transformed data for the construction of the psygrams below outweighed any concerns in respect of the loss of three significant effects for volitional control, altered perception and altered meaning.

8.4.5 Changes in phenomenological pattern effects during charismatic leadership oratory (Hypothesis C1b)

Following the analysis of change in intensity scores above, a pattern analysis (following the protocols defined by Pekala and colleagues (Pekala, 1991; Pekala and Kumar, 2007) took place.

**Preliminary assumption testing**

Prior to constructing a psygram, the drawing-up of intercorrelation matrices for the 12 major dimensions for each of the three conditions using SPSS Pearson’s Product Moment Correlation Co-efficient took place. These matrices can be found in Appendices U, V and W. The matrices use the major dimension transformations discussed above in order to ensure satisfactory normality, linearity and consistency with the analyses above. In addition, scrutiny of scatter plots indicated no significant violations of the assumption of homoscedasticity for pairs of PCI major dimensions. Furthermore, no extreme outliers were in evidence from the scatterplot data.

Following the protocol defined in Pekala (1991), the resulting effect size (r) was squared (and multiplied by 100) to give the percentage variance in common between the pairs of variables. The percentage of shared variance is, it is argued (Pekala, 1991; Pekala and Kumar, 2007), an operational analogue for Izard’s concept of ‘bonding’ between subsystems of consciousness (Izard, 1977). The percentage variance appears in the psygram both in numerical form and in this case with greater coupling, indicated by a relatively thicker line. The two possible directions of relationships (positive or negative) are indicated, in this case, with different shades of blue (in previous research this has
sometimes been shown by multiple lines). Finally, and again as is the convention in this form of analysis, an indication of rounded major dimension intensity level appears in each circle – in this case indicated by a change in colour. For completeness, hypnoidal state (depth of trance) has also been included (as discussed in Chapter 6).

**Pattern analysis for eyes open sitting quietly**

Figure 8.7 shows the psygram for pattern of relationships between pairs of PCI dimension results during the eyes open sitting quietly (baseline control condition). Rounded intensity scores are included in the psygram circles. In terms of intensity, this condition generated little positive or negative affect, mild amounts of arousal, altered experience and altered state of awareness, and moderately mild amounts of inward absorbed attention and vivid imagery. There were moderate or moderately higher levels of intensity for rationality, volitional control and internal dialogue.

Concerning pattern effects, rationality is strongly coupled (and positively correlated) with memory and volitional control, but negatively coupled with altered state of awareness, whilst positive affect is strongly coupled with altered experience and vivid imagery. Arousal and negative affect, self-awareness and memory, negative affect and altered experience, altered experience and vivid imagery, and altered experience and altered state are also strongly coupled and positively correlated.

**Pattern analysis for the archive film versus eyes open sitting quietly**

Figure 8.8 represents the pattern relationships between pairs of PCI dimension intensity results reported during the archive film (attention placebo condition). Applying the same conventions for discussion as Rock, Casey and Baynes, (2008), compared to the eyes open sitting quietly condition there was an increase in intensity for rationality and inward absorbed attention.

In contrast, participants experienced lower levels of intensity for arousal, self-awareness, altered experience and internal dialogue. There was no change for positive affect, memory, negative affect, volitional control, vivid imagery or altered state of awareness.
In relation to pattern effects, the psygram for the archive film is clearly quite different. In particular, the number of dimensions of consciousness coupled, or bonded in some way, has increased from 14 during the eyes open sitting quietly condition to 18 during the archive film, with a number of changes in the relationship between these dimensions, only seven of which remained coupled in the same way. There are new negative relationships between rationality and arousal, self-awareness and altered state, self-awareness and altered experience, and volitional control and altered state. New positive relationships include a coupling of rationality and self-awareness, rationality and memory, and altered state and arousal.

Pairs of dimensions that remained coupled in a similar way include rationality and memory, rationality and volitional control, positive affect and altered experience, arousal and negative affect, memory and volitional control, negative affect and altered experience, and altered experience and vivid
imagery. With regard to the increase in amount of bonding, it is noteworthy that watching archive film of crowds arriving at a charismatic leadership speech and awaiting the start of that speech more than doubled the strength of relationship between negative affect and arousal, even though there was hardly any change in the low levels of intensity for these dimensions.

Figure 8.8: Psygram associated with the archive film condition (present study)

Figure 8.9 depicts the psygram for the pattern of relationships between pairs of PCI major dimensions reported whilst watching charismatic leadership oratory. Intensity levels for this condition were higher for positive affect, arousal, negative affect, altered experience and altered state, but lower for volitional control. Intensity levels for rationality, self-awareness, memory, inward absorbed attention, vivid imagery and internal dialogue remained similar. In terms of pattern effects, a number of changes are in evidence, with the total number of coupled dimensions slightly lower than for the archive film, at 16. Specifically, rationality and self-awareness are no longer positively coupled, neither are rationality and inward absorbed attention, arousal and altered
experience, or arousal and altered state. However, there are new positively coupled relationships between positive affect and altered state, negative affect and positive affect, negative affect and altered state, and vivid imagery and altered state.

Figure 8.9: Psygram associated with the charismatic leadership speech condition (present study)

Two negatively coupled relationships appear to be removed by charismatic leadership oratory. There is no longer a negative relationship between rationality and arousal, or rationality and altered state. In total, eight relationships remained unaffected compared to the archive film: the positive relationships between rationality and memory, positive affect and altered experience, arousal and negative effect, self-awareness and volitional control, memory and volitional control, negative affect and altered experience, altered experience and altered state, and altered experience and vivid imagery. The three negative relationships between self-awareness and altered state, self-awareness and altered experience, and volitional control and altered state also remained similar.
Pattern relationships unique to charismatic leadership oratory

If we remove all of the relationships that are present in both the pseudo attention placebo and the charismatic leadership oratory (in order to apply the most stringent possible control for confounding variables associated with watching film generally and specifically observing crowds at the speech and other context related stimuli) we find five remaining relationships (see Figure 8.10). These relate to the following positive correlations: positive affect and negative affect, positive affect and altered state of awareness, negative affect and altered state of awareness, negative affect and vivid imagery, and vivid imagery and altered state of awareness. Three out of five of these are interacting with altered state of awareness, with all interconnected.

Figure 8.10: Psygram showing remaining significant relationships during charismatic leadership oratory controlling for the effects of the pseudo attention placebo.
8.4.6 Overall change in pattern effect for charismatic leadership oratory compared to controls (*Hypothesis C2*)

**Pre-Jennrich Test preparatory work**

The Jennrich Test is recommended by Pekala (1991: 235) as the most appropriate test to use to assess pattern effects in relation to the PCI major and minor dimensions, providing that there is a large sample. Pekala recommends 10 times the number of dimensions used in the analysis as a minimum (i.e. \(n > 120\)). As in 1991, there is still, however, no readily available statistical programme for the application of the Jennrich Test and it is not available in SPSS, or other standard statistical packages. Therefore, MATLAB 2012a was programmed to carry out the Jennrich Test using open source coding (Vermoken, 2008). Pekala also notes that the Jennrich Test (despite being the most appropriate for PCI major dimension pattern analysis) is designed for independent groups and that therefore, where used with correlated groups, will be a more conservative test. In the light of this, the level of alpha was set at \(\alpha = 0.05\). A further potential analytical issue with the test is that it may be necessary to correct for variance differences. This is because significantly greater variability for PCI major dimension in one stimulus condition may result in there being a higher correlation for that condition than for another with significantly less variability. The approach below, recommended by Pekala (1991), was therefore applied.

Prior to carrying out the Jennrich Test, intercorrelation matrices were constructed for the PCI major dimension correlations (using SPSS Pearson Product-Moment Correlation Coefficient) for each of the three conditions. Pekala (1991: 241) suggests that the variance for individual major dimensions be assessed and an estimated reduced correlation be calculated for any ‘inflated’ correlations, using the following formula (based on Guildford and Fruchter (1978: 325-327):

\[
\hat{r}_c = \frac{r_u (S_c / S_u)}{\left[1 - r_u^2 + r_u^2 (S_c^2 / S_u^2)\right]^{1/2}}
\]
where:

- $r_c$ = desired correlation corrected using the standard deviation of the group with reduced variance
- $r_u$ = actual unrestricted correlation
- $S_c$ = standard deviation of group that needs to be corrected because its standard deviation is significantly higher than that of the other group
- $S_u$ = standard deviation of group with a standard deviation significantly lower than that of the other group.

In the light of this, following an initial use of the Jennrich Test, individual PCI major dimension variance was assessed using Bartlett’s Box F Test. Estimated correlation reduction was carried out and the test was repeated with the correlation reduced for one variable: this was inward absorbed attention.

**Jennrich Test results**

In order to assess overall pattern effect change between conditions, and therefore make an assessment related to altered state of consciousness applying Tart’s theories, the Jennrich Test compared the equity associated with intercorrelation matrices for the control conditions with that for charismatic leadership oratory. There was a significant difference between both the eyes open sitting quietly condition and charismatic leadership speech ($\chi^2(66) = 180, p = .0001$), and the attention placebo condition (archive film) and the speech condition ($\chi^2(66) = 149, p < .0005$). There was also a significant difference between the archive film and eyes open sitting quietly condition ($\chi^2(66) = 107, p = .001$).

8.4.7 Descriptive statistics for hypnosis compared to conditions in the present study

**Prior to comparison**

Prior to the descriptive comparison below, drawing up of a Phenomenological Intensity Profile (Pekala, 1991) of mean intensity scores for major dimensions took place (Figure 8.11), so that a visual comparison of intensity levels could be
made between present study major dimensions and hypnosis in the condition described in Pekala and Forbes (1988) and Pekala and Ersek (1992-1993).

As noted above, Pekala supplied data for this hypnosis condition for use in the present study. Average mean major dimension intensity level was also calculated and compared. A further comparison was then made of the confidence intervals for the charismatic speech condition compared to hypnosis.

**Figure 8.11: Phenomenological intensity profile for present study untransformed major dimension means with the addition of data from a prior hypnosis study supplied by Ronald J. Pekala**

![Graph showing intensity profile](image)

*Hypnosis major dimension means compared to the means in the present study*

Comparison of the profile of mean intensity scores for hypnosis compared to conditions in the present study (Figure 8.11) indicates a different profile compared to both charismatic leadership oratory and the two control conditions in the present study. In particular, hypnotic induction appears to generate a
number of lower intensity levels particularly for rationality, self-awareness, memory, volitional control, vivid imagery and internal dialogue, whilst at the same time increasing the intensity of experience in relation to altered state of awareness.

Accepting the limitation of different sample size (n = 121 versus n = 246), in order to compare the major dimension means between the Pekala hypnosis data and charismatic leadership oratory in a more systematic way, 95% confidence intervals using the data supplied by Pekala were calculated (see Table 8.2). Only the confidence intervals for altered experience overlapped between charismatic oratory and hypnosis.

Calculating the average level of intensity for all 12 major dimensions and comparing this across conditions illustrate the extent to which hypnosis appears to attenuate overall means intensity for major dimensions compared to the condition in the present study. Charismatic leadership had the highest overall average major dimension intensity level (M = 3.13) and hypnosis the lowest (M = 2.49). The means for eyes open sitting quietly and the archive film were between these two levels (M = 2.90 and M = 2.94, respectively). There is one other set of whole sample PCI major dimension hypnosis intensity levels available (in Pekala, 1991: 139, from Pekala, Steinberg and Kumar, 1986) in a descriptive table comparing hypnosis for a whole group (n = 173) with an eyes closed sitting quietly condition (n = 173) and an eyes open condition (n = 110). The average intensity level for major dimensions was similar to the above, with in turn an attenuation of overall intensity during hypnosis (M = 2.54) compared to both the eyes open (M = 3.18) and eyes closed conditions (M = 3.31).

8.4.8 Rank order of phenomenological intensity for hypnosis compared to the charismatic leadership oratory condition and baseline control condition, in the present study (Hypothesis C3)

Prior to analysis

Prior to analysis, the rank order of mean major dimension intensity levels and the data from the hypnosis study supplied by Pekala (similarly major dimension means) were calculated (1 = lowest, 12 = highest). These are given in Table 8.3.
Comparing the hypnosis major dimension orders to the conditions in the present study, the following differences are observable. One major dimension (negative affect) shared the same rank order during charismatic leadership oratory and hypnosis. Six major dimension intensity levels for charismatic leadership oratory were within one rank order position of hypnosis (rationality, positive affect, self-awareness, memory, volitional control, vivid imagery) and five within two rank order positions (arousal, inward absorbed attention, altered experience, vivid imagery and internal dialogue). The remaining dimension intensity level (altered state of awareness) was four positions away from that during hypnosis.

Table 8.2: 95% confidence intervals for charismatic leadership oratory untransformed means and hypnosis major dimension intensity levels supplied by Ronald J. Pekala

<table>
<thead>
<tr>
<th>Major dimension</th>
<th>Charismatic speech (n = 121)</th>
<th></th>
<th></th>
<th>Hypnosis (n = 246)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>95% CI Upper</td>
<td>95% CI Lower</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Rationality</td>
<td>4.50</td>
<td>1.21</td>
<td>4.58</td>
<td>4.43</td>
<td>3.42</td>
<td>1.75</td>
</tr>
<tr>
<td>Positive affect</td>
<td>1.90</td>
<td>1.19</td>
<td>1.98</td>
<td>1.83</td>
<td>1.47</td>
<td>1.45</td>
</tr>
<tr>
<td>Arousal</td>
<td>2.49</td>
<td>1.55</td>
<td>2.59</td>
<td>2.40</td>
<td>1.27</td>
<td>1.40</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>3.98</td>
<td>1.25</td>
<td>4.10</td>
<td>3.90</td>
<td>3.11</td>
<td>1.83</td>
</tr>
<tr>
<td>Memory</td>
<td>4.73</td>
<td>1.04</td>
<td>4.80</td>
<td>4.67</td>
<td>3.43</td>
<td>1.92</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>3.74</td>
<td>0.86</td>
<td>3.80</td>
<td>3.69</td>
<td>4.12</td>
<td>1.28</td>
</tr>
<tr>
<td>Negative affect</td>
<td>1.71</td>
<td>1.11</td>
<td>1.80</td>
<td>1.64</td>
<td>0.59</td>
<td>0.94</td>
</tr>
<tr>
<td>Altered experience</td>
<td>2.35</td>
<td>1.23</td>
<td>2.40</td>
<td>2.28</td>
<td>2.29</td>
<td>1.34</td>
</tr>
<tr>
<td>Volitional control</td>
<td>3.43</td>
<td>1.21</td>
<td>3.51</td>
<td>3.36</td>
<td>2.64</td>
<td>1.71</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>3.27</td>
<td>1.43</td>
<td>3.36</td>
<td>3.18</td>
<td>2.43</td>
<td>1.70</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>2.86</td>
<td>1.85</td>
<td>2.98</td>
<td>2.75</td>
<td>1.81</td>
<td>1.76</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>2.56</td>
<td>1.68</td>
<td>2.67</td>
<td>2.46</td>
<td>3.34</td>
<td>1.96</td>
</tr>
</tbody>
</table>
Compared to the baseline control condition in the present study there were three major dimensions that shared the same rank order during hypnosis (rationality, negative affect and vivid imagery); positive affect, memory and volitional control were one rank order position away.

All other dimensions were two or more rank order positions away: altered experience three rank order positions; arousal and self-awareness, also three; inward absorbed attention, internal dialogue and altered state were five away.

**Table 8.3: Rank order of intensity for major and minor dimensions in the present study (n = 121) and for hypnosis (Harvard induction) (n = 246)**

<table>
<thead>
<tr>
<th>Major dimension</th>
<th>Eyes open sitting quietly</th>
<th>Archive film</th>
<th>Charismatic leadership speech</th>
<th>Hypnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Positive affect</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Arousal</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Memory</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Negative affect</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Altered experience</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Volitional control</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

For hypnosis compared to the pseudo attention placebo in the present study, two dimensions shared the same rank order (negative affect, altered experience and vivid imagery), three were one position away (rationality, memory, positive affect) and the rest were all two or more positions away. Three (self-awareness, inward absorbed attention and volitional control) were two positions away. Two (arousal and internal dialogue) were three positions away and one (altered state of awareness) seven positions away.
Charismatic leadership oratory and hypnosis intensity rank orders compared to the present study control condition

Using SPSS Spearman's Rank Correlation Coefficient, a comparison of the relative strength of relationships between rank order of phenomenological intensity during charismatic leadership oratory and hypnosis compared to the eyes open sitting quietly condition in the present study took place. There was a statistically significant relationship between the rank order of major dimension intensity score during charismatic leadership oratory and hypnosis ($r_s = .88$, $p < .0005$ (one-tailed)), the archive film and hypnosis ($r_s = .70$, $p = .011$ (one-tailed)), archive film and speech condition ($r_s = .91$, $p < .0005$ (one-tailed)) and the eyes open sitting quietly condition and hypnosis ($r_s = .65$, $p = .022$ (one-tailed)).

Proportional reduction in errors (PRE) – interpretation of rank order relationships

Comparing the $r_s^2(x100)$ for the results above allowed for an interpretation of the proportional reduction in errors of prediction when predicting rank on one variable based on rank on another variable. Table 8.4 shows the proportional reduction in errors for major dimension for the three conditions in the present study and hypnosis. This showed errors of prediction reduced by 75% when predicting rank order of major dimension intensity levels for hypnosis from rank order during charismatic leadership. Errors reduced by 42% and 49%, respectively, when comparing hypnosis to the eyes open and archive film condition.

This suggests that in terms of rank of means, hypnosis during the study by Pekala and Forbes (1988) (and used in Pekala and Ersek (1992-1993) was more similar to charismatic leadership oratory than to the two controls in the present research.
Table 8.4: Proportional reduction in errors (PRE) for major and minor dimensions and three conditions (eyes open sitting quietly (n = 121), archive film (n = 121), charismatic speech (n = 121) and hypnosis (n = 246))

<table>
<thead>
<tr>
<th>Condition</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Eyes open</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Archive film</td>
<td>84%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Charismatic speech</td>
<td>83%</td>
<td>84%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Hypnosis</td>
<td>42%</td>
<td>49%</td>
<td>75%</td>
<td></td>
</tr>
</tbody>
</table>

8.4.9 Phenomenological pattern effects for charismatic leadership oratory (present study) compared to hypnosis (Hypothesis C3)

Preliminary analysis to determine the cut-off point for graphing the two psygrams with different sample sizes

Using the same conventions discussed above, psygram construction took place using the intercorrelation matrices for hypnosis supplied by Pekala (Appendices X and Y). As discussed above, this data relates to the same testing of the effects of hypnotic induction with 246 nursing students reported in Pekala and Ersek (1993-1994) and in Pekala and Forbes (1988).

Because the sample size for the intercorrelation matrices supplied by Pekala was n = 246 compared to the final sample in this present study of n = 121, additional calculations were necessary. Comparing psygrams for different sized groups requires the adjustment of the lower limit for diagramming variance for the psygram with the largest sample. This is because the lower cut-off for diagramming variance in common (based on significant correlations) will not be the same for different-sized groups (Pekala, 1991). To mitigate this issue, two analyses using G*Power 3.1.2 (Faul et al., 2007; 2009) were carried out to calculate the level of variance in common for the additional hypnosis psygram (n = 246) that would be the equivalent of the alpha used in the present study (n = 121). First, results from a sensitivity power analysis calculated the exact cut-off point (p < .0005) in the present study and found it to have a 9.7% variance in common (r = +/- .31[8]). This was followed by a criterion analysis.
which showed that the equivalent cut-off for a psygram of n = 246 was 12.36% (r = +/- .35[3]).

**Charismatic leadership oratory (present study) versus hypnosis (using data from previous research supplied by Pekala)**

Figure 8.12 (from Appendix X) shows the psygram for the pattern of relationships between pairs of PCI major dimensions reported during hypnosis (Harvard induction). Rounded intensity levels were higher during charismatic leadership oratory than during hypnosis for rationality, self-awareness, memory, negative affect, vivid imagery and internal dialogue. Inward absorbed attention, altered experience, volitional control and altered state of awareness were all similar for both conditions. No rounded intensity levels were lower during charismatic leadership oratory than during hypnosis.

**Figure 8.12: Psygram associated with hypnosis during the Harvard induction (constructed from intercorrelation matrix supplied by Ronald J. Pekala (same condition and sample discussed in Pekala and Forbes (1988) and Pekala and Ersek (1992-1993)))**

PHGS = 5.85
Regarding pattern effects, there were 10 couplings (out of 22) that were similar during charismatic leadership compared to hypnosis. These include a positive coupling of rationality and memory, rationality and volitional control, positive affect and altered experience, arousal and negative affect, self-awareness and volitional control, memory and volitional control, altered experience and altered state of awareness. Negative couplings that were similar included self-awareness and altered state of awareness, self-awareness and altered experience, and volitional control and altered state of awareness. However, compared to charismatic leadership oratory, hypnosis generates a number of different relationships. Specifically, hypnosis in contrast to charismatic leadership oratory creates positive couplings of rationality and self-awareness, rationality and vivid imagery, positive affect and visual imagery, arousal and internal dialogue, arousal and volitional control, self-awareness and memory, and memory and vivid imagery. There are also differences in terms of the generation of a negative relationship. In contrast to charismatic leadership oratory, hypnosis generates negative couplings between rationality and altered state of awareness, arousal and inward absorbed attention, self-awareness and altered experience.

Furthermore, charismatic leadership oratory generates a number of couplings that are not present during hypnosis. In contrast with hypnosis, there are during charismatic leadership oratory positive relationships between positive affect and altered state, positive affect and altered state of awareness, negative affect and altered experience, altered experience and vivid imagery, and vivid imagery and altered state of awareness. This said, all the negative relationships present during charismatic leadership oratory (three) are also present during hypnosis. These were also present, however, during the pseudo attention placebo condition.

In addition, there is an increased strength of the relationship during hypnosis compared with charismatic leadership oratory for the positively coupled characteristics of rationality and volitional control (doubled), and self-awareness and volitional control (doubled). There are also increases in the shared negatively coupled characteristics of self-awareness and altered state of
awareness (nearly tripled), self-awareness and altered experienced (doubled), and volitional control and altered state of awareness (nearly quadrupled).

Returning to the evidence above in Figure 8.10, which illustrated those relationships for charismatic leadership oratory which remain after the removal of all of the relationships present in both the pseudo attention placebo and the charismatic leadership oratory, a comparison with pattern effects for hypnosis shows that none of these relationships are also present during hypnosis (see Table 8.5).

Table 8.5: Remaining significant relationships (between major dimensions during charismatic leadership oratory (after controlling for shared coupling with the pseudo attention placebo condition)) compared to hypnosis

<table>
<thead>
<tr>
<th>Charismatic leadership oratory</th>
<th>Compared to hypnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive relationship between positive affect and negative affect</td>
<td>Not present during hypnosis</td>
</tr>
<tr>
<td>Positive relationship between positive affect and altered state of awareness</td>
<td>Not present during hypnosis</td>
</tr>
<tr>
<td>Positive relationship between altered state and negative affect</td>
<td>Not present during hypnosis</td>
</tr>
<tr>
<td>Positive relationship between negative affect and vivid imagery</td>
<td>Not present during hypnosis</td>
</tr>
<tr>
<td>Positive relationship between vivid imagery and altered state of awareness</td>
<td>Not present during hypnosis</td>
</tr>
</tbody>
</table>

8.4.10 Overall change in pattern effect for charismatic leadership oratory compared to hypnosis (Hypothesis C3)

In order to assess how similar the overall pattern is during charismatic leadership oratory compared to hypnosis, the Jennrich Test assessed the equity associated with the intercorrelation matrices for the two conditions. There was a significant difference between the hypnosis condition and the speech condition ($\chi^2(66) = 396$, $p < .0001$).

For completeness, the intercorrelation matrices for the eyes closed sitting quietly condition (also supplied by Pekala) were compared to both the eyes open sitting quietly condition and hypnosis. The psygram for the eyes closed sitting quietly condition above can be found below in Figure 8.13 (from
Appendix Y). These two tests indicated significant differences between the control in Pekala and Forbes (1988) for the whole sample and hypnosis ($\chi^2(66) = 358, p < .0001$), and between the baseline control in Pekala and Forbes (1988) (eyes closed) and the control in the present study (eyes open) ($\chi^2(66) = 179, p < .0001$).

Firstly, these additional results testify to the sensitivity of the PCI in detecting differences between the effects of eyes closed versus eyes open physiology. Secondly, they illustrate that hypnosis seems to generate an altered state of consciousness in relation to changes in the overall pattern of consciousness not only for highly hypnotisable individuals but also for a population sample as a whole. Finally, it would appear that, although charismatic leadership oratory appears to generate an altered state of consciousness, this is a different altered state to that of hypnosis, even though, as we have seen in Chapters 6 and 7, there are trance depth relationships between the conditions.

Figure 8.13: Psygram associated with eyes closed sitting quietly, built from the intercorrelation matrix supplied by Ronald J. Pekala
8.4.11 Discounting gender and nature of employment role as potential confounding variables in relation to assessments of the effect of charismatic leadership oratory on PCI major and minor dimension intensity levels

In the previous two chapters, assessments took place to determine whether gender or the nature of participant job role affected the results for trance depth and adapted PCI-Hypnotic Assessment Protocol items. Exploration of the same question took place for the PCI major dimension intensity levels using the transformations discussed previously. Concerning the question of the effect of gender on PCI major and minor dimensions during the charismatic leadership speech, because of the large imbalance in sample size in gender sub-groups, and distributions, analysis used a non-parametric test. Independent-Samples Mann-Whitney U Tests indicated no differences between males and females for any of the PCI major dimensions during charismatic leadership oratory. For broad occupation type (client-facing or non-client-facing) and whether these had an effect on phenomenological intensity, Independent Samples Mann-Whitney U Test found no differences between occupation type for any of the PCI major and minor dimensions (see Appendix T).

8.5 Discussion

Does charismatic leadership oratory alter the structure of consciousness in relation to: a) changes in PCI major and minor intensity levels (Hypothesis C1a)?

With regard to alterations to consciousness during charismatic leadership oratory, the present research found that after controlling for the effects of watching film from the same date and location as the speech (including crowd scenes) there remained a number of significant changes to the structure of consciousness. It would appear that for a whole group of people experiencing charismatic leadership oratory there is an increased sense of altered state of awareness in which their state of consciousness feels ‘different or unusual’ to what it ordinarily is. In conjunction with this, people also feel an alteration in their experience of the world and higher levels of arousal related to muscle
tension and tightness. In terms of affective experience, people have increased negative emotions relating to anger and sadness, but not fear.

These results are consistent with some of the theorising related to the role of a leadership speech in charismatic and crisis contexts, discussed in Chapter 2, particularly regarding the contribution of emotional arousal (see for example Burns, 1975). Together with this, Popper (2002a) speculates that leadership in some situations (what he calls ‘hypnotic’ leadership) may be effective because it generates a ‘loss of self’ in an individual or group. The present research confirms such an effect related to the PCI major dimension construct of volitional control, which was lower for the charismatic leadership speech. Volitional control relates to a person’s ability to be ‘wilfully controlling’ what they experience, particularly in terms of what they are paying attention to and their ability to control what thoughts and images ‘pop’ into their mind. Thus, it would appear that during a charismatic leadership speech, people begin to lose control of their own thoughts and imagination, surrendering this to the orator. There was no similar loss of self-awareness during the speech, suggesting that people’s sense of conscious awareness was not lost and they maintained a feeling of identity.

*Does charismatic leadership oratory alter the structure of consciousness in relation to: b) paired major dimension of consciousness pattern changes (Hypothesis C1b)?*

After controlling for the effects of the pseudo attention placebo, charismatic leadership oratory was found to generate five unique bonds between subsystems of consciousness. Specifically, as the intensity of altered state of awareness increases, so does vivid imagery, positive affect and negative affect, with negative affect bonded to both vivid imagery and altered state and a similar bonding of positive affect, negative affect and altered state. By extension, this evidence supports previous research into the effects of charismatic leadership oratory that points to the importance of emotions (Le Bon, 1895/1947; Freud, 1922/2001; Barsade, 2002; Bono and Ilies, 2006; and Sy, Côté and Saavedra, 2005) and the creation of a vision in the mind of followers (Burns, 1975). Burns specifically points to a relationship between
emotions, vision and the achievement of goals. The psygram pattern yielded in the present study for the charismatic leadership speech condition appears to graph precisely this relationship for the whole sample. It is worth noting, in addition, that it is this particular bonding that appears to be the specifically added level of influence on consciousness provided by the leader after controlling for other factors. Alongside this evidence, the dual bonding of both positive and negative affect could support observations about charismatic leadership and mood shifting between positive and negative emotions, noted by Burns (1975) and Popper (2002a).

**Does charismatic leadership oratory generate an altered state of consciousness in relation to overall pattern effect change (Hypothesis C2)?**

Following analysis of overall pattern change and the question of whether charismatic leadership oratory generates an altered state of consciousness, applying Tart’s theories it was clear that there was both an overall significant change compared to the baseline control condition and to the pseudo attention placebo. It is possible, applying the benchmarks defined by Pekala and colleagues, to assert, therefore, that the effects of charismatic leadership oratory are commensurate with an altered state of consciousness.

Drawing the evidence together from the first two analyses above and the evidence in Chapters 6 and 7, the main conclusion to be drawn is that there appear to be three ways in which charismatic leadership is similar to hypnosis. Firstly, it appears to modulate consciousness sufficiently to generate an altered state of consciousness, something which may be analogous to Le Bon’s notion of ‘group mind’ (1895/1947). Secondly, as was noted in Chapter 4, underpinning this modulation appears to be an interaction between the 10 PCI variables used in the predicted Harvard Group Score regression equation. This suggests a relationship to the amplification and attenuation of trance depth found during hypnosis – a function of the normal distribution of hypnotic susceptibility in the general population (Hilgard, 1965). Thirdly, a person’s ability to respond to imaginative suggestion may in turn mediate these effects. However, such similarities could exist if the two conditions were related but not
the same (i.e. if they were both subdomains of the wider domain of suggestion, as discussed above, but not identical ones). This inevitably raises the question as to whether the structure of consciousness as a whole, once altered by charismatic leadership oratory, is in fact the same structure as that found during hypnosis.

**Does charismatic leadership oratory alter the structure of consciousness in a similar way to a hypnotic induction for a whole sample (Hypothesis C3)?**

It is clear from the analysis that there are both similarities and differences between hypnosis for a whole sample group and charismatic leadership oratory. Firstly, where hypnosis appears to attenuate over mean intensity of experience, charismatic leadership oratory appears to amplify phenomenological intensity. Furthermore, the effects of a hypnotic induction compared to a charismatic speech only appear to share one level of intensity in common (altered experience). However, in relation to the rank order of major dimension intensity levels there is similarity between hypnosis and charismatic leadership. Turning to Izard’s concept of altered state of consciousness, charismatic leadership oratory modulates the bonding between subsystems of consciousness differently to hypnosis, with none of the five unique bonding patterns in charismatic leadership oratory (compared to the attention placebo) shared by hypnosis. Jennrich Test results further confirm that charismatic leadership appears to represent a different overall altered state of consciousness from hypnosis. Thus, the inevitable conclusion follows from this, that although related, perhaps in terms of trait susceptibility, the two conditions (hypnosis and charismatic leadership oratory) do not have to alter consciousness in precisely the same way. As the psygrams above demonstrate, charismatic oratory in particular appears to place greater affective demands on consciousness, hypnosis greater demands for involuntariness.
8.6 Conclusions in relation to Proposition C

This chapter sought to address the third proposition explored within Main Study C:

**Proposition C – Mapping of states of consciousness during charismatic oratory, and comparing these to what has been found during hypnosis, shows that oratory generates an altered state of consciousness**

In doing so, it sought to use the PCI’s abilities to measure in a granular way the effects of a stimulus condition on phenomenological experience of consciousness. This was an important addition to the present study as it enabled a detailed assessment of whether the fine-grained aspects of conscious experience were similar to those found in prior hypnosis research alongside the apparent shared underlying relationships.

Although there appear to be some underlying similarities between the effect of hypnosis and charismatic leadership, as are noted above, at the level of the detailed experience of consciousness during charismatic oratory the effects for a whole group of individuals are quite different to those found after hypnotic induction. This said, the evidence above clearly affirms and aligns with a great deal of the management and leadership literature in supporting the importance of areas such the engagement of both positive and negative emotions and imagery. Equally, it points to the possible mechanisms by which a leader may (in Popper’s analogy) ‘spark’ the fire of charismatic leadership (as it is perceived by followers) – specifically, by engaging and connecting emotions to imagery and beginning the process of emotional contagion within a crowd. Although at the top level of the detail of conscious experience during the speech there were few similarities to hypnosis, nonetheless it appeared (drawing on Tart’s notion of altered state of consciousness, as operationalised by the PCI) that charismatic leadership does appear to generate an altered state of consciousness, albeit once again a different one from hypnosis.

Drawing the evidence together, charismatic leadership and hypnosis, although sharing underlying similarities (increased trance depth, deep trance states for some, a normal distribution within the population as a whole, interaction
between trance depth and imaginative suggestibility, and the generation of an altered state of consciousness), in fact represent different states of consciousness – and from a Tart theoretical perspective, different discrete states of consciousness (d-SOCs). Applying suggestions made by Popper (2002a), the generation of an altered state of consciousness during charismatic leadership oratory perhaps raises one more question: namely, the question of what might be the long-term effects of finding oneself in a group experiencing an altered state of group consciousness. It seems possible, in the light of the findings above that if this took place for a prolonged period and group feelings were intensified by a crisis, that significant and hard-to-reverse changes to people’s state of consciousness could occur. It is even possible that the charisma-induced state could replace their former b-SoC as their baseline state of consciousness – with considerable implications for group behaviour.

One can only speculate on such effects. The fact, however, that charismatic oratory can generate altered state conditions in a population group (even in laboratory conditions far removed from a real leadership context) is perhaps remarkable and certainly seems to affirm some of Popper’s contentions concerning the processes that were at play during Jonestown and in the Manson family (Popper, 2002a). In both these cases, and in many examples from charismatic leadership and in the case of cults, the charismatic leader appears to select individuals, rather like the stage hypnotist, eventually isolating the most susceptible for deeper levels of influence.

This leaves one final area of exploration within the capabilities of the present study’s design. In the next section, the same method used in prior research to identify nine hypnotic types from PCI major dimension intensity results (Pekala, 2007) will be used to determine whether there are follower susceptibility types in response to charismatic oratory and whether these types share any common features with those associated with high and low hypnotic susceptibility groups.
Chapter 9 – Main Study D: Follower types and their phenomenology of consciousness during charismatic leadership oratory

9.1 Areas of the research design made use of in Main Study D

Recapping the research design discussed in Chapter 5, Main Study D made use of data from all areas of the design, as indicated in Figure 9.1.

Figure 9.1: Areas of the research design which apply to the analyses in Main Study D
9.2 Introduction: hypnotic types

9.2.1 Evidence for existence of follower type from prior PCI hypnosis research

Pekala and Forbes (1997) suggest that the debate about ‘altered state’ and hypnosis may be better understood by looking at data related to types of hypnotically susceptible individuals, an argument which it could be said parallels the discussions in leadership theory relating to the need to study followers as well as leaders (Northouse, 2004). Pekala and Forbes (1997) note that the debate in hypnosis has focused on the extent to which an altered state of consciousness might be necessary in order to generate the types of effects produced during, and considered typical of, hypnosis. Barber (1969), for example, proposed that the same effects could occur in response to motivation instructions and that therefore altered state was not necessary for the creating of classic hypnotic effects. Pekala and Forbes (1997) in response to this, argue that:

There may be some individuals that can produce visual hallucinations at will without feeling major losses in volitional control or alteration in awareness and without an induction. (Pekala and Kumar, 1997: 222)

In reference to the empirical evidence which supports this position, they point to cluster analysis results from their studies which have identified nine hypnotic types and particularly to what they call ‘visualising high-mediums’ (Hypnotic Type V), as a possible example of this. Visualising high-mediums (or ‘visualisers’) are individuals who have the highest levels of visual imagery during hypnosis of the nine types but who also have high levels of self-awareness and intact memory intensity levels similar to those attained by ‘classical lows’ and ‘relaxed lows’ (Hypnotic Types I and II). Visualisers demonstrate these characteristics even though they are likely to attain a hypnoidal state of around pHGS = 6.06 (compared to the depth of trance attained by the two ‘low’ hypnotic types (pHGS = 2.88 and 3.68) respectively). Furthermore, although the amount and vividness of their internal imagery during hypnosis is the highest of all types, they do not attain a high hypnoidal state (pHGS > 7.0). Likewise, Pekala and Kumar (2007) note that other
individuals may only be able to generate similar effects with major decreases in volitional control and alterations in the structure of consciousness (and suggest that ‘fantasy highs’ (Hypnotic Type VIII) may be an example of this).

Pekala and Forbes (1997) named the nine hypnotic types as in the table below. Table 9.1 (adapted from Pekala and Forbes, 1997) includes trance depths and Harvard Group Scale of Hypnotic Susceptibility means for each type. As the table shows, Types V to IX all had group mean scores on the Harvard Group Scale of Hypnotic Susceptibility of >7.0 but have very different phenomenological experiences of trance (according to pHGS levels), with only Types VIII and IX attaining a high hypnotic state. Names reflect high and low intensity characteristics compared to other types.

Table 9.1: The nine hypnotic types, trance depth and Harvard means (from data in Pekala and Forbes, 1997)

<table>
<thead>
<tr>
<th>Hypnotic type</th>
<th>Name</th>
<th>pHGS</th>
<th>Harvard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>Classic lows</td>
<td>2.88</td>
<td>1.91</td>
</tr>
<tr>
<td>Type II</td>
<td>Relaxed lows</td>
<td>3.68</td>
<td>3.54</td>
</tr>
<tr>
<td>Type III</td>
<td>Non-dialoguing mediums</td>
<td>4.87</td>
<td>5.22</td>
</tr>
<tr>
<td>Type IV</td>
<td>Dialoguing mediums</td>
<td>5.01</td>
<td>5.38</td>
</tr>
<tr>
<td>Type V</td>
<td>Visualising high-mediums</td>
<td>6.06</td>
<td>7.67</td>
</tr>
<tr>
<td>Type VI</td>
<td>Rational high-mediums</td>
<td>6.81</td>
<td>7.42</td>
</tr>
<tr>
<td>Type VII</td>
<td>Dialoguing high-medium</td>
<td>6.86</td>
<td>7.12</td>
</tr>
<tr>
<td>Type VIII</td>
<td>Fantasy highs</td>
<td>7.10</td>
<td>7.85</td>
</tr>
<tr>
<td>Type IX</td>
<td>Classic highs</td>
<td>7.60</td>
<td>7.85</td>
</tr>
</tbody>
</table>

For the two ‘signature’ intensity level changes related to hypnosis (volitional control and altered state of awareness), there is an increase in altered state of awareness from Type I to IX and a decrease in volitional control (see Figure 9.2 below), with a levelling off of the intensity of altered state of awareness for Types V–IX.
When it comes to the characteristics of the nine hypnotic types (Pekala and Forbes, 1997), these can be summarised in the following way. Classic lows (Type I), with a depth of trance of pHGS = 2.88, have the highest level of muscle tension (arousal) and most intact memory, rationality and self-awareness. They also have the highest levels of internal dialogue and experience the least decline in volitional control. Relaxed lows (Type II), with slightly increased depth of trance (pHGS = 3.68), have a similar phenomenological profile of intensity scores to classic lows. However, they experience low levels of arousal (muscle tension) and less internal dialogue. Nondialoguing mediums (Type III) experience a deeper trance state than relaxed lows (pHGS = 4.87) and are similar in relation to their experience of consciousness to the Type IV, except for an absence of internal dialogue. Dialoguing mediums (Type IV) attain a trance depth higher than non-dialoguing mediums; and are similar in relation to profile except that they experience more internal dialogue during hypnosis. Visualisers (Type V) experience the highest
levels of visual imagery and self-awareness. They have the next highest intact memory after classic and relaxed lows and attain an average trance depth of pHGS = 6.06. Rational high-mediums (Type VI) and dialoguing high-mediums (Type VII) attain similar levels of trance depth (pHGS = 6.81 and 6.86, respectively). However, they differ in that rational high-mediums have less internal dialogue and more rationality, whilst dialoguing high-mediums experience the second-highest levels of internal dialogue (after classic lows) and although are similar to rational high-mediums in most respects, experience more internal dialogue and less rationality. Fantasy highs (Type VIII) as well as attaining the second-highest depth of trance (pHGS = 7.10), have the second-highest intensity levels for imagery after visualisers. Classic highs (Type IX) attain the greatest depth of trance (pHGS = 7.60) and in addition experience the lowest levels of internal dialogue, imagery memory, rationality, and self-awareness.

9.3 Proposition D and hypotheses related to a search for follower types using cluster analysis

At this point in the analysis, two interpretations with different implications were possible. Firstly, if trance depth and intensity level evidence are emphasised, this would lean the interpretation towards a shared domain relationship in which hypnotic susceptibility relates to follower susceptibility. One implication of this might be that a charismatic leadership speech is acting in the same way as a hypnotic susceptibility test when deployed by a stage hypnotist (i.e. as a means of recruiting high hypnotisables, discussed in more detail in Chapter 11).

Alternatively, emphasising the differences in phenomenological pattern described above might lean the interpretation towards an explanation in which charismatic leadership is seen as one of a number of trance depth amplifying states but not necessarily a sister condition to hypnosis. After all, as the trance tables in Appendix B illustrate, many conditions increase trance depth compared to a baseline control.

Cluster analysis (Pekala and Kumar, 2007) had the potential to resolve this interpretative dilemma by identifying sub-groups with profiles of response to oratory that are similar to hypnotic susceptibility types in response to hypnosis,
finding very different types or finding no clear types at all. Specifically, this chapter presents findings with regard to the last of the four propositions:

**Proposition D** – The approach used in previous studies to identify hypnotic types in response to hypnosis is able to identify follower types when applied to a charismatic leadership speech. Furthermore, these types have similarities to hypnotic types

Pekala and colleagues have shown that cluster analysis of major dimension intensity levels in response to a standard hypnotic protocol can identify nine hypnotic types (Pekala, 1991; Pekala, Kumar and Maurer, 1995; Forbes and Pekala, 1996; Pekala and Forbes, 1997). Pekala and Kumar (2007) suggest that such results provide evidence for ‘subtle variation’ in the trance-related hypnotic responsiveness of different individuals and that even where people attain similar levels of hypnotic susceptibility on traditional scales, their phenomenological experience may vary according to type. Bearing in mind the results presented in the previous chapters (particularly the relationships between how influenced a person says they have been, their trance depth and levels of internal imagery in response to oratory content), it seems reasonable to suggest that, paralleling the approach taken by Pekala and colleagues, different follower types could be identifiable from major dimension results.

The notion of follower type, as discussed in the literature review, has become an increasing focus of leadership theory and particularly theories which seek to explain the nature of charismatic leadership and contexts (Chaleff, 1995; Kellerman, 2007; 2008; Kelley, 1992; Townsend, 1999; Zaleznik, 1965). Applying the same approach used by Pekala and Forbes (1997) in their investigation of hypnotic types to the results in the present study allowed for the exploration of the following hypotheses:

- **Hypothesis D1** – Follower type mediates the structure of consciousness in response to charismatic leadership oratory
- **Hypothesis D2** – Follower types have intensity level characteristics (such as higher altered state of awareness with low volitional control for hypnotic types VII, VIII and IX versus the opposite for hypnotic types I and II) and relationships to adapted PCI-Hypnotic Assessment Protocol
items that are also associated with hypnotic type differences during hypnosis

- **Hypothesis D3** – Follower types have characteristics that might identify them as the five follower types argued for by Kellerman (2007; 2008)

In relation to this final hypothesis it was Kellerman’s model (2007; 2008) that was chosen rather than other follower typologies, as Kellerman is the only authority proposing specific types to also use the term ‘hypnotic’ (2008: 99-100) directly in relation to one of these (the ‘diehards’).

**9.4 Results**

Paralleling the analytical process employed by Pekala and Forbes (1997), K-Means cluster analysis (Hartigan, 1975) was performed, using the 12 PCI major dimensions during charismatic leadership oratory as the dependent variable and the participants as the independent variable. Iterate and classify was used with a maximum of 10 iterations. Successive cluster analyses (in SPSS) took place to identify the maximum number of viable clusters (i.e. until the groups splintered into individual or very small participant groups). This identified five follower types. Beyond five types, no further viable type groupings were discernible, as there was significant splintering into individual or very small groupings.

Phenomenological intensity profile construction took place for each of the types (for descriptive purposes only, since cluster analysis had already identified types through statistical analysis). Exploration of the question as to whether (in terms of overall pattern effect) an altered state of consciousness had taken place for each type compared to control conditions used the Box Test.

Following the graphing of hypnoidal state as a function of follower type and condition, non-parametric tests assessed change in hypnoidal state across and between conditions for each of the follower types. No construction of psygrams took place for types because only one of the clusters had a sample size > 30 and intercorrelation matrices may be unstable below this level; also there was a wide difference between the cluster sample sizes, making a direct comparison of paired pattern effects across types unreliable (Pekala, 1991).
Preliminary analysis of the five types identified

SPSS ANOVA results indicated that the cluster analysis had successfully identified five cluster types that were significantly different across all of the 12 PCI major dimensions during the charismatic leadership speech (see Table 9.2).

9.4.1 Analysis of follower types

Because of the relationships between self-reported depth, hypnoidal state and imagoic suggestibility described in Chapter 7, and the number of parallel increases between variables that such labelling exposes, the decision was made to label Types I to V according to increases in mean for each cluster in relation to how deeply influenced participants felt they had been by the speech. Thus, the label ‘Type I’ was given to the type with the lowest self-reported depth of influence and ‘Type V’ for the follower type that reported being most influenced by the speech. Table 9.2 below shows the results of the cluster analysis with the five follower types also compared to adapted measures from the PCI-Hypnotic Assessment Protocol.

Type V followers – PCI-Hypnotic Assessment Protocol-related measures and phenomenological intensity results

Type V followers (labelled as ‘V’ because of their highest level of self-reported depth of influence during charismatic leadership oratory (M = 8.22)) attained the second-highest hypnoidal state (predicted Harvard Group Score) (M = 6.25) and the highest mean score for imagoic suggestibility (M = 7.15). Although not attaining the deepest level of trance overall, for these individuals the change in hypnoidal state from a baseline eyes open sitting quietly control was the largest of all the five types (MD = 2.23). They also had the highest mean score on the stage hypnosis motor suggestibility tests (M = 3.65).
Table 9.2: Analysis of variance for cluster analysis results

<table>
<thead>
<tr>
<th>Major dimension</th>
<th>F</th>
<th>df</th>
<th>p (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>2.15</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Positive affect</td>
<td>16.5</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Arousal</td>
<td>9.27</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>9.67</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Memory</td>
<td>24.7</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>3.65</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Negative affect</td>
<td>11.7</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Altered experience</td>
<td>38.8</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Volitional control</td>
<td>14.51</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>9.84</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>37.0</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>58.4</td>
<td>(4, 116)</td>
<td>&lt; .0005</td>
</tr>
</tbody>
</table>

When their mean hypnoidal state scores are included within the trance tables (Appendix B), this shows that Type V followers moved from sten 5 (during the baseline control) and sten 6 during the ‘pseudo attention placebo’ to sten 8 during charismatic oratory. This sten score is similar to that attained by one high, two high-medium and two medium hypnotic susceptibility sub-groups during prior hypnosis studies (Pekala, 1991: 275; Pekala and Forbes, 1988; Pekala and Kumar, 1984; Pekala, Kumar and Marcano, 1996) and a similar depth of trance to the sub-group who were blistered during fire-walking (Pekala and Ersek, 1992-1993). Non-blistered participants attained a lower hypnoidal state. Sten 5 was also the level of trance attained by the high absorption sub-group in Kumar and Pekala (1988).
Table 9.3: The five follower types and their mean adapted PCI-Hypnotic Assessment Protocol item and major dimension intensity levels

<table>
<thead>
<tr>
<th>Follower type</th>
<th>PCI-Hypnotic Assessment Protocol adapted measures</th>
<th>PCI major dimension scores for the charismatic leadership speech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-reported depth of influence</td>
<td>Hypnoidal state (predicted Harvard Group score)</td>
</tr>
<tr>
<td>V (n = 27)</td>
<td>8.22</td>
<td>6.25</td>
</tr>
<tr>
<td>IV (n = 18)</td>
<td>7.83</td>
<td>6.38</td>
</tr>
<tr>
<td>III (n = 25)</td>
<td>6.60</td>
<td>4.37</td>
</tr>
<tr>
<td>II (n = 17)</td>
<td>5.53</td>
<td>5.29</td>
</tr>
<tr>
<td>I (n = 34)</td>
<td>5.15</td>
<td>3.91</td>
</tr>
</tbody>
</table>

= Highest
= Second highest
= Second lowest
= Lowest
Regarding PCI major dimension intensity levels, Type V followers had the highest mean for positive affect (M = 2.89), inward absorbed attention (M = 4.20), negative affect (M = 2.54), altered experience (M = 3.48), vivid imagery (M = 4.18) and altered state of awareness (M = 4.31), but the second-lowest level of volitional control (M = 3.03). They also had the second-lowest level of rationality (M = 4.45) and arousal (M = 2.50). In addition, their major phenomenological intensity profile for the three conditions in the present study suggests a considerable modulation to the structure of consciousness during the charismatic leadership speech (Figure 9.3). This modulation appeared at this point in the analysis to have a striking relationship to the profile identified in hypnotic virtuosos during deep trance (Cardeña, 2005) discussed below.

![Figure 9.3: Major dimension phenomenological intensity profile for Type V followers during the three conditions in the present study](image-url)
**Type IV followers – PCI-Hypnotic Assessment Protocol-related measures and phenomenological intensity results**

Type IV followers (with the second-highest levels of self-reported depth of influence \(M = 7.83\)) attained the highest levels of hypnoidal state \(M = 6.38\), the second-highest level of imagoic suggestibility and the second-highest mean score for stage hypnosis suggestibility tests \(M = 3.38\) and for expectancy of influence \(M = 7.19\). Although they attained the highest depth of trance, the difference between their hypnoidal state during the baseline control condition and speech condition was only the second highest \(MD = 2.16\). This change in trance depth between the baseline control condition and speech condition, like follower Type V, moved Type IV followers from sten 5 (during both the baseline control and ‘pseudo attention placebo’) to sten 8 in the trance table.

**Figure 9.4: Major dimension phenomenological intensity profile for Type IV followers during the three conditions in the present study**

![Phenomenological Intensity Profile](image)
Type IV followers also attained the second-highest level of intensity for positive affect (M = 3.74), memory (M = 5.00), inward absorbed attention (M = 3.74), altered experience (M = 3.25) and altered state of awareness (M = 3.37). However, they had the lowest levels of self-awareness (M = 3.13), vivid imagery (M = 2.66) and internal dialogue (M = 0.50). Their expectancy scores were only moderate compared to those of other groups (M = 6.75) (Figure 9.4).

**Type III followers – PCI-Hypnotic Assessment Protocol-related measures and phenomenological intensity results**

Type III followers had relatively moderate levels of self-reported depth of influence (M = 6.60) and the second-lowest levels of hypnoidal state (M = 4.37), with moderate scores compared to the other four groups in the stage hypnosis suggestibility tests (M = 3.35). Although there was only a small difference between their hypnoidal state scores during the eyes open condition and the speech (MD = 0.50), this was enough to move their level of trance from sten 4 (baseline control) to sten 5 (speech condition) in the trance tables, a level of trance most frequently associated with PCI study control conditions. However, this level of hypnoidal state was similar to that also attained during the ‘pseudo attention placebo’ for this sub-group (also sten 5). This said, Type III followers had the highest levels of expectancy (M = 7.24) of all five follower types.

This group of participants attained the highest scores for rationality (M = 5.15), arousal (M = 3.64), self-awareness (M = 4.68), memory (M = 5.30) and internal dialogue (M = 4.74), and the second-highest levels of negative affect (M = 1.91) and volitional control (M = 3.92). However, they attained the second-lowest levels of altered experience (M = 2.15) and altered state (M = 2.22). Graphing of the major dimension intensities for Type III followers, compared to the two control conditions, suggests that this type appears largely unaffected by charismatic leadership oratory, with the exception of their levels of arousal (Figure 9.5).

**Type II followers – PCI-Hypnotic Assessment Protocol-related measures and phenomenological intensity results**

Type II followers (with the second-lowest levels of self-reported depth of influence (M = 5.53)) had the lowest levels of expectancy (M = 4.00) and
second-lowest scores on the suggestibility tests (M = 3.06). Their scores for hypnoidal state, imagoic suggestibility and the difference between control condition depth of trance and that attained during the speech were moderate compared to other groups (M = 5.29, M = 5.82 and MD = 0.90, respectively). Although hypnoidal difference was only moderate compared to the other types, it moved their trance depth from sten 4 (baseline control condition and ‘pseudo attention placebo’) to sten 6 during the charismatic speech (Figure 9.6). This gives Type II a similar trance depth overall during charismatic oratory similar to that experienced by a whole participant group on average during fire-walking (Pekala and Ersek, 1992-1993), recall of religious experience (Wildman and McNamara, 2010) and biodynamic cranio-sacral osteopathy (Nyul, 2009). Sten 6 is also the depth of trance attained for a whole group during various shamanic journeying conditions (Rock, Casey and Baynes, 2006; Rock et al., 2008a; b), some forms of meditation (Löffler, 2007) and during the PCI-Hypnotic Assessment protocol (Pekala et al., 2010b).

Figure 9.5: Major dimension phenomenological intensity profile for Type III followers during the three conditions in the present study
This includes those groups in Appendix B, such as Type II followers, who have also attained ten 6 in research, include the following: individuals with high hypnotic susceptibility and low dissociativity, medium susceptibility with high dissociativity, and high dissociativity individuals generally, during hypnosis (Kumar, Pekala and Marcano 1996); similarly, Harvard score 4 and 6 subgroups during the Harvard induction (Pekala and Kumar, 1984) and medium-hypnotic susceptibility individuals during shamanic monotonous drumming (Maurer et al., 1997).

**Figure 9.6: Major dimension phenomenological intensity profile for Type II followers during the three conditions in the present study**

In terms of their phenomenological intensity scores, Type II followers attained the lowest levels of rationality (M = 2.65), memory (M = 3.04), inward absorbed attention (M = 3.26) and volitional control (M = 2.05). They also had the second-lowest intensity levels for positive affect (M = 1.67), self-awareness (M = 3.18) and vivid imagery (M = 3.14).
**Type I followers – PCI-Hypnotic Assessment Protocol-related measures and phenomenological intensity results**

Type I followers (who described themselves as least influenced by the leadership speech \( M = 5.15 \)) had the lowest hypnoidal state \( M = 3.91 \) and imagoic suggestibility scores \( M = 2.68 \), they also had the second-lowest levels of expectancy \( M = 4.00 \). There was hardly any difference between their hypnoidal state during the control condition and the speech \( \text{MD} = 0.28 \) and they scored the lowest mean score on the state hypnosis suggestibility tests \( M = 2.68 \) (Figure 9.7). Their trance depths for the baseline condition and charismatic speech were both at sten 4 in the trance tables.

**Figure 9.7: Major dimension phenomenological intensity profile for Type I followers during the three conditions in the present study**

In relation to phenomenological intensity, Type I followers achieved the second-highest level of rationality \( M = 4.93 \), self-awareness \( M = 4.50 \) and vivid imagery \( M = 2.47 \) but had the highest levels of volitional control \( M = 4.12 \). They attained the lowest levels of positive affect \( M = 0.96 \), arousal \( M = 1.48 \), negative affect \( M = 0.89 \), altered experience \( M = 1.09 \), and altered state of awareness.
awareness (M = 0.72) and the second-lowest levels for memory (M = 4.88), inward absorbed attention (M = 3.63) and internal dialogue (M = 1.98). The profile of phenomenological intensity for this follower type suggests that this follower type, like Type III followers, remained largely unaffected by the charismatic leadership speech.

9.4.2 Pattern effects and assessment of altered state of consciousness for follower types

Psygrams were not drawn for the five follower types, firstly because of the wide variation in sample size between the groups (making comparisons unreliable) and secondly because intercorrelation matrices are likely to be unstable < 30. However, it was possible to assess overall pattern effect change and therefore whether an altered state of consciousness had taken place during charismatic leadership oratory according to Pekala and colleagues’ method for operationalising Tart’s theories of altered state of consciousness (previously discussed above in Chapter 8) (Tart, 1972; 1975; 1977). In this case, as is recommended by Pekala (1991) this used the Box Test (Box, 1949) rather than the Jennrich Test because sample sizes were < 60.

The results of the use of the Box Test to explore this area in the present study can be found in Appendix Z. For Type I followers there were no significant differences either across all three conditions (α = .05) or between pairs of conditions (α =.017 (\(\frac{.05}{3}\)). This was also the case for Type II followers.

In the case of both Types I and II the change in overall pattern effect between the baseline control and charismatic leadership oratory approached significance. This was also the case for the ‘pseudo attention placebo’ condition versus charismatic speech for Type I. Appendix Z also illustrates how Type III followers experienced significant overall pattern change across all three conditions, between the control condition and ‘pseudo attention placebo’ condition, and between the control condition and speech, but not between the ‘pseudo attention placebo’ and the speech.

For Type IV followers there was a significant difference for all of the tests with the exception of the control condition versus the ‘pseudo attention placebo’
(again see Appendix Z). Finally, Type V followers had significant change in overall pattern effect across all three conditions and between all pairs of conditions; although the change in overall pattern effect for the ‘pseudo attention placebo’ condition compared to the speech condition was only just significant.

**Changes in hypnoidal state for follower types across conditions**

Graphing of hypnoidal state during the charismatic leadership speech (Figure 9.7), as a function of condition and follower type, yielded patterns suggesting that there is a wider mean type response to charismatic leadership oratory in regard to depth of trance, with an increase in trance depth for all types when the control condition is compared to the charismatic speech condition. In relation to the ‘pseudo attention placebo’ condition compared to charismatic oratory, all types, with the exception of Type I followers, experienced a relative increase in their depth of trance. Of the five types, the steepest increase in hypnoidal state appeared to be for Type IV followers.

To establish which of these differences was statistically significant, further analysis took place. Because of the small group sizes (and to avoid having to use data transformation on small datasets), nonparametric alternatives to analysis of variance were used. Using the SPSS Independent-Samples Kruskal-Wallis test to assess differences between the five follower types for hypnoidal state for each of the three conditions (with a Bonferroni adjusted alpha of .017 (\( \alpha = .017 \))), the test showed that the distribution of hypnoidal state scores between groups for the eyes open sitting quietly condition was the same \( (\chi^2 (4, 121) = 9.24, p = .055) \). However, there were statistically significant differences across the groups for both the archive film \( (\chi^2 (4, 121) = 24.8, p < .0005) \) and the charismatic leadership speech \( (\chi^2 (4, 121) = 74.2, p < .0005) \).

Concerning within-subject change between conditions, Related-Samples Friedman’s Two-Way Analysis of Variance by Ranks, with alpha of .01 (\( \alpha = .017 \)), indicated that differences in hypnoidal state score across conditions were not significant for Type I \( (\chi^2 (2, 34) = 6.59, p = .037) \), Type II \( (\chi^2 (2, 17) = 6.71, p = .037) \),
p = .035) or Type III ($\chi^2 (2, 25) = 2.96, p = .23$). However, the differences in hypnoidal state between the three conditions were statistically significant for both Type IV ($\chi^2 (2, 18) = 19.4, p < .0005$) and Type V ($\chi^2 (2, 27) = 33.7, p < .0005$) followers.

Figure 9.8: Hypnoidal state as a function of follower type and the three conditions in the present study

9.5 Discussion

Does follower type mediate alterations in the structure of conscious experience in response to charismatic leadership oratory (Hypothesis D1)?

As previous chapters have demonstrated, modulation in the structure of consciousness appears to take place for a whole sample group during charismatic leadership oratory. Modulation occurs in relation to a range of areas including depth of trance, phenomenological intensity, pattern adaptation, the generation of a holistic altered state of consciousness and measures associated with hypnosis (such as self-reported depth and imagery in response
to an orator’s suggestions). What this final stage in the analysis suggests is that follower type appears to mediate this modulation, with five distinct types identifiable.

Adopting a similar approach to Pekala and Forbes (1997), the five follower types can be given names in order to produce an interpretive summary (see Table 9.4). Thus, the words high, medium and low indicate the following mean sub-group trance depths during the speech. High = pHGS ≥ 6.25 (considered a moderate hypnoidal state during hypnosis, sten 8 and above in the trance tables (Appendix B)), medium = pHGS ≥ 5.29 (a mild hypnoidal state during hypnosis, sten 6 and above in the trance tables) and low = pHGS ≥ 3.91 (also a mild hypnoidal state during hypnosis, sten 3 and above in the trance tables).

In terms of intensity effects, Type V followers experience the highest levels of affective intensity, inwardly directed attention and vividness of their internal imagery, accompanied by a feeling of altered state of awareness. At the same time, they have the lowest levels of rationality and physical arousal, and experience the lowest levels of volitional control (suggesting a sense of involuntariness).

Type IV followers have the lowest levels of self-awareness, accompanied by very little self-talk and do not appear to experience negative emotions in any striking way in response to oratory.

Type III followers appear to be able to remain rational and self-aware, whilst at the same time becoming physically aroused and maintaining an intact memory of what has just occurred. In turn, they experience little alteration to their experience and do not feel a sense of altered state.

Type II followers experience a great deal of self-talk and some arousal; they remember less of the experience, yet their attention remains on the outer world. At the same time, they feel a degree of irrationality, although they have little sense of involuntariness.
<table>
<thead>
<tr>
<th>Follower type</th>
<th>PCI major dimensions</th>
<th>PCI-HAP adapted items</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td><strong>Highest levels of positive affect, inward absorbed attention, negative affect, vivid imagery and altered state</strong></td>
<td><strong>Highest level of self-reported depth of influence, hypnoidal difference, imagoic suggestibility and the highest combined scores for the two suggestibility tests</strong></td>
</tr>
<tr>
<td>Inwardly absorbed and affected highs</td>
<td>Second lowest levels of rationality, arousal, volitional control</td>
<td>Second highest score for hypnoidal state during the speech and pre-speech expectancy</td>
</tr>
<tr>
<td>IV</td>
<td><strong>Lowest levels of self-awareness and internal dialogue</strong></td>
<td><strong>Highest level of hypnoidal state</strong></td>
</tr>
<tr>
<td>Unaware non-dialoguing highs</td>
<td>Second highest levels of positive affect, memory, inward absorbed attention, altered experience and altered state</td>
<td>Second highest level of self-reported depth of influence, hypnoidal difference, imagoic suggestibility and for the combined scores for the two suggestibility tests</td>
</tr>
<tr>
<td>Second lowest levels of negative affect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td><strong>Highest levels of rationality, arousal, self-awareness and memory</strong></td>
<td><strong>Highest level of pre-speech expectancy</strong></td>
</tr>
<tr>
<td>Memorising rational mediums</td>
<td>Second highest levels of negative affect, volitional control, vivid imagery and internal dialogue</td>
<td>Second lowest level of hypnoidal state during the speech, hypnoidal difference and imagoic suggestibility</td>
</tr>
<tr>
<td>II</td>
<td><strong>Highest level of internal dialogue</strong></td>
<td></td>
</tr>
<tr>
<td>Inwardly absorbed, memorising but irrational lows</td>
<td><strong>Lowest levels of rationality, memory, inward absorbed attention and volitional control</strong></td>
<td>Second highest level of arousal</td>
</tr>
<tr>
<td>Second lowest levels of positive affect and self-awareness</td>
<td></td>
<td>Second lowest levels for self-reported depth of influence and for the combined score for the two suggestibility tests</td>
</tr>
<tr>
<td>I</td>
<td><strong>Highest level of volitional control</strong></td>
<td></td>
</tr>
<tr>
<td>Volitionally controlled, unemotional lows</td>
<td><strong>Lowest levels of positive affect, arousal, negative affect, altered experience, vivid imagery and altered state</strong></td>
<td><strong>Lowest levels of hypnoidal state during the speech, self-reported depth of influence, hypnoidal difference, imagoic suggestibility and for the combined score for the two suggestibility tests</strong></td>
</tr>
<tr>
<td>Second highest level of rationality</td>
<td></td>
<td>Second lowest level of pre-speech expectancy</td>
</tr>
<tr>
<td>Second lowest levels of memory, inward absorbed attention and internal dialogue</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finally, Type I followers sustain high levels of volitional control and experience little affective change in response to a charismatic speech; their levels of arousal and vivid internal imagery remain low, with no sense of altered state of experience. In many respects, they appear unaffected compared to Type V and IV followers.

Some follower types also appear to enter an altered state of consciousness in terms of overall pattern effect change in response to charismatic oratory. For Type V and IV followers this occurred during the speech compared to both the baseline control condition and the pseudo attention placebo. In contrast, Type III followers entered an altered state of consciousness during the charismatic leadership speech compared to just sitting quietly with eyes open, but not in response to the archive film condition designed to control for the effects of the medium by which the film was communicated. Type I and Type II followers appeared to have resisted levels of modulation in consciousness sufficient to yield an altered state, a finding that would also be expected of low hypnotic susceptibility individuals in response to hypnotic induction.

**Do follower types, if found, have intensity level characteristics (such as higher altered state of awareness with low volitional control for hypnotic types VII, VIII and IX versus the opposite for hypnotic types I and II) and relationships to adapted PCI-Hypnotic Assessment Protocol items that are also associated with hypnotic type differences during hypnosis (Hypothesis D2)?**

As illustrated above, as type classification numbers increase, and with them mean depth of influence scores, the mean intensity trend for the major dimension of altered state of awareness is upward. Further, when hypnoidal state is graphed as a function of follower type and condition, the amplification and widening of trance depth (discussed in Chapter 7) once more seems apparent. This is a characteristic so far only identified in hypnosis (see trance tables in Appendix B). In addition, Type IV and V followers, when compared to the trance tables, attained a depth of trance at sten 8 during the speech compared to only 5 during control conditions. However, the downward trend for volitional control found in hypnosis (where type classification is by hypnoidal
state scores) is not so clear. In addition, in Chapter 8, we noted how charismatic leadership seems to place greater affective demands on consciousness compared to hypnosis, which appears to place greater demands for involuntariness. This seems to be also true in the case with follower type, even when type numbering is reordered, based on hypnoidal state scores rather than self-reported depth of influence.

**Do follower types, if identified, have characteristics that might identify them as the follower types argued for by Kellerman (2007, 2008) (Hypothesis D3)?**

Kellerman’s follower typology (2007; 2008) sees levels of engagement as a key factor in distinguishing between different types of followers. In this model, ‘isolates’, who may be completely disengaged, taking little notice of the leader and her/his influence, contrast completely with the most engaged followers, ‘diehards’, who are fully engaged in the leader’s message and willing to do anything for the cause. In between these, in increasing levels of engagement, Kellerman suggests, are the ‘bystanders’, ‘participants’, and ‘activists’. Figure 9.9 illustrates this concept.

If we accept various writers’ associations between hypnosis and charismatic leadership, then it seems appropriate to associate engagement from the perspective of the present study with those measures that, when they are at their highest levels of intensity, are associated with the experience of high hypnotic susceptibility individuals. These include self-reported depth of influence, hypnoidal state, imagoic suggestibility, motor suggestibility and the extent of altered state of consciousness as measured by overall pattern effect change. As we have noted above, Kellerman herself makes the connection between diehards and hypnotic influence (Kellerman, 2008: 99-100).
Figure 9.9: Kellerman’s five follower types and engagement

Drawing on these measures as indicators of engagement, the most engaged sub-groups (and therefore the ones most likely to be diehards and activists in Kellerman’s model) appear to be Type V and Type IV followers. These two types had the highest hypnoidal state, depth of influence and imagoic suggestibility of all the five types. Diehards, in Kellerman’s view (2007), are ‘prepared to go down for their cause – whether it’s an individual, an idea or both’ (2007: 6) and may be susceptible to hypnotic type influence (Kellerman, 2008: 99-100). Activists are ‘energetic and engaged’ (Kellerman, 2007: 5). Although Type IV had the highest depth of trance, Type V experienced the greatest change in trance depth between the baseline control condition and the speech, had the highest imagoic suggestibility scores and the highest scores on the stage hypnosis suggestibility tests; and therefore are perhaps the best candidate for the classification of ‘diehards’. Type V followers also had the greatest emotional response to charismatic leadership oratory with the highest intensity of positive and negative emotion, a characteristic frequently associated with the effect of charismatic leadership oratory. Both Type V and Type IV followers entered an altered state of consciousness during charismatic leadership oratory in relation to Tart’s definition, in comparison to both the baseline control condition and pseudo attention placebo. In contrast to Type V, Type IV appeared to experience higher arousal; an element of their profile that one might expect if these were indeed the activists in Kellerman’s model – if we accept arousal as an indicator of being ‘energetic’ (Kellerman, 2007: 5).

Looking then at the other end of the continuum of engagement, with the measures associated with hypnosis used as an indicator of engagement, we find Type I followers. Kellerman’s least-engaged group are the isolates. These followers are ‘completely detached’ and ‘scarcely aware of what’s going on
around them’ (Kellerman, 2007: 4). This alienation still has influence and consequences, however, because by taking no action this type of followers gives tacit support to the leader and the status quo. In Kellerman’s model, isolates care little about, or take much notice of their leaders. Type I followers in the present research, at the opposite end of the continuum (for measures associated with hypnosis) had the lowest levels of self-reported depth of influence, imagoic suggestibility, hypnoidal state and lowest scores on stage hypnosis motor suggestibility tests. This makes them the least like high hypnotisables, if we accept that a charismatic leadership speech is acting as an analogue for the type of induction found in the PCI-Hypnotic Assessment Protocol. Furthermore, Type I had several other phenomenological responses that one might expect to find in people who felt isolated because of the speech. In particular, they appear almost completely unaffected emotionally by the speech, with the lowest levels of emotional response (both positive and negative affect). Their phenomenological intensity profiles for the three conditions in the present study are almost identical and at a pattern effect level there was no evidence of altered state of consciousness. In comparison with the other types, they also maintain the highest levels of volitional control and lowest level of altered state of awareness during the speech.

Looking at the remaining two types, Type III and Type II, it also seems logical to associate these with Kellerman’s ‘participants’ and ‘bystanders’. Kellerman suggests that participants engage in some way with the process but not to the same degree as diehards and activists and that ‘when participants support their leadership and managers . . . they are the fuel that drives the engine’ (Kellerman, 2007: 4). Bystanders, however, ‘observe but do not participate, their passivity giving tacit support to the leader or status quo. However, unlike isolates, they are perfectly aware of what is going on around them’ (Kellerman, 2007: 4); they just choose not to get involved and are not internally motivated to engage actively. Type II followers, although not influenced by the speech, have the lowest level of volitional control. This reaction is one that, it could be argued, would be necessary for a group of the population to become bystanders, leaving the situation to unfold as they remain passive to the vision of the charismatic leader.
This leaves Type III as the potential candidate for the classification of ‘participants’. In Kellerman’s model (2007; 2008), participants can be powerful assets to a leader but can easily end up changing their minds if not kept on board. In the present study, Type III followers had the highest expectations of influence of all the groups and therefore could be easily disappointed if things do not work out as they expect. At the same time, Type III also had the highest levels of self-awareness of all the types, suggesting that these people maintain a constant level of self-monitoring and perhaps reflection on what is taking place.

As discussed in Chapter 7, Pekala and colleagues have demonstrated strong evidence for relationships between self-reported hypnotic depth, depth of trance (as assessed by the PCI regression equation) and the amount of imagery experienced in response to the suggestion to experience a dream embedded with the PCI-Hypnotic Assessment Protocol induction. A similar relationship appears to be occurring during a ‘world-class’ charismatic speech (as is shown by a comparison of Figures 7.3 and 7.4). When one overlays the five follower type three-dimensional coordinates (in respect of self-reported depth of influence, imagoic suggestibility and trance depth) onto the same surface presented in Figure 7.4, a clear linear relationship and position emerges which could be conceptualised as representing degrees of engagement (as hypothesised by Kellerman) (Figure 9.9).

One particularly interesting feature of the surface and positions represented in this graph is that it would appear that follower Type V (the group allocated the label ‘diehards’, above) appear also to have a much more focused and narrow range of responses for hypnoidal state and imagoic suggestibility. Specifically, it seems that to be a ‘diehard’ one needs to have high responses in relation to all three variables.
Activists (Type IV followers), despite having a similar level of depth of influence, can appear to be able to be higher hypnoidal during speech, highly imagoic suggestible or a combination of both. This same characteristic also appears to apply to participants (Type III) and bystanders but to a lesser degree. However, isolates (Type I), like diehards (Type V), have a narrow range of responses with these at the opposite end of intensity and in a mirror image of the pattern for Type V followers. Now that types have been identified (and one type in particular (Type V) that looks to have high susceptibility characteristics), before summarising the findings regarding the fourth research aim, there is one further area of discussion that merits exploration (below).

Could Type V followers in fact be responding in a similar way to hypnotic virtuosos during deep hypnosis (Hypothesis D4)?

One further comparison is possible, within the capability of the present study and method: to juxtapose the effect of oratory on consciousness for Type V
followers with that which is known from prior research into the most highly hypnotisable members of the general population (known as hypnotic virtuosos).

As noted above, Cardeña (2005) used the PCI to assess the intensity level structure of consciousness during deep hypnosis using 12 such individuals. These were drawn from an initial sample of 147 people who met the criteria established by Register and Kihlstrom (1986) for hypnotic ‘virtuosity’ and thereby likely to be in the top 2–5% of the population in respect of their hypnotisability. In Cardeña’s study the selected hypnotic virtuosos were given the suggestion, after induction to ‘go as deeply into hypnosis as possible’ (2005: 37). Major dimension results for this group are given in Table 9.5.

Graphing the intensity levels in Table 9.5 and comparing them to the five follower types in the present study shows that there appears to be a strong similarity between the profiles for Type V followers during oratory and hypnotic virtuosos during deep hypnosis (see Figure 9.11). In particular, the alternating pattern of modulation for Type V followers is almost identical to the pattern found by Cardeña. However, the extent to which the charismatic oratory amplified or intensified this modulation in Type V followers was less acute during charismatic leadership oratory in respect of the intensity levels of negative affect through to altered state of awareness (with a rising zigzag profile in common between the two conditions).

More careful scrutiny of the rank order for Type V followers shows that the top five major dimension rank orders for both charismatic oratory and hypnotic virtuosos during deep hypnosis share the same dimensions. This shared relationship is also the case for the next three lower-ranked dimensions and for the two lowest pairs of dimensions (see Table 9.6).
Table 9.5: PCI major dimension intensity levels for hypnotic virtuosos during deep hypnosis (from Cardeña, 2005)

<table>
<thead>
<tr>
<th>Major dimensions</th>
<th>Intensity level</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>3.76</td>
<td>1.42</td>
</tr>
<tr>
<td>Positive affect</td>
<td>2.27</td>
<td>1.06</td>
</tr>
<tr>
<td>Arousal</td>
<td>1.53</td>
<td>1.40</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>2.87</td>
<td>1.06</td>
</tr>
<tr>
<td>Memory</td>
<td>4.81</td>
<td>0.86</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>4.68</td>
<td>0.81</td>
</tr>
<tr>
<td>Negative affect</td>
<td>1.10</td>
<td>1.02</td>
</tr>
<tr>
<td>Altered experience</td>
<td>3.70</td>
<td>0.86</td>
</tr>
<tr>
<td>Volitional control</td>
<td>1.83</td>
<td>1.08</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>4.87</td>
<td>1.06</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>2.62</td>
<td>1.77</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>4.97</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Figure 9.11: Phenomenological intensity profile for Type V followers during charismatic oratory compared to hypnotic virtuosos experiencing deep hypnosis (Cardeña, 2005)
This similarity is not apparent for the other four follower types (see Figures 9.3 – 9.7).

Table 9.6: Comparison of rank orders for major dimension intensity levels for Type V followers (during oratory in the present study) with hypnotic virtuosos during deep hypnosis (Cardeña, 2005)

<table>
<thead>
<tr>
<th>Intensity level (highest to lowest)</th>
<th>PCI major dimension</th>
<th>Intensity level (highest to lowest)</th>
<th>PCI major dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.91 Memory</td>
<td>4.97 Altered state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.45 Rationality</td>
<td>4.87 Vivid imagery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.31 Altered state</td>
<td>4.81 Memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.20 Inward absorbed attention</td>
<td>4.68 Inward absorbed attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.18 Vivid imagery</td>
<td>3.76 Rationality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.75 Self-awareness</td>
<td>3.70 Altered experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.48 Altered experience</td>
<td>2.87 Self-awareness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.38 Internal dialogue</td>
<td>2.62 Internal dialogue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.03 Volitional control</td>
<td>2.27 Positive affect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.89 Positive affect</td>
<td>1.83 Volitional control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.54 Negative affect</td>
<td>1.53 Arousal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 Arousal</td>
<td>1.10 Negative affect</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The similarity between the rank orders of intensity levels was affirmed using SPSS Spearman’s Rank Correlation Coefficient. There was a very strong, statistically significant relationship between the rank order of major dimension intensity scores during charismatic leadership oratory and that for Type V followers and hypnotic virtuosos during deep hypnosis ($r_s = .89$, $p < .0005$ (two-tailed)). This relationship was less strong for Type IV followers ($r_s = .63$, two-tailed).
p = .028 (two-tailed)) and weaker/non-significant for the other three: Type III
\( (r_s = .36, p = .244 \text{ (two-tailed)}), \) Type II \( (r_s = .42, p = .175 \text{ (two-tailed)}) \) and Type
I \( (r_s = .20, p = .527 \text{ (two-tailed)}). \) That such similarities exist between Type V
followers during oratory and hypnotic virtuosos during deep hypnosis arguably
provides the most compelling evidence for a domain relationship rather than
suggesting that charismatic effects are simply another trance-deepening
condition alongside the many others illustrated in Appendix B.

Following a discussion of the potential limitations in the present study and
recommendations for future research, Chapter 11 will present some overall
conclusions, drawing together the findings above with those in Chapters 6–8.

9.6 Conclusions in relation to Proposition D

This chapter presented evidence in relation to the fourth research aim of the
present study:

**Proposition D –** The approach used in previous studies to identify
hypnotic types in response to hypnosis is able to identify follower
types when applied to a charismatic leadership speech. Furthermore,
these types have similarities to hypnotic types

Cluster analysis and comparison of the resulting five follower types yielded the
following evidence. Firstly, there do appear to be different follower type
responses to charismatic oratory, supporting the theorising of a number of
writers (Chaleff, 1995; Kellerman, 2007; 2008; Kelley, 1992; Townsend, 1999;
Zaleznik, 1965). Secondly, these types have characteristics and features that
appear to support Kellerman’s ideas about type and engagement and
particularly the idea that some forms of leadership can have a hypnotic effect
on some follower types (Kellerman, 2008: 99-100). Thirdly, follower type
seems to be mediating changes in structure of consciousness, in response to
oratory, in a similar way to that which takes place during hypnosis (i.e.
mediation underpinned by levels of hypnotic susceptibility). Fourthly, whether
people enter an altered state of consciousness in response to oratory is also a
function of their follower type, with some types experiencing significant
reorganisation of consciousness, others not. Finally, for the most influenced
follower type (Type V), experience during charismatic oratory is remarkably
similar to the experience of hypnotic virtuosos during deep hypnosis. This said, there were, however, just as in earlier analyses, differences between hypnosis and charismatic oratory, similarly suggesting a shared domain relationship rather than the idea that the conditions are the same.
Chapter 10 – Limitations

As was explained earlier, there has been a limited amount of controlled research into the effects of charismatic leadership and the possibility of the existence of levels of follower susceptibilities, although the need for such research is recognised (Conger, 1988; Bass, 1988; Conger and Kanungo, 1988; Klein and House, 1995). This research attempted to help fill that gap and simultaneously explore the frequently hypothesised relationship between hypnosis, charisma and related group processes (Bryman, 1992; Estabrooks, 1943/1957; Fishman, 1964; Freud, 1921/2001; Gardner and Avolio, 1998; Harris, 1979; Kellerman, 2008; Le Bon, 1895/1947; Popper, 2002a; Reed, 1999; Schjoedt et al., 2010; Willner, 1984).

Any research that attempts to apply a laboratory-style research design to complex behavioural problems inevitably has to deal with a variety of extraneous variables that might confound the results. Before considering remaining limitations, the next section states the potential confounding variables shown statistically to have had no significant effect on the results and analyses described in the preceding chapters. There is then a deliberation on the remaining possible limitations.

10.1 Summary of the statistical assessment of potential confounding variables carried out in the results chapters

10.1.1 The deliberately linear approach to the analysis moving through the four propositions in sequence

The process used in this research was linear. It involved working through each of the four propositions (A → B → C → D) sequentially, to build up a picture of the way in which the effects of charismatic oratory might, or might not, relate to hypnosis from an altered state perspective (Pekala and Kumar, 2007). In doing so, by necessity, this began with the evaluation of a hypothesis about increased and widened trance depth (Hypothesis A1, Hypothesis A2 and Hypothesis A4). This was important because of the following consideration. For the general hypothesis about a domain relationship between charisma and
hypnosis to be maintained throughout, it was essential to first establish an increase and dispersion of trance depth in response to oratory (Hypothesis A1) with at least a proportion of participants attaining hypnoidal state depths commensurate with the effects of hypnosis on high hypnotisables (pHGS > 7.0) (Hypothesis A2 and Hypothesis A3). Once the first analysis had found evidence of trance depth amplification it was then reasonable to continue to explore the remaining objectives related to use of the adapted PCI-Hypnotic Assessment Protocol (Hypothesis B1, Hypothesis B2 and Hypothesis B3), and map structure of consciousness in the light of the fact that hypnoidal state (Hypothesis C1, Hypothesis C2a, Hypothesis C2b and Hypothesis C3) was deepened by oratory. In turn, a search for follower type could then refer with a degree of validity to prior notions about hypnotic type and evidence also acquired through use of cluster analysis (Hypothesis D1 and Hypothesis D2) in prior hypnosis research.

10.1.2 The discounting of potential confounding variables at each stage of the analysis – a summary of the findings

Likewise, there were commensurate potential confounding variables that the author had to deal with at each analytical stage, and discount, for the general hypothesis to stand. Bearing these in mind, at each step a number of critical assessments were undertaken. In summary, these yielded the following findings.

In Chapter 6, we saw how a participant’s familiarity with the speech and sympathy with the content of the speech appeared to have no relationship to the depth of trance obtained during charismatic leadership oratory. This was also the case in relation to the age of participants (section 6.5.5). These were important areas to consider because some participants may already have held views about the speech in question or may even have been old enough to have actually experienced the speech, or been aware of it. Additionally, it was important to assess the effect of gender in the studies because of the imbalance in the number of females compared to males (although representative of the gender imbalance in the population from which the sample
was drawn). In terms of trance depth, there appeared to be no gender effects (see 6.5.5).

Equally, because the organisation is an education charity, there may have been some effects resulting from the nature of the role that people carry out within the company. Dividing employment roles into broadly client-facing and non-client-facing once more found no apparent confounding effects. Analysis related to condition order also showed that, with regard to trance depth, counterbalancing was effective in controlling for order effects (in 6.5.2).

Parallel to the findings above (see Chapter 7), no gender or employment role influences were associated with the adapted PCI-Hypnotic Assessment Protocol item scores of self-reported depth, imagoic suggestibility or the motor suggestibility assessment (see 7.4.6). Having said that, it appears women are more likely to expect (as measured by the adapted PCI-Hypnotic Assessment Protocol items related to expectancy) to be influenced by a speech than men. Despite this, this apparent predisposition was not evident in the results from actually watching the speech. This was the case in respect of depth of trance (as measured by predicted Harvard Group Scores) and self-reported depth of influence. In other words, women appear less influenced by a charismatic leadership speech than they expect to be. There was no difference for men between their expectations and the actual effects of the speech. It was also possible to discount the potential confounding influence of filmic effects, controlled for in the pseudo attention placebo condition, using partial correlation (presented in section 7.4.5). Thus, it seems that the addition of Martin Luther King’s actual speech and persona was indeed the active ingredient in generating the relationship between self-reported depth of influence, imagoic suggestibility and trance depth. This was, in a similar way, true for speech familiarity, age and sympathy with the speech content.

The author presented parallel findings in relation to the question of the possible effects of gender and nature of job role on results in Chapter 8 (section 8.4.11), which deals with the structure of consciousness during oratory from the perspectives of intensity modulation and pattern effect. No potentially confounding relationships occurred for any of the 12 major or 14 minor
dimensions during charismatic leadership oratory. Furthermore, the effect of counterbalancing was effective in controlling for order effects across the 12 PCI major dimension intensity levels (8.4.1). This was the case for all three of the present research conditions, but it is notable that levels of arousal for the archive film condition approached significance with a Bonferroni adjusted alpha (.016) and are therefore worth considering. Graphing mean intensity for the PCI major dimension of arousal as a function of condition order suggested that two condition orders produced slightly different patterns of responding.

Figure 10.1 illustrates that, for four out of the six condition orders, the pattern of responding appeared to be virtually identical. In contrast, participants who experienced the archive film before the speech (with the eyes open baseline condition last) appear to have been slightly more aroused by the speech and then to have had a lower level of arousal again during the baseline condition. Those that experienced the conditions in the order: eyes open, archive and speech appear to have had the same level of arousal throughout.

**Figure 10.1: Modulation in the levels of arousal during the three conditions in the present research as a function of condition order**
These results are hard to explain, bearing in mind that other condition orders in which the archive film appeared before the speech seem to elicit the more common pattern of response. On the days when participants were experiencing this condition order, it might be that an unknown extraneous variable was having an effect. This said, the additional use of SAS repeated measures ANCOVA (with period, sequence and condition coding as the covariate) followed by a reduced model ANOVA, produced no significant findings with regard to the presence of any potential order effects.

10.2 Remaining possible limitations

10.2.1 A summary of the remaining limitations

This section discusses possible remaining methodological limitations. First, there was no direct use of hypnosis in the present research. Rather the construct validity of the predicted Harvard Group Score, as an indicator of trance, and the convergent validity of this measure in respect of hypnotic depth as it is assessed during the Harvard Group Scale of Hypnotic Susceptibility procedure were assumed. Second, and because of this, it is important to point out that the notion of hypnoidal state as a general measure of trance has been criticised by a few commentators (in some of the literature) with some PCI-Hypnotic Assessment Protocol items challenged because they are single-question items, a criticism which could be extended to the present research. Third, an unpredictable limitation emerged following the cluster analysis in search of follower types. Specifically, in terms of sample size, the present research sample (although sufficient for the exploration of the main hypotheses) with hindsight was not large enough once five follower types had been identified, to pursue the full range of PCI analyses (specifically, the sub-group sample sizes were too small to construct viable psygrams). In spite of this, it was still possible to assess overall altered state of consciousness using the Box Test.

Finally, because the pseudo attention placebo (archive film) controlled for a number of factors at once, it is unclear what the relative effect of crowd scenes versus general filmic effects were with regard to the amplification of trance depth and other changes to the structure of consciousness.
10.2.2 The absence of hypnosis as a formal condition within the present research design

As stated in Chapter 4, the author made the decision not to directly include hypnosis in the present research. This was done both for ethical reasons and because there was a strong argument for the use of a pseudo attention placebo condition (to control for filmic effects and the effects of crowd scenes and contextual stimuli) alongside one of the standard PCI baseline control conditions which could have resulted in an impractical design. A four-condition study (for example, eyes open sitting quietly, archive film, charismatic speech and hypnosis) would have presented significant challenges in relation to the management of participants, with greater risk of attrition and boredom/fatigue effects. Further, from an ethical perspective, at the time of commencing the present research and conducting the current empirical work, the relationship between charismatic leadership oratory and hypnosis, although plausible in some respects, was highly speculative. The research design, however, afforded the opportunity to investigate this question in a non-invasive way.

More recently, as we have noted above, fMRI research (Schjoedt et al., 2010) has suggested a relationship between charisma and the functional neuroanatomy of hypnosis, at least in respect of individuals with strong religious beliefs. Had this study been available prior to the start of the present research, the author would almost certainly have included hypnosis directly within the study through the application of the full PCI-Hypnotic Assessment Protocol alongside the present research conditions; or, alternatively, another formal assessment of hypnotic susceptibility (using, for example, the Harvard Group Scale (Shor and Orne, 1962) – perhaps following the completion of the Main Studies so that individuals’ levels of susceptibility could be known prior to conducting the analyses.

10.2.3 The construct validity of hypnoidal state, the pHGS regression equation and criticism of some of the PCI-Hypnoidal Assessment Protocol items in the literature

Concerning hypnoidal state as a general measure of trance, the present research acknowledges that not all commentators have agreed with Pekala in
respect of this measure or other constructs related to the use of the PCI in hypnosis studies. Expressly, Wagstaff (2010) has raised some semantic and conceptual issues in relation to the PCI and PCI-Hypnotic Assessment Protocol, hypnosis and the relationships between trance, suggestion, expectancy and depth. Wagstaff (2010) criticises the fact that imagoic suggestibility and self-reported hypnotic depth measure subjective experience with one item only. Wagstaff suggests therefore that, although it is ostensibly surprising that a one-item measure could be the strongest predictor of hypnotic depth during hypnosis, one explanation could be that the prominence and position of this item in the procedure may have made this item particularly salient. The same criticism applies to the adapted version of this item in the present research. During the designing of the present research, consideration was given to adapting the imagoic suggestibility and self-reported depth items further, to make them multi-item. It was felt, however, that despite Wagstaff’s observations, it was better to use the minimum amount of adaptation possible (see Appendix B) in order to enable more effectively a comparison to prior PCI studies involving hypnosis (which have used the single items).

Wagstaff, in conjunction with the above, takes exception to the fact that self-reported depth is retrospectively measured, whereas most prior self-reports of hypnotic depth occur during a hypnotic procedure; the argument being that retrospective reports are problematic. As Wagstaff puts it:

\[
\text{\ldots a variety of evidence suggests that depths reported tend to vary at different stages during the hypnotic procedure depending on the particular instructions and/or suggestions at the time, and can be influenced by responsiveness to suggestions (i.e. they tend to be higher after a subject has responded successfully to a particular suggestion, and lower following failure). (Wagstaff, 2010, 49-50)}
\]

In another commentary on Pekala and colleagues (2010a; b), Terhune and Cardeña (2010b) expressed a similar critique. The reader can find Pekala’s rebuttal of these critiques in Pekala (2011). In this Pekala emphasises the empirical grounding of the questionnaire in clinical practice as the key justification for the items’ effectiveness. As he puts it:
Although many of their [Terhune and Cardeña’s] comments are justified, the PCI-HAP was developed to be used in a clinical private practice setting which often restricts the use of other tools due to time constraints. Furthermore, the phenomenological ‘richness’ of this approach allows clinicians and researchers to better understand hypnotism from their clients’ and participants’ points-of-view and in a manner that can augment and complement traditional assessment approaches to hypnotism. (Pekala, 2010: 2)

10.2.4 A sample size that was sufficient to identify five follower types but too small to then use those results to construct psygrams to compare pattern effects for the types identified

The present research sample size, although sufficient for the exploration of trance depth, relationships between PCI-Hypnotic Assessment Protocols and the structure of consciousness, was only just large enough for the use of cluster analysis. It is plausible that the present research could have found, with a larger sample, more than five follower types before the splintering of clusters, paralleling the nine hypnotic types found in hypnosis. In addition, with only a sample of n = 121, once five follower types had been identified, the sub-groups for each type were too small to generate reliable intercorrelation matrices and construct psygrams (see Pekala, 1991). This said, prior research into hypnotic types defined by cluster analysis has, itself, yet to report psygram patterns for the nine hypnotic types, so there would have been no prior literature with which to make a direct comparison.

10.2.5 Controlling for two factors at once in the pseudo attention placebo condition

A further limitation within the design was as follows. Although the pseudo attention placebo was effective in controlling for filmic effects alongside the effects of observing a crowd/demonstration context, because this condition controlled for these two things simultaneously it is not possible to distinguish whether basic filmic effects or the crowd scenes were amplifying trance depth, or a combination of both. Thus, the initial gain in trance depth, illustrated in Figure 6.9, between the period of quietness and the archive film condition could
have been due to just the focusing of attention on a video recording, or the actual content of the video (illustrative arguably of a crisis context). Alternatively, both these elements may have been important. The same observation holds true for other changes identified within the research.

Recommendations for future research in the light of these remaining limitations and the findings from the four Main Studies appear at the end of Chapter 11.
Chapter 11 – Conclusions

11.1 A summary of the final chapter content and the key areas expanded on below

This final chapter begins by discussing the extent to which the present research was able to fulfil its purpose and aims. Findings related to the four propositions and 14 hypotheses are then summarised within a single table to give an overview of the evidence that was discussed in Chapters 6–9 and to illustrate the effectiveness of the research design with regard to the two research aims. The contribution made by the present research to leadership theory is then summarised before moving on to a more discursive synthesis of the results, reiterating and summarising the relative importance of the findings which were significant and/or which appear similar to parallel findings from wider fields with regard to hypnosis and hypnotic susceptibility.

Earlier chapters have discussed the findings related to the propositions in detail, with each chapter building on the previous one. This final synthesis seeks to pull together all four areas of evidence: trance depth, relationship between adapted PCI-Hypnotic Assessment Protocol items and trance depth, mapping of the structure of consciousness and the identification of follower types. Within this, two interrelated interpretations seek to relate the findings back to the theory that charismatic leadership and hypnosis may be related and to recent theorising about the nature of hypnosis – highlighting the contribution of the findings to leadership theory. The first of these, drawing on recent discussions about the nature of hypnosis (Kirsch et al., 2011), advances the following thesis. Because of the similarities found between the effects of charismatic oratory in the present research and evidence from the literature about the effects of hypnosis, it seems plausible to suggest (within the limitations discussed in Chapter 10) that charismatic effects might also be categorised as a sub-domain within the wider domain of suggestion. There are, however, important differences between the two conditions. These differences suggest that charismatic influence, although possibly also an altered state-generating sub-domain of suggestion is, nonetheless, a different one. In
particular, it appears that charismatic oratory places greater affective demands on the phenomenology of consciousness than hypnosis, with such responses appearing to share a relationship to dimensions of consciousness such as altered state and visual imagery. The second interpretation emphasises evidence from the present research that supports the existence of follower types that share characteristics with hypnotic susceptibility types. Thus, it seems that, as in hypnosis, some form of trait susceptibility could be mediating the effects of charisma on consciousness.

The chapter goes on to discuss a series of speculative implications that the author argues follow from the results and adopting the two interpretations. Within these is embedded a discussion related to the author’s participant observation of stage hypnosis training. This appears towards the end of the thesis, as observations made about the stage hypnosis process were most relevant to the interpretations below. These implications can be summarised as follows.

From an altering of consciousness perspective, the main implication is that charismatic leadership speeches may be acting within the process of leadership in a similar way to the suggestibility test during stage hypnosis. In other words, they trigger internal processes of self-selection during which followers with susceptibility to enter an altered state of consciousness associate perceptions and first-person experience of consciousness (such as involuntariness and seemingly-unintended vivid internal imagery) with the power and charisma of the leader and thus choose to follow and commit to that leader, or not. If so, as in stage hypnosis, this is in itself a form of misattribution, since what such followers are mainly doing is responding to their own susceptibility, not the leader's abilities per se.

The research design used arguably reinforces such conclusions, since the speech in question was one delivered by a leader half a century ago and related to a context distant from the one that the present research participants live in today. By extension, and from such a perspective, the results echo recent physiological evidence about the nature of charisma and parallels to functional neuroanatomy during hypnosis (Schjoedt et al., 2010) – in particular,
the inhibition of the frontal executive network in ‘believers’ (paralleling the ‘handing over’ of control to the hypnotist during hypnosis (Kaiser et al., 1997; Egner and Raz, 2007)).

Extending these implications to the wider social processes of leadership, the visible existence of a core group of such influenced followers might further drive a perception of influence and over-attribution of power, perhaps resulting in the engagement phenomena and range of behavioural follower response described by writers such as Kellerman (2007; 2008) (Diehards, Activists, Participants, Bystanders and Isolates). In this case, over-attribution and the potential consequent social conformity effects (Asch, 1956) that might occur in response to a small group significantly misattributing power to a leader, or an idea, and behaving in a noticeably influenced way within a wider population, are perhaps not so much products of leadership processes as the driving mechanisms of their manifestation. This is almost certainly the case in stage hypnosis where the goal of the hypnotist is also to persuade the whole audience of her/his power to influence all people for entertainment purposes (a clever deception), when in fact, the sorts of stage performances by hypnotic virtuosos associated with stage hypnosis are only possible with this select (and selected) few.

Coupled with such ideas, this chapter notes how a growing body of hypnosis and altered consciousness literature points to the conclusion that hypnotic susceptibility could have arisen through selection pressures in early human history (see for example, Cardeña and Terhune, 2008; Lichtenberg et al., 2000; Morgan, 1973; Morgan et al., 1970; Piccione, Hilgard and Zimbardo, 1989; Woody and Szechtmann, 2007). These selection pressures may have been driven by the advantages of mammalian hierarchy (Wilson, 1975), increased social cohesion (Ray, 2007) and/or pseudo religious practices (McClennon, 2001). In like manner, some have argued that the focusing of attention on ritual processes itself may have driven the development of enhanced executive functioning and working memory (Rossano, 2011). Thus, hypnoidal effects, in Pekala and colleagues’ conception (Pekala and Kumar, 2007), have probably been a factor in human first-person experience of consciousness for far longer than the formal hypnotic induction as a laboratory procedure, entertainment or curiosity. If so, the apparent link between the hypnoidal products of hypnosis
and the hypnoidal products of oratory found in the present research might help to explain why the ‘ritual’ of the speech remains so dominant within all areas of life – from wedding ceremonies to business gatherings, and from church sermons to management training programmes and politics. To put it another way, just as success during hypnotic induction is dependent on the assumptions made by the subject about the abilities of the hypnotist and the potential effectiveness of the procedures used (Kirsch, 1999), so too the successful achievement of influence through charismatic oratory may in parallel be dependent on a similar underlying, hard-wired mechanism.

By extension, a further contribution made to charismatic leadership theory is that the presence of a living leader and close proximity to the context may not be necessary to generate an altered state of consciousness in some follower types. This could also help to explain how apparently ‘leaderless resistance movements’ can produce radical groups of followers with extreme forms of commitment (see Blazak, 2001; Bousquet, 2012; Joosse, 2007; Sageman, 2008). It may also explain how the words spoken by a leader long ago can continue to influence if delivered in the necessary ritualised way – involving focused attention and high levels of imaginative suggestion. Indeed, a point often overlooked in discussions of hypnosis in the modern literature is the fact that self-hypnosis can be just as effective a phenomenon as hypnosis induced by an external actor, so it may also be with charisma and self-induced influence. Thus, providing the underlying conditions are right, all that may be required to initially drive a charismatic leadership phenomenon and ignite the ‘fire’ of charismatic influence (Klein and House, 1995; Popper, 2002a) may be the invocation of forms of ritual response that could have had an evolutionary advantage in early human history. Although speculations regarding an evolutionary explanation for followership and leadership are infrequent within the literature, there are a number of writers who have begun to explore such possibilities (van Vugt, 2006: 2008; van Vugt and Ahuja, 2011; van Vugt, Hogan and Kaiser, 2008).
11.2 Conclusions with regard to the investigation’s research purpose, aims and objectives and the contribution of the thesis to charismatic leadership theory

The purpose of the research was to explore the frequently hypothesised relationship between charismatic leadership and hypnosis, and examine whether research could identify if there was evidence to support this proposition. Within this, there were two interdependent research aims. Firstly, to identify a means of operationalising the effects of charismatic leadership in a way that could allow a comparison of such effects to hypnosis. Secondly (Research Aim 2), to use the approach identified in Research Aim 1 to find out whether the effects of charismatic leadership are similar to, or the same as, the effects of hypnosis.

With regard to these two aims, the combination of a focus on the effects of charismatic oratory together with the use of the Phenomenology of Consciousness Inventory (PCI) and the PCI-Hypnotic Assessment Protocol was successful on both counts. Further, not only were the effects of oratory and charismatic leadership oratory successfully operationalised, but the research has yielded important findings which may help to explain the long-standing associations in the literature described in Chapter 1.

The success of the research design in achieving both of the research aims is illustrated by the summary of findings in Table 11.1 below, which also gives an overview of the evidence that will be discussed in the next section. In the case of all the hypotheses, the design was effective in providing findings that allowed the investigations to address the research’s original purpose.
### Table 11.1: Summary of the main findings from Chapters 6–9

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposition A</strong> – Trance depth during a charismatic leadership speech is affected in a similar way to that found during prior hypnosis studies and research into other conditions associated with the term altered state of consciousness</td>
<td></td>
</tr>
<tr>
<td><strong>Hypothesis A1</strong> – Charismatic leadership oratory deepens trance</td>
<td>Accepted. Average trance depth is significantly increased during oratory.</td>
</tr>
<tr>
<td><strong>Hypothesis A2</strong> – Overall trance depth during oratory is similar to that found for a whole sample during prior hypnosis research</td>
<td>Not in relation to the Harvard induction, however, confidence intervals overlap with the PCI-Hypnotic Assessment Protocol suggesting that in some repeated trials charismatic oratory and hypnosis might yield similar results.</td>
</tr>
<tr>
<td><strong>Hypothesis A3</strong> – Trance depth during charismatic leadership oratory is equivalent to that attained by high hypnotic susceptibility individuals during hypnosis</td>
<td>Rejected; however, 8.26% of people enter a deep trance state during oratory. This compares with approximately the upper quartile obtaining similar depths of trance during hypnosis.</td>
</tr>
<tr>
<td><strong>Hypothesis A4</strong> – Charismatic leadership oratory increases trance depth and at the same time widens the range of hypnoidal response, as in hypnosis</td>
<td>Accepted, but not to the same degree.</td>
</tr>
<tr>
<td><strong>Hypothesis A5</strong> – Trance depth during charismatic leadership oratory is similar to other conditions associated with the term altered state of consciousness</td>
<td>Oratory shares a position within the trance tables (sten 6) alongside: hypnosis during the PCI-Hypnotic Assessment Protocol, fire-walking, biodynamic cranio-sacral osteopathy, recall of a religious experience and some shamanic and meditative states.</td>
</tr>
</tbody>
</table>
Proposition B – There are relationships between trance depth and PCI-Hypnotic Assessment Protocol measures during charismatic leadership oratory that are similar to those found during hypnosis

| Hypothesis B1 – There are positive relationships between adapted PCI-Hypnotic Assessment Protocol items similar to relationships found in hypnosis | Accepted, for association between self-reported depth, imagoic suggestibility and trance depth. Accepted, for association between expectancy, self-reported depth and imagoic suggestibility. Accepted, for motor suggestibility (as measured by stage hypnosis suggestibility tests) and trance depth during oratory. Accepted, for expectancy and motor suggestibility. However, not for association between motor suggestibility, self-reported depth and imagoic suggestibility. |
| Hypothesis B2 – A person’s perception of how deeply influenced they have been by a charismatic leadership speech is predicted by the amount of imagery they have experienced in response to the speech content and their depth of trance (paralleling the relationship between self-reported hypnotic depth, imagoic suggestibility and depth of trance during hypnosis) | Accepted. With the three-dimensional surface of this relationship (when plotted on a graph) remarkably similar to the relationship found during the PCI-Hypnotic Assessment protocol induction. |
| Hypothesis B3 – There are positive relationships between motor suggestibility as assessed by stage hypnotists prior to the administration of an induction to volunteers, adapted PCI-Hypnotic Assessment Protocol items and depth of trance during oratory | Accepted with regard to trance depth, expectancy and imagoic suggestibility but not for self-reported depth. |
### Proposition C – Mapping of states of consciousness during charismatic oratory, and comparing these to what has been found during hypnosis, shows that oratory generates an altered state of consciousness

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Charismatic leadership oratory alters the structure of consciousness in relation to: a) changes in PCI major and minor intensity levels, and b) paired major dimension of consciousness pattern changes</td>
<td>Accepted. However, it only shares a few specific characteristics in common with hypnosis with regard to change in major and minor intensity levels and bonding between paired dimensions.</td>
</tr>
<tr>
<td>C2</td>
<td>Charismatic leadership oratory generates an altered state of consciousness</td>
<td>Accepted.</td>
</tr>
<tr>
<td>C3</td>
<td>Charismatic leadership oratory alters the structure of consciousness in a similar way to a hypnotic induction for a whole sample in relation to overall pattern effect change</td>
<td>Rejected.</td>
</tr>
</tbody>
</table>
### Proposition D – The approach used in previous studies to identify hypnotic types in response to hypnosis can identify follower types when applied to a charismatic leadership speech. Furthermore, these types have similarities to hypnotic types

| Hypothesis D1 – Follower type mediates the structure of consciousness in response to charismatic leadership oratory | Accepted. |
| Hypothesis D2 – Follower types have intensity level characteristics (such as higher altered state of awareness with low volitional control for hypnotic types VII, VIII and IX versus the opposite for hypnotic types I and II) and relationships to adapted PCI-Hypnotic Assessment Protocol items that are also associated with hypnotic type differences during hypnosis | Accepted. Most notably Type V followers have a remarkably similar intensity profile to that of hypnotic virtuosos during deep trance. |
| Hypothesis D3 – Follower types have characteristics that might identify them as the five follower types argued for by Kellerman (2007; 2008) | Accepted, if the relationship between self-reported depth, trance depth and imagoic suggestibility is seen an analogue for Kellerman’s notion of engagement. |
The thesis and findings within it contribute to the charismatic leadership literature in the following ways. In the first place, evidence from the Main Studies can be seen as offering a plausible explanation for the frequent association between the terms hypnosis/hypnotic and charismatic and other extreme forms of leadership hypothesised most notably by Popper (2002a). Secondly, and related to this, the thesis provides a means of exploring and defining more explicitly the notion of followership and follower susceptibility within such a context.

Incidentally, and by extension, because of the need to pull together hypnoidal state findings from a wide range of prior studies, in order to make comparisons between the levels of trance identified in the present research, the thesis also contributes to the fields (such psychology) that have taken an interest in the exploration of altered consciousness (see Cardeña and Winkelman, 2011). Specifically, the trance tables shown in Appendix A are the first time that such wide-ranging results have been directly compared to one another and statistically benchmarked in terms of sten scores – the effect of which appears to support Pekala and colleagues’ contention that pHGS (or hypnoidal state) can indeed be seen as a general measure of trance.

11.3 A discussion of the findings summarised above

11.3.1 Discussion of findings in Table 11.1

This research began by seeking to establish if charismatic leadership and hypnosis are related. In order to operationally define such a question the research focused on the effects on the structure of consciousness of charismatic leadership oratory and compared these to what is known about the effects of hypnosis from prior published research that has also used the PCI to operationally define the effects of hypnosis from an altered state perspective. Drawing on the academic hypnosis literature, such a question, by definition, also required the search for a varied distribution of susceptibility in response to oratory, and types of follower susceptibility, since varying levels of effect following hypnotic induction are a function of the normal distribution of hypnotisability in the general population.
In terms of a number of areas explored, the answer to the question above appears to be ‘yes’. Yes, if we look at the effects of a world-class charismatic leadership speech, there are similarities between the effects of hypnosis and charismatic leadership (Hypothesis A1, Hypothesis A2, Hypothesis A3, Hypothesis A4, Hypothesis B1, Hypothesis B2, Hypothesis D1, Hypothesis D2) and there is a broadly normally-distributed response to oratory in terms of trance depth and identifiable types of follower susceptibility individuals (one group of which (Type V followers) responded in a remarkably similar way to what is known about the response of hypnotic virtuosos during deep hypnosis). The effects of hypnosis and charismatic leadership, despite sharing some characteristics and both generating an altered state of consciousness, are not identical (Hypothesis C1, Hypothesis C2a, Hypothesis C2b, Hypothesis C3).

In summary, Chapters 6–8 present compelling evidence for apparent underlying shared relationships between charismatic oratory and hypnosis. Illustrative of this is the way that trance depth (predicted Harvard Group Score (pHGS)) responds to a charismatic speech compared to a baseline state of consciousness (MD = 1.13, SE = 0.13, p < .0005 (one-tailed) (Hypothesis A1), a change in trance depth that represents on average a large shift in hypnoidal state ($d_z = 0.8$) compared to a resting state of quietness, and a moderate shift compared to experiencing crowd scenes and demonstrations from the same day as the speech ($d_z = 0.51$). There was also a characteristic widening of trance depth scores during the speech, a phenomenon also found during hypnosis (in the case of the present research, from a range of 4.51 and 4.23 during quietness and the archive film, respectively, to a range of 5.98 (pHGS 2.06 – 8.04) during oratory. This equals an increase in hypnoidal range of 75.4% between baseline state and speech state.

Despite the fact that overall trance depth (at pHGS = 5.09) was not as high as one might expect to find during hypnosis, nonetheless for a proportion of people involved in the research the experience appears to have been similar to attaining a deep trance (8.29% at pHGS > 7.0) (Hypothesis A2). Further, although not reaching the mean associated with prior Harvard hypnotic induction studies, confidence intervals around the hypnoidal state mean during
oratory (M = 5.09, CI (95%) = 4.85 – 5.34) overlapped with those for the mean following the hypnotic induction in the PCI-Hypnotic Assessment Protocol induction (M = 5.42, CI (95%) = 5.16 – 5.68) from prior research. The statistical implication is that, if the experimental design were replicated a sufficient number of times there would be a similar mean in a fair number of cases (approximately one third of replications).

Even so, it should be borne in mind that many conditions appear to amplify trance depth, as is clearly visible in the trance tables presented in Appendix A (*Hypothesis A5*). Nevertheless, up until the present research, deepening and extreme widening of response range appeared unique to hypnosis. Comparison of present research findings within these tables shows oratory hypnoidal response (pHGS = 2.08 – 8.03) extending across a similar range to the range of sub-group means during hypnosis (pHGS = 1.78 – 7.64), sten 1–10. Published tables for percentile hypnoidal response during hypnosis (see Pekala, 2009) appear to confirm this shared characteristic. Specifically, in terms of individual response, oratory hypnoidal range spans from the 0.5th to the 93rd percentile during hypnosis (Pekala 2009: 39, from Pekala and Forbes, 1997), although overall range appears slightly attenuated during oratory, at both the upper and lower end of the range, with no one attaining the highest levels (pHGS = 8.05 – 9.44) induced by hypnosis (*Hypothesis A4*).

Most notably, as was discussed in Chapter 7, there is a strikingly similar relationship between self-reported depth of influence, imagoic suggestibility and trance depth during oratory ($R^2(121) .55, p <.0005$ (one-tailed)) compared to the relationship between self-reported hypnotic depth, imagoic suggestibility and trance depth during hypnosis ($R^2(180) .52, p <.0005$ (Pekala et al., 2006)) (see Figure 11.1, below). Thus, just as the feeling of increased hypnotic depth is a product of hypnoidal state and amplification of internal imaginative responding, so the feeling of falling under the influence of a charismatic leader is also a product of the same variables (*Hypothesis B1, Hypothesis B2*). Further, although not as explicit a relationship as has been found during hypnosis, expectancy and motor suggestibility also appeared to be interacting with some of the effects of a leadership speech with regard to trance depth (*Hypothesis B3*).
In Chapter 8, we also saw how hypnosis and oratory were similar from the perspective of Singer’s ideas about altered state of consciousness and intensity effects (Singer, 1977; Pekala, 1991; Pekala and Kumar, 2007) (Hypothesis C2a). In terms of such effects, there was a strong, statistically significant correlation between the rank order of mean intensity levels during charismatic speech and that found during hypnosis ($r_s(12) = .88$, $p < .0005$ (one-tailed)).

There were, however, some notable differences in the detail of intensity profiles (particularly in respect of altered state of awareness and inward absorbed attention), with hypnosis overall (for the whole participant group) appearing to attenuate intensity for most dimensions compared to oratory. Furthermore, hypnosis appears to amplify altered state of awareness and inward absorption to a greater degree (see Figure 11.2).

When it comes to pattern effect analyses (Hypothesis C1b), the greatest differences are apparent. Although charismatic oratory generates an altered state of consciousness ($\chi^2(66) = 180$, $p = .0001$), according to the PCI’s ability to operationalise Tart’s theories about discrete states of consciousness (d-SoCs) (Tart, 1975; 1977; Pekala, 1991; Pekala and Kumar, 2007) (Hypothesis C2), oratory d-SoC altered state of consciousness is different to the d-SoC generated during hypnosis ($\chi^2(66) = 396$, $p < .0001$) (Hypothesis C3). Further scrutiny of individual bonding relationships (using psygrams and the calculation of shared variance between dimensions) shows that charismatic leadership oratory whole group data, from an ‘Izardian’ perspective (Izard, 1977; Pekala, 1991; Pekala and Kumar, 2007), shares only 10 out of 22 couplings with that found for a whole group during hypnosis (see Figure 11.1).

Noting, as has been elaborated on above, that hypnoidal state (as measured by predicted Harvard Group Score) is a function of 10 major and minor dimension intensity levels, one possible overall interpretation is that during oratory, subjective experience of consciousness at an intensity level appears to be responding to influences that it shares with hypnosis (such as expectancy and susceptibility). In contrast, pattern of experience and bonding of dimensions within consciousness seem to be modulating phenomenological experience in a way aligned to the orator’s chosen, emotive linguistic content. The psygram for
the speech condition, controlling for common effects during the attention placebo condition, supports this theory (Figure 11.4) and illustrates the strong bonding relationships between positive and negative affect, visual imagery, altered state of awareness and altered experience (Hypothesis C1b). Clinical hypnotic inductions, by definition, contain very different linguistic suggestions and never suggestions that promote the experiencing of strong negative emotions, as clinical practitioners would generally consider this unethical.

Figure 11.1: Side-by-side comparison of the graphs (reported in Chapter 7 as Figures 7.4 and 7.5)

Self-reported hypnotic depth as a function of imagoic suggestibility and hypnoidal state
(Pekala et al., 2006: 326) (n = 180)

Self-reported depth of influence as a function of hypnoidal state and imagoic suggestibility (present study) (n = 121)

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Importantly, previous hypnosis research indicates that clinical hypnosis procedures produce no significant bonding relationships between negative affect and altered state or negative affect and altered experience (see Figure 11.3). It appears, therefore, that the core difference between the ways in which charismatic oratory induces an altered state of consciousness, and hypnosis, may relate to the induction of contradictory affective responses that are both negative and positive at the same time – responding that is almost certainly the product of combining negative and positively emotive language within the same speech.

Much of the leadership literature arguably predicts the emotion-driven effects above. Willner’s observations of charismatic leadership, for example, point to
the importance of emotional commitment and the affective dimension of follower response with the proposition that ‘intensity of expression’ may be more important than subject matter (Willner, 1984: 27). Other writers suggest that ‘charismatic leaders express positive emotions, which are transferred to followers, resulting in the experience of positive mood’ (Bono and Ilies, 2006) and that ‘mood contagion may be one of the mechanisms by which charismatic leaders influence followers’ (Bono and Ilies, 2006: 318). Further, and of particular relevance to the notion that there might also be a degree of involuntariness linked to emotional bonding during some charismatic leadership contexts, Popper and Mayseless (2002) propose that:

Emotional bonding with a leader can cause the followers to lose their autonomous judgement and merge with the leader’s wishes and aspirations, at times even to the point of ‘self loss’ (Kets de Vries, 1989; Lindholm, 1988; Popper, 1999). (Popper and Mayseless (2002: 204)

Figure 11.2: Phenomenological intensity profile for present research – untransformed major dimension means with the addition of data from a prior hypnosis study supplied by Ronald J. Pekala (previously presented as Figure 8.11)
Figure 11.3: Side-by-side comparison of the different pattern effects and ‘bonding’ (Pekala and Kumar, 2007) during charismatic leadership oratory (present research) and hypnosis (from data supplied by Ronald J. Pekala, see Chapter 8 (Figures 8.9 and 8.12)).

Charismatic oratory

Hypnosis

Overall pattern difference between the two conditions was measured by the Jennrich Test as $\chi^2(66) = 396, p < .0001$
11.4 Reconciling the apparent similarities and differences between the effects of charismatic oratory and hypnosis within two related interpretations

11.4.1 Questions raised by the findings

Why is phenomenological response to charismatic leadership oratory and hypnotic induction similar in areas such as amplification and increased range of trance depth, with relationships to imagoic suggestibility and people’s perception of influence similar to those found during hypnosis? How is it that a small group of individuals respond to oratory in a very similar way to hypnotic virtuosos during deep hypnosis, when the two conditions are so different in terms of the nature of the actual activities that people experience?

Figure 11.4: Psygram illustrating the remaining significant relationships during charismatic leadership oratory, controlling for the effects of the pseudo attention placebo (previously presented as Figure 8.10)
What underlying mechanisms could be leading to the modulation of consciousness in a way that generates follower types with characteristics that parallel the normal distribution of hypnotic susceptibility in the general population; and for two follower types, responding that generates a significantly altered state of consciousness? Moreover, how could such responding occur without the physical presence of the leader, in response to a leader no longer alive (from a context fifty years ago), that although emotionally evocative from a historical perspective, is nonetheless a context very different to the one in which the participants in the present research live and work?

11.4.2 Reconciling the similarities and differences between the effects of hypnosis and charismatic oratory

One way to explain the findings above, and reconcile the similarities and differences between the effects of charismatic oratory and hypnosis, is to draw on recent consensus agreements about the nature of hypnosis from leading figures in the field of experimental psychology (Kirsch et al., 2011). Doing so, and within the limitation of the research design, the following main interpretation of the results in terms of current hypnosis theory is advanced, namely that:

**Interpretation 1 – Paralleling recent theorising about the nature of hypnosis (Kirsch et al., 2011) it appears that the charismatic effects produced by oratory may represent a similar altered state of consciousness generating sub-domain within the wider domain of suggestion. However, despite sharing some characteristics with hypnosis, the effects of a charismatic leadership speech are not identical to hypnosis. The main difference between the two conditions is in relation to bonding of emotional response to dimensions of consciousness such as altered state and visual imagery, a dynamic present during charismatic oratory but not in response to hypnotic induction.**

In the hypnosis literature referred to above, in Chapter 3, it was noted how there have been few common positions about the nature of hypnosis within academia, with the exception of the recognition that the effects of hypnosis are a function of individual levels of susceptibility, not any particular hypnotic procedure or
mysterious hypnotic power. Although this was indeed the case for most of the twentieth century, a recent consensus statement on the nature of hypnosis, agreed between a range of respected researchers associated with both state and non-state positions (Kirsch et al., 2011), proposes a new single common ground, namely that hypnosis is best defined as one of at least four sub-domains of suggestion, other domains including placebo effects, memory effects and sensory suggestibility (as shown in Figure 11.5, below).

**Figure 11.5: Hypnosis as one of at least four sub-domains of suggestion (as proposed by Kirsch et al. (2011))**

In adopting a sub-domain of suggestion hypothesis, Kirsch et al. (2011) align themselves with Gheorghiu's arguments for a better taxonomy of suggestion (Gheorghiu et al., 1989) and the need to treat suggestion as a significant psychological 'domain in its own right' (Kirsch et al., 2011: 108). The logic of the problem that leads to such a conclusion, as Kirsch and colleagues define it, is as follows:

Since the beginning of systematic research in the field (Hull, 1933), hypnosis has been defined operationally by the administration of a hypnotic induction. In contrast, hypnotisability has been operationally defined as responsiveness to suggestion following a hypnotic induction. The problem is that the induction of hypnosis has little impact on responsiveness to suggestion. Therefore, 'hypnotisability' scales mostly measure the effects of suggestion, not the effects of hypnosis (Weitzenhoffer, 1980). (Kirsch et al., 2011: 107)
Alongside this, as Kirsch and colleagues point out, is the fact that numerous studies indicate the following three things:

. . . 1) every suggestion that can be experienced following an induction can also be experienced without it; 2) hypnotic inductions increase suggestibility only slightly; and 3) hypnotic and waking suggestibility are very highly correlated, almost as highly correlated as the test-retest correlations of the scales with which they are measured. The means by which hypnotic inductions produce these relatively small changes in suggestibility are not clear. The changes in suggestibility may be mediated by a hypnotic state and/or they may be a function of various social and cognitive variables (e.g. expectancy, motivation, etc.) that are activated by the induction procedure. (Kirsch et al., 2011: 107)

Arguably, a similar problem exists in much leadership theory where the definition of leadership has assumed the influence of a leader to such a degree that follower susceptibility has often been ignored (Popper, 2012). There are parallels too with the fact that just about all of the behaviours associated with followers who appear influenced by a leader can also be found where there is no apparent direct leader present or influencing of a group directly by an individual. For example, many recently identified extreme follower contexts, which meet Popper’s criteria for ‘hypnotic leadership’ and loss of self (Popper, 2002a), also appear to lack formal leadership or organisational structures (Blazak, 2001; Dishman, 2005; Joosse, 2007; Sageman, 2008; Bousquet, 2012).

Although ostensibly plausible, the real test of Interpretation 1 and particularly the notion that although different, hypnotic effects and charismatic effects are related, is the extent to which levels of susceptibility play a part within such effects. In other words, if the theory presented above were correct, and hypnosis and charismatic leadership oratory are indeed both related sub-domains of the wider domain of suggestion, one might expect to find a range of susceptibility responses in the general population and types of susceptibility which parallel hypnotic types found in response to hypnosis.
As ultimately demonstrated in Chapter 9, cluster analysis did indeed yield follower types: types which, when labelled Type V to I from highest mean participant perception of influence (using the adapted PCI-Hypnotic Assessment Protocol self-reported depth item) to lowest, have characteristics that one might expect if those types were indeed related to level of hypnotic susceptibility. Most noticeably, this is the case for trance depth, imagoic suggestibility and motor suggestibility test scores, the very areas that one would predict if there were parallel forms of susceptibility underlying the frequent association of hypnosis and charismatic leadership. In addition, and further demonstrating a relationship, analysis found amplified altered state of awareness and attenuated volitional control for Type V and the opposite pattern of responding for Type I followers (hallmarks of high and low hypnotic susceptibility types, respectively, when found in response to hypnotic induction).

**Figure 11.6:** (Figure 9.11 in Chapter 9) Phenomenological intensity profile for Type V followers during charismatic oratory compared to hypnotic virtuosos experiencing deep hypnosis (Cardeña, 2005)
It is also remarkable that Type V followers’ phenomenological intensity profile is very similar in terms of rank order of intensity to that found in hypnotic virtuosos (those individuals sought by stage hypnotists) during deep hypnosis (Cardeña, 2005) ($r_s(12) = .89$, $p < .0005$ (two-tailed)), the only substantive difference being the extent of the amplification and attenuation of some dimensions of consciousness (see Figure 11.6).

**Figure 11.7: Hypnoidal state as a function of follower type and the three conditions in the present study (Figure 9.8 in Chapter 9)**

In relation to Tart’s definition, Type V and IV followers, as one would expect based on the results above, appear to enter an altered state of consciousness during oratory compared to the pseudo attention placebo condition ($F(78, 8539) = 1.49$, Box $M = 168$, $p = .015$; and $F(78, 3650) = 1.55$, Box $M = 198$, $p = .001$, respectively). On the other hand, Type III, II and I followers did not experience a significant alteration in the overall structure of consciousness. Lastly, and perhaps most conclusively, if one maps hypnoidal state as a function of follower type and the three conditions in the present research, this demonstrates the same sort of widening of sub-group ranges found in hypnosis (see Figure 11.7).
As well as supporting the first interpretation above, a second interpretation, drawing on the more long-standing theory that there is a distribution of hypnotic susceptibility in the population (developed in Pekala's work through the identification of hypnotic types) seems hard to avoid: by extension, that:

**Interpretation 2 – From an altering of consciousness perspective (Pekala and Kumar, 2007), there are follower types, with these types having different levels of susceptibility to charismatic influence and in turn similarities to the levels of responding induced during hypnosis. It appears, therefore, that a form of trait susceptibility is mediating the effects of charisma on consciousness, in a parallel way to hypnotic susceptibility.**

When all things are considered, it appears that, just as hypnotic susceptibility mediates the effect of hypnosis on the phenomenology of consciousness during hypnotic induction, so follower susceptibility appears to be the mediating variable between charismatic oratory and the parallel modulation of consciousness during this condition (illustrated in Figure 11.8, below).

What this research’s design could not determine, however (as was discussed in the previous chapter), is whether these susceptibilities are in fact the same. That question will need to be the subject of a future study, perhaps a study that replicates the present design using participants with known Harvard Group Scores.

**Figure 11.8: A model of the parallel mediating effects of hypnotic susceptibility and follower susceptibility**
11.5 Implications of the interpretations above for leadership theory

11.5.1 Summary of the discussion that follows

In what follows there is discussion of two areas that emerged during the observation of stage hypnosis training and the literature review that may help to shed light on the implications of the discussions above for charismatic leadership theory. Firstly (returning to Estabrooks’ observations (1943/1957) about stage hypnosis, charismatic leaders like Hitler, and oratory in general), the way in which stage hypnotists use susceptibility tests within their selection processes is considered. The purpose of such tests is not just to identify the most susceptible, although this is a core outcome. Rather, in the stage performance, enabled by the public nature of such testing, the stage hypnotist in parallel aims to build a form of social conformity effect within the audience at large (Asch, 1956) that focuses on developing an over-attribution of power to the hypnotist and concealment of the true nature of hypnosis. Secondly, this chapter considers the frequent debates in the literature that point to the notion that hypnotic susceptibility and aptitude to enter an altered state of consciousness may have emerged within the human population from selection pressures and therefore may have been an evolutionary advantage in a percentage of the population that was highly susceptible to influences which can generate such effects.

11.5.2 The stage hypnosis process and implications for charismatic leadership theory in the light of the present research results

In relation to the first of these areas, as noted in earlier chapters, Estabrooks (1943/1957) made the striking assertion that Hitler’s emotional domination of crowds paralleled the process of stage hypnosis at ‘one step removed’; and (as was previously quoted in Chapter 1) in concluding his classic text on hypnotism he opened his final chapter with the following:

The reader will, in general, be familiar with two types of hypnotism, that used by the psychologist in his laboratory and that used by the stage performer . . . The writer would call attention to a third type . . . The orator, in general, be he on the radio or directly addressing an audience, uses all
the psychological tricks of the hypnotist and gets most of the results achieved by the latter. (Estabrooks, 1943/1957: 235)

In order to explore these assertions at first hand, and particularly the idea that some leadership may be akin to stage hypnosis at ‘one step removed’, the author attended stage hypnosis training with a leading UK stage hypnotist, as a participant observer (see section 1.3.2). It was clear from this experience, together with a review of the relevant literature, that Estabrooks’ observations had a degree of plausibility.

In the various but limited descriptions of stage hypnosis by academics, writers have documented the relative importance of first building an audience’s expectations about the power of the hypnotist, after which are deployed increasingly demanding suggestibility tests with the whole audience (Barber, 1976b; Estabrooks, 1943/1957; Yapko, 2003). A typical test (and one of the ones deployed in the present investigation) involves asking the audience to close their eyes, turn one arm (outstretched) upside down with a clenched fist whilst relaxing the other hand with a floppy wrist. The hypnotist then instructs the audience to imagine that their clenched fist is a heavy iron ball and that the other hand has a balloon tied to it, which ascends into the sky taking their hand with it.

When the audience has completed the task and eyes are open, the hypnotist reveals the ‘one-in-five club’ (Estabrooks, 1943/1957) (those, for example, with a wide gap between a descended ball hand and a floated balloon hand) to all present. In using the phrase ‘one-in-five club’ Estabrooks is referring, of course, to the top 20% of the population in respect of their hypnotic susceptibility. In the vast majority of cases, it is the highly susceptible person who is most amazed and reacts accordingly to their neighbours, neighbours who in many cases will provide encouragement to them to volunteer to go up on stage and be hypnotised. Those who join the hypnotist on stage are then engaged in a formal hypnotic induction, often involving the focusing of attention on stage lights and sudden pulling back into a chair with the instruction ‘sleep’ (known as a ‘shock’ induction). It is this latter part of the preliminary process.
(formal induction) that is almost certainly the ‘one step removed’ alluded to by Estabrooks (1943/1957).

Following induction, the hypnotist can then easily instruct the hypnotised to perform the various ‘entertaining’ tasks with which stage hypnosis is associated, precisely because the ‘right’ people are up on stage with the hypnotist. Other key skills taught during the stage hypnosis training observed, documented variants of which appear in the wider literature (for example, in Barber, 1976b; McGill, 1975; 1977), included:

- The rapid rejection and disposal of any participants who come out of trance, whose levels of trance are not deep enough or who are faking in a way unnoticed by the audience; and ‘off microphone’ instructions to return to seats. This approach is enhanced by the fact that stagehands immediately remove any emptied chairs so that the audience’s attention is prevented from dwelling on the moments of hypnotic ‘failure’, and the memory of those who are no longer under the hypnotist’s influence is essentially eradicated as the audience focuses on those who are still performing.

- Learning to build an ‘individualised’ hypnotic relationship with each subject on the stage; a concept that echoes ideas taught in management and leadership courses and the individualised consideration described by Bass and colleagues (Avolio, 1999; Bass and Avolio, 1990a). Indeed, once such a relationship is established, stage hypnotists claim to be able to reactivate it long after the ending of the stage show whenever they encounter the individual again (Chase, 2000).

- The use of a combination of ‘covert’ instructions to the hypnotised (off microphone) that are not heard by the audience, alongside more overt statements to the crowd as a whole – enhancing the impression of power and obedience and preserving the illusion that it is the hypnotist’s skills rather than the subject’s susceptibility that underpins the process. For a detailed description of the approach used by the particular stage hypnotist in question, the reader is directed to Chase (2000; 2006) and
for texts covering the wider techniques deployed in stage hypnosis to McGill (1975; 1977; 1996).

In combining the elements above, the stage hypnotist makes maximum use of all three of the often theoretically opposed (as state and non-state perspectives) but fundamental pillars of hypnotic theory: expectancy, attitude and aptitude (see Pekala et al., 2010a, for a discussion of how these can be seen as parts of the same theory). In the context of the stage performer, these emerge as the building of *expectancy* (through an introductory talk), a search for *aptitude* within the audience (identification of high susceptibility individuals using group tests) and the filtering out of those with a positive *attitude* and desire to be hypnotised, and play the role of subject (through volunteering). The ultimate goal is not just to find and manipulate the ‘one-in-five club’ (Estabrooks, 1943/1957), but also to leave the audience believing the hypnotist could perform his art with all people in any context.

Of all the steps in the process, however, it is the present author’s view (based on observation of stage hypnosis and discussions with participants), that it is the intensity of feelings of self-loss and involuntariness within the most susceptible during the susceptibility tests that ultimately persuades them to take the next step (to volunteer for hypnosis on stage). Further, and by extension, these are feelings that receive amplification through the preliminary altered state of consciousness associated with the testing process, particularly with regard to the beginnings of visual hallucinations, such as seeing the balloon drawing the hand into the sky. Indeed, stage hypnotists claim that the most susceptible are already in a waking trance before formal induction as a result of the testing process, if done correctly (Chase, 2006).

Bearing the above in mind, and the main conclusions above, a striking implication emerges, namely that:

*Implication 1 – A ‘world-class’ charismatic leadership speech may be acting, within the process of charismatic leadership, in a similar way to the hypnotic susceptibility test during stage hypnosis, prior to a ‘call for volunteers’; specifically, as a means of engaging the most susceptible followers in a process of self-selection contingent on the*
extent to which they experience an altering of consciousness and accompanying feelings of involuntariness.

Just as in stage hypnosis, where highly hypnotisable people (and often, hypnotic virtuosos) are led to volunteer to join the hypnotist on stage as a result of their experiences, which they misattribute to the power of the hypnotist when these experiences are in fact a result of trait-driven responsiveness, so it may be with the charismatic speech. In other words, charismatic oratory may be triggering similar susceptibility trait-driven internal hallucinations that motivate some followers to join the leader’s inner group of committed followers.

From such a perspective, the people who decide to follow an orator in a leadership context may be those who experience a significantly altered state of consciousness within conscious awareness in response to the speech. The consequent range of possible responses then becomes visible in the type of behaviours that Kellerman described as being indicative of levels of engagement (Diehards, Activists, Participants, Bystanders or Isolates) depending on the context.

Beyond just this speculation, the present research did, as we have seen, yield preliminary empirical evidence for such a parallel relationship between the suggestibility test in stage hypnosis and the effects of charismatic oratory. As described in Chapter 7, the author used the same suggestibility tests taught during the observed stage hypnosis training (Chase, 2000: 63-67), positioning these as an additional condition for all participants at the very end of the research to avoid contaminating the three main conditions with the experience. There was a moderately strong positive correlation between participants’ motor suggestibility and hypnoidal state during the charismatic speech ($r(121) = .27$, $p = .001$ (one-tailed)) as well as a small positive correlation ($r(121) = .16$, $p = .046$ (one-tailed)) between their expectations of being influenced prior to viewing the speech and their motor suggestibility. Although these were relatively weak relationships in comparison to some of the findings in the Main Studies, nonetheless it appears that oratory activates the same, or similar, mechanisms to those associated with involuntariness as the hypnotist during hypnotic susceptibility tests.
Returning to the stage hypnotic process, eventually the stage hypnotist reduces the group on stage to a smaller number by sending the least susceptible back to the audience. The aim of this further reduction is to leave the hypnotist with a group of individuals likely to be the type of hypnotic virtuosos able to act out instructions in an apparent waking state, not just sleep, and hallucinate. Stage hypnotists refer to these types as ‘somnambulists’ – people who can be in a deep trance but look as if they are wide awake to an observer when carrying out the hypnotist’s instructions (see Chase, 2000; McGill, 1975; 1977; 1996).

Typically, the experience of the hypnotised subject, in contrast to their visible behaviour (eyes open and acting out the instruction of the hypnotist), is that of sleeping and dreaming of completely unrelated content. One example, within the repertoire of the stage hypnotist observed, involved getting a high hypnotisable to remain in trance during the full 20 minute interval of the show and become an ‘elbow checker’, walking around the theatre bar and checking that the elbows of all the audience worked (see for a video example of this, Chase (2006)).

To reiterate, the intended effect of the processes described above is not just to entertain, but also to create a mystique and deliberate misconception about the ‘power’ of the hypnotist and the hypnotist’s apparent ability to control people’s minds in a sort of ‘Svengali’-like way.

In addition to compliance building without pressure (Freedman and Frazer, 1966) within the selection process, the success of stage hypnosis shows as entertainment rests with the stage hypnotist’s ability to generate social conformity effects (Asch, 1956) in the audience, that lead the audience to believe that the hypnotist has such power over all people, a form of deliberate over-attribution. In turn, such effects build further expectancy and obedience (Milgram, 1963; 1974) in the subjects who are inclined to participate on stage and have the levels of hypnotic aptitude necessary to perform.

In this way, the stage hypnotist does indeed, as Estabrooks (1943/1957) suggests, appear to skilfully combine many of the core psychological processes of social influence (Cialdini and Goldstein, 2004) within which is hidden the deception that such feats could be achieved with anyone. It is also, perhaps,
not too much of a stretch to see parallels between increasingly difficult suggestibility tests (as employed in the process of stage hypnosis) and a call for volunteers, and increasingly compliant follower actions – such as ‘attending the meeting’, ‘joining the party’, ‘wearing the uniform’, ‘joining the leadership team’, ‘appearing alongside the leader’, ‘initiating others’ etc. Jim Jones, for example, one of the hypnotic leadership case studies explored by Popper (2002a) travelled around the US speaking, and arguably, collecting the most susceptible into a single homogeneous group through precisely such a process – embedded within which was the charismatic speech. Ultimately, of course, Jones’ followers were to demonstrate disastrous and lethal levels of obedience and loss of sense of self, following a long period of influence and perhaps altered consciousness.

11.5.3 Adopting an evolutionary perspective as one possible way of explaining the similarities between the effects of hypnosis and the effects of oratory

Having addressed the purpose of the research and found that the association between charismatic effects and hypnotic effects may be more than mere speculation, the challenge is left of explaining how this could have arisen. One potential speculation, because of the various forms of evidence from hypnosis pointing to the possibility that hypnotic susceptibility may have developed though selection pressures, is to take an evolutionary perspective.

Although the management and leadership literature has largely ignored evolutionary theory, mainly because of the multi-level issues involved in connecting evolutionary theory, organisational science and leadership (Yammarino and Dansereau, 2011), there are exceptions. Van Vugt and colleagues, for example, have advanced the notion of an evolutionary science of leadership, drawing on a range of evolutionary perspectives in order to explain aspects of the phenomena of leadership and followership (van Vugt, 2006; 2008; van Vugt 2010; van Vugt, Hogan and Kaiser, 2008). However, rather than taking a particular stance with regard to the range of existing leadership theories, van Vugt and others have chosen to apply evidence from evolutionary science to the broad range of existing theories. With regard to
transformation and transactional theory (within which, as we saw, charismatic leadership can be seen as a subset of transformational theory), van Vugt and Ahuja (2011) argue that:

We think that transformational leaders, who we would expect to be charismatic, would have been very effective at keeping ancestral groups together . . . because transformational leaders are not obliged to their followers in quite the same mercenary way as are transactional leadership. . . . Evolutionary theory predicts that our Stone Age psyches find transformational leaders more attractive than transactional leaders; there is no such thing as payment on the savannah, and tribesmen earned the right to lead through their powers of persuasion. (van Vugt and Ahuja, 2011: 37)

Such arguments, in the light of the present results, can be seen as providing a rationale for looking at emerging thinking about the possible evolutionary benefits of hypnotic susceptibility as a further way of explaining the findings discussed above. Such areas of discussion have increasingly emerged in the academic hypnosis literature and offer a range of perspectives on how hypnotic susceptibility may have arisen through selection pressures (Dienes, 2012; Elitzur, 2006; Oakley, 2006; Lichtenberg et al., 2000; Ray and Tucker, 2003; Santarcangelo and Sebastiani, 2004). Implicit in such theories is the idea that hypnotic susceptibility, or the mechanisms that underpin it, may have had some form of evolutionary advantage in the past. Certainly, the evidence increasingly points to a degree of heredity both in relation to hypnotic susceptibility and in relation to susceptibility to enter an altered state of consciousness. As we noted above, research has shown hypnotic susceptibility to be stable over a person’s lifetime (over periods of 10–25 years) (Piccione, Hilgard and Zimbardo., 1989), and (in a small number of studies) has been found to be heritable (Morgan, 1973; Morgan, Hilgard and Davert, 1970; Lichtenberg et al. 2000). Hypnotic susceptibility can, in fact, first be measured from around the age of five and appears to attain a peak during the pre-teen years, following which it seems to diminish slightly, remaining more or less stable over the rest of a person’s lifetime (Piccione, Hilgard and Zimbardo, 1989). It is evidence of this kind that begs the question as to what may have been the value of such adaptations within the processes of natural selection.
If not the product of selection pressures, why do such traits appear heritable and stable?

One possibility is that there was advantage in a range of responses to an alpha leader’s behaviour (from involuntary following to involuntary ignoring) in crisis situations. Such a leader might be right or wrong from a survival perspective, in which case a mechanism that ensured that not all followed blindly, whilst others followed immediately and decisively, could have had advantages. Linked to such ideas, some have suggested that hypnosis is related (Woody and Szechtman, 2007) to mammalian hierarchy (Wilson, 1975) and social cohesion (Ray, 2007).

Plainly, however, we must also acknowledge the possibility that such adaptations have been without benefit. After all, evolution through natural selection is a two-stage process. Firstly, random genetic mutations arise in populations. Following this, environmental conditions filter out organisms, acting as a sort of screen. Some mutations are beneficial, some lethal, others neutral. Both beneficial and neutral mutations pass through the screen of changing life conditions. Having said this, alternative views in the literature tend to argue for other forms of benefit rather than neutrality; for example that there may be a link to the very nature of consciousness, metacognition, executive control and our sense of self (Dienes and Perner, 2007; Oakley, 1999). As Oakley expresses it:

\[ \ldots \text{there seems to be an evolutionary need to develop a privileged processing system with priority over action – where the most important actions and best solutions can be selected and implemented without interference from competing mental processes taking place within the burgeoning consciousness system. (Oakley, 1999: 217)} \]

In support of such arguments stands the evidence that hypnotisability may be tied to the openness, or flexibility, of the frontal executive control structure in relating to externally generated pressures to modify the way in which information is passed from consciousness to self-awareness. In more dramatic terms the hypnotic procedure could be seen as ‘a way of “hacking into” the executive control system and influencing its decision making’ (Oakley, 1999: 335).
However, it could be argued that such theories do not fully explain the existence of a wide range of responses to hypnosis and levels of susceptibility.

Other evidence may help in this respect. Granqvist, Reijman and Cardeña (2011) in a review of the literature on altered consciousness and human development, note how, more generally, ‘different strands of evidence support some type of heritability for the propensity to alter one’s consciousness’ (2011: 220). Specifically, they note how Halifax (1980) suggests that shamanism may be heritable, with a number of studies supporting a genetic contribution to areas such as absorption (Tellegen et al., 1988) and dissociation (Becker-Blease et al., 2004; Jang et al., 1998). Other evidence indicates that hypnotisability itself may be associated with the trait of self-transcendence and mental boundary thinness (Cardeña and Terhune, 2008); for its relationship to the origins of religion/shamanic practice (McClennon, 2001) and the neurophysiology of religious and spiritual experience (Newberg and D’Aguili, 2000), see Cardeña, 2005). Such a view arguably explains the apparent selection pressure to hold parallel yet divergent religious beliefs (noted by Alper, 1996).

The point to emphasise here is this: it seems that highly susceptible people are mostly unaware of their hypnotic abilities. Mohl (2013), for example, has shown that individuals ‘who are highly hypnotisable but never had the opportunity to experience hypnosis (i.e., on stage, in the laboratory, etc.) tend to have little inclination of their potential’ (2013: 13). In the context of the observations about the relationship between charismatic leadership and hypnosis made above, this is a phenomenon likely to amplify over-attribution rather than attenuate it. If a parallel lack of awareness was present in early humans who possessed such susceptibilities, experiences that triggered internal visions and imagery (as in the focusing of attention during ritual) could easily have become associated with imaginary ‘external forces’, rather than the development of a theory of cognition – a process suggested in the early twentieth century by Oesterreich (1930).

By extension, such inexplicable imaginings could have led susceptible individuals to become convinced of the existence of those things which appeared regularly within their visions, leading them to become convincing to
others in the wider group who may not have been so susceptible. Recent hypnosis theory, such as cold control theory, points in a similar direction. As Dienes puts it:

Because cold control is used in the service of overall goals, it can be placed in an evolutionary context. Whatever selective forces resulted in people acquiring ascriptive metacognitive abilities (and they are surprisingly hard to specify (Rosenthal, 2008)), there may be a selective reason for people to strategically remain unaware of their intentions in certain contexts. Dienes and Perner (2007) argue that cold control has shown itself in every continent through all known history – in the form of spirit possession. Not only is spirit possession widespread; it comes with certain advantages when it is genuinely contextually appropriate and involves genuine self-deception (i.e. when it involves cold control). (Dienes, 2012: 276)

Whatever the reason for the development of hypnotic susceptibility, should such a mechanism have had wider advantages over time, related to social cohesion and hierarchy, this in turn could explain the reason why altered state effects could remain part of modern human behaviour as exemplified in the results above. Once associated with social processes such as rituals, shamanic and religious hierarchies, sexual selection could then have further embedded susceptibility adaptations.

In summary:

**Implication 2 – The shared responses to the processes of hypnosis and charismatic leadership and their effects on consciousness today may both have arisen through selection pressures in early human evolution and be related to both the potential benefits of mammalian hierarchy, social rituals and related religious and shamanic practices involving ritual and imaginative suggestion.**

One final implication arises from such a possibility which has relevance to recent speculations about so-called ‘leaderless’ contexts in which individuals nonetheless appear to behave as if influenced by a charismatic leader.
Implication 3 – If innate follower susceptibility is a factor in charismatic leadership, this explains some aspects of the phenomenon of apparently leaderless follower groups who behave in a way that would normally be associated with a group close to a single highly charismatic or cult leader (noted to be the case in some recent forms of international and ‘intra-national’ terrorism).

A number of writers have noted the phenomenon of apparently ‘leaderless resistance’ in a wide range of terrorist contexts (Blazak, 2001; Dishman, 2005; Joosse, 2007; Sageman, 2008; Bousquet, 2012). Two points seem relevant to make in relation to such phenomena. Firstly, if a text or influential body of ideas (high in imaginative suggestion) existed in such a context, it could be enough to replace the actual presence of a leader and act as a selection mechanism, priming the most susceptible to then influence one another, if they began to interconnect. In other words, a text or body of influential ideas (if they contained sufficient depth of imaginative suggestion, metaphor and visual imagery) could act as a central touchstone for even the most disparate and otherwise unconnected group. As such a touchstone, it would fulfil the role of triggering the experience of an altered state of consciousness in individuals when they return to it in times of need, crisis or even on a daily basis, becoming an ongoing susceptibility test and reinforcement of their altered state of consciousness.

Secondly, as Popper notes in his discussions of altered state and hypnotic leadership (2002a), a number of studies suggest correlations between the effect of being in an altered state of consciousness for a substantial, continuous period and radical alterations to a range of personal attributes and attitudes (Lifton, 1969; Popper, 2002a). Relevant to the findings above, Tart also thought that extended exposure to a discrete state of consciousness (d-SoC) could lead to such a state being adopted as an identity state (i-SoC) or a new baseline state of consciousness (b-SoC) (Tart, 1972; 1975: 1977) (see Chapter 8). Such theories, when applied to charismatic leadership, and the interpretation of the findings above, partly explain the incomprehensible behaviours (from the perspective of parents and former friends) of individuals who join radical groups and cults, who seem to become different people as a
result. Further, the combination of such mechanisms (a touchstone capable of altering consciousness and prolonged exposure to such alteration) might explain why terrorist organisations grounded in powerful ideologies, rather than disappearing in response to extensive law enforcement and military action, seem able to easily decentralise and return to a state of leaderless resistance, or small independent networked cell structures (see Dishman, 2005).

11.6 Concluding remarks and recommendations for future research

11.6.1 Final conclusions

There have to be, of course, caveats in making claims about a relationship between hypnosis and charismatic influence. In the first place, adopting the fundamentally psychological method that the present research has, itself has limitations, and one cannot of course deny the potential influence of a wide range of additional factors related to individual beliefs and contextual influences which have not been assessed in the Main Studies. Nor is it intended to suggest that the effects of such innate traits are not further amplified by a leader’s communication skills style and the real world context within which a leadership speech may occur. Rather, the author’s contention is that the evidence in the present research should be seen as providing definition around the concept of the charismatic leader as the ‘spark’ that ignites the ‘fire’, as Popper puts it (2002); and further, that this particular component in the process shares characteristics with hypnosis that are sufficient to explain the frequently hypothesised relationship between hypnosis and charismatic leadership. However, as in hypnosis, the answer to the way in which the process of influence works resides in the susceptibilities of those perceiving leadership to have taken place rather than in the leader and her/his behaviour.

It is perhaps an even more sobering thought to recall that the participants in the present research were not equal rights activists attending a rally in support of a cause that has serious implications for their daily life. Thus, it seems that a present crisis may not always be necessary to generate an altered follower state of consciousness. Rather, the simple evocation of a crisis context from the past and oratory from that crisis could be sufficient to create an emotional
mindscape in which such effects receive amplification through the use of high levels of visual imagery and future-focused imaginative suggestions, ultimately (and in combination) altering consciousness just as if a leader were present.

Further, it is not the author’s intention that such explanations be seen as an attempt to deny the fact that, when it comes to giving speeches, some people are better orators and have traits that enhance their abilities to influence, nor does it deny that some can manage the processes that follow on from (or precede) the delivery of a speech more effectively. Rather, the findings again appear to illustrate that, if we are to understand fully how charismatic leadership creates such dramatic effects, it is, as Weber (1922/1968; 1924/1947) suggested, within followers that we are most likely to find the answers to such questions – not within leaders. Nor do the findings contradict Klein and House (1995) and Popper’s (2002a) suggestion that the ‘spark’ (the leader) in itself is not enough. Clearly, a wider group of followers need to be open to becoming the ‘fuel’ for the ‘fire’ of charismatic leadership and there needs to be some form of context to act as the ‘oxygen’ that sustains that ‘fire’. Instead, and drawing on this metaphor, the results from the present research provide evidence for the nature of oratory as a form of ‘spark’ and the types of followers most likely to ‘burn’ under the initial influence of charismatic leadership (whether invoked by proximity to a living leader or media that triggers parallel responding in a lone individual). Once ignited, how well such a fire spreads through the population at large is probably a function of other factors, including the group’s perception of the wider circumstances. Hans Frank’s chilling confession to his prison psychologist at the Nuremberg trials (already referred to in Chapter 2) illustrates perhaps just how long such residual altered state effects and misattributions can last, even when the context has changed completely.

I can hardly understand it myself. There must be some basic evil in me. In all men. Mass hypnosis? Hitler cultivated this evil in man. When I saw him in that movie in court, I was swept along again for a moment, in spite of myself. Funny, one sits in court feeling guilt and shame. Then Hitler appears on the screen and you want to stretch out your hand to him . . . It’s not with horns on his head or with a forked tail that the devil comes to us,
you know. He comes with a captivating smile, spouting idealistic sentiments, winning one’s loyalty. We cannot say that Adolf Hitler violated the German people. He seduced us. (in Persico, 1994: 184)

Finally, it is important to remember that the participants in this investigation were not members of a disaffected group who had suffered economic hardship, or who were in the midst of a major crisis. Instead, they were ordinary employees who were part of a stable and prosperous company, ordinary employees who had agreed to take part in some research during their working day. If perceived charisma can produce such effects within such people, under such conditions, and if such effects are indeed hardwired, to the extent that they form a set of responses that are related to what makes us human, then it seems likely that the effects may also be present in daily life and in general management and leadership situations. Leaders in contexts wider than just the ones associated with extreme follower behaviour would do well, therefore, to consider carefully the potential effect of these forms of oratory, particularly as charismatic oratory may be subdividing followers in terms of their inner mindscape independently of logic, leading some to agree just because they are susceptible to such approaches; whilst those with governance responsibilities may want to consider whether their CEO is indeed a business person, or a modern day shaman, and whether a leader’s strategy is being determined using facts and analyses or the altered consciousness of believers.

11.6.2 Recommendations for future research
In the light of the conclusions above and the discussion in Chapter 10, future research may want to explore the following potential research designs: firstly, a replication of the present within-subject design with the current pseudo attention placebo condition replaced by the use of the PCI-Hypnotic Assessment Protocol containing the embedded standard hypnotic induction. Such a design would allow for the direct comparison of hypnosis and charismatic leadership oratory. Participants could also complete the Harvard Group Scale of Hypnotic Susceptibility procedure after the research was finished, to determine their level of hypnotisability through the most widely accepted means. Alternatively, charismatic leadership oratory could be used as baseline assessment of follower type, with this then being used to define
matched pairs going forward into a between-subject design with hypnosis and eyes closed sitting quietly as the two conditions.

However, finding explanations for human behaviour often requires a number of different levels of analysis to take place. Drawing on the way in which integrated teams in fields such as biological psychology have progressed, the following could yield useful results. An integrated mixed-methods approach could make use of functional Magnetic Resonance Imaging or similar brain function measurement. Indeed this is one, as yet undeveloped, area of great potential for the PCI and its associated approaches (like the PCI-Hypnotic Assessment Protocol). As Pekala and Kumar suggest (2007):

Probably one of the most exciting potential applications of this approach to understanding hypnosis concerns its use with EEG, rMRI and positron emission tomography (PET) . . . it seems only logical that this psychophenomenological approach should be combined with cognitive neuroscience approaches. . . PET scan research by Rainville et al. (2002) appears to ‘support a state theory of hypnosis in which the basic changes in phenomenal experience produced by hypnotic induction reflect, at least in part, the modulation of activity within brain areas critically involved in the regulation of consciousness’ (p. 887). (Pekala and Kumar, 2007: 187-188)

An fMRI study involving the PCI which looked at hypnosis and included a replication of the use of the charismatic leadership speech in the present research design as an active control, has the potential both to concretise the ideas about hypnosis proposed by Pekala and colleagues and to test the shared domain theory related to hypnosis and charisma presented above. Such an approach could bridge some of the multi-level research method gaps pointed to by writers such as Yammarino and Dansereau (2011) and help to substantiate some of the more speculative evolution-related arguments presented above. It could also help to clarify the relationship between brain and mind, within the process, and resolve some of the challenges identified by Greenfield with regard to understanding the relationship between these two aspects of being human (Greenfield, 2001; 2002).
A further consideration, bearing in mind that a significant area of speculation about the relationship between charismatic leadership and hypnosis has referenced itself to ideas from attachment theory, might also be to include the use of a questionnaire which assesses participant attachment style prior to the commencement of any replication, or partial replication of the research design.
## Appendix A – Table of key terms and their definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorption</td>
<td>The amount to which a subject is continually distracted by external stimuli, or absorbed in their own world during a stimulus condition. One of the 14 PCI minor (or sub-) dimensions, absorption contributes to the major dimension measuring inward absorbed attention.</td>
</tr>
<tr>
<td>Anger</td>
<td>One of the 14 PCI minor (or sub-) dimensions, anger contributes to the major dimension measuring negative affect. This dimension assesses how enraged, very angry or upset a subject is feeling during a stimulus condition.</td>
</tr>
<tr>
<td>Altered body image</td>
<td>The extent to which bodily feelings are expanded into the world around. One of the 14 PCI minor (or sub-) dimensions, altered body image contributes to the major dimension measuring altered experience.</td>
</tr>
<tr>
<td>Altered experience</td>
<td>One of the 12 PCI major dimensions. Altered experience is constructed from the average of four minor dimensions. These are: altered body image (extent to which bodily feelings are expanded into the world around); altered perception (changes in perception (colour, shape, size and perspective)); altered time sense (extent to which perceptions of the passage of time has altered); and altered meaning (extent to which experiences might be called religious, spiritual, transcendent).</td>
</tr>
<tr>
<td>Altered meaning</td>
<td>The extent to which a subject has experiences during a stimulus condition that are religious, spiritual or transcendent. One of the 14 PCI minor (or sub-) dimensions, altered meaning contributes to the major dimension measuring altered experience.</td>
</tr>
<tr>
<td>Altered perception</td>
<td>To what degree a subject has experienced changes in their perception of the world, including changes in colour, shape, size and perspective. One of the 14 PCI minor (or sub-) dimensions, altered perception contributes to the major dimension of altered experience.</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>One of the 12 PCI major dimensions. Altered state of awareness assesses the extent to which people perceive themselves as experiencing a very unusual state of awareness or one that is not different to their usual experience.</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>The extent to which perceptions of the passage of time have altered, for example, whether time has sped up or slowed down. One of the 14 PCI minor (or sub-) dimensions, altered time sense contributes to the major dimension measuring altered experience.</td>
</tr>
<tr>
<td>Arousal</td>
<td>One of the 12 PCI major dimensions. Arousal assesses perception of muscle tension (very tense and tight, to not tense or tight).</td>
</tr>
<tr>
<td>Charismatic leadership</td>
<td>In the context of the present research, leadership styles associated with the far transformational end of Bass’s continuum (transformational, transactional, laissez-faire).</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>One of the 14 PCI minor (or sub-) dimensions, direction of attention contributes to the major dimension measuring inward absorbed attention. Direction of attention assesses to what degree a subject is directing their attention towards the external environment or towards subjective experience.</td>
</tr>
<tr>
<td>Expectancy</td>
<td>Refers to both the general concept of expectancy in hypnosis (how hypnotised a person thinks that they will be) and to the average of the two expectancy items from the PCI-Hypnotic Assessment Protocol (see Appendix B).</td>
</tr>
<tr>
<td>Fear</td>
<td>One of the 14 PCI minor (or sub-) dimensions, fear contributes to the major dimension measuring negative affect. This dimension measures how afraid, very frightened or scared a subject feels during a stimulus condition.</td>
</tr>
<tr>
<td>Followership</td>
<td>The response of people who are not the leader to a leadership context. What followers do as opposed to what leaders do.</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>See discussion in Chapter 1 and APA definition in Appendix S.</td>
</tr>
<tr>
<td>Hypnotic induction</td>
<td>The procedure followed by a hypnotist in order to induce hypnosis.</td>
</tr>
<tr>
<td>Hypnotism</td>
<td>Alternative term to hypnosis. However, some authorities have sought to define hypnotism as the process a hypnotist follows, with hypnosis as the state or set of measurable behaviour resulting from this. Mostly the term hypnosis is applied to both the input and the output, with the term hypnotic induction preferred for the process used by a hypnotist.</td>
</tr>
<tr>
<td>Hypnotic leadership</td>
<td>Forms of charismatic leadership associated by with the term hypnotic leadership. In other words, forms of leadership in which followers lose their sense of self and behave as if hypnotised.</td>
</tr>
<tr>
<td>Hypnoidal state</td>
<td>The phenomenological state measured by predicted Harvard Group Score (pHGS). pHGS &gt; 0.7 has been shown to have convergent validity with the experience of high hypnotic susceptibility individuals in response to a standardised hypnotic assessment protocol. See pHGS, below.</td>
</tr>
<tr>
<td>Hypnoidal state score</td>
<td>Alternative name for predicted Harvard Group Score (pHGS).</td>
</tr>
<tr>
<td>Hypnotic susceptibility</td>
<td>Trait susceptibility to hypnosis formally measured using scales such as the Harvard Scale of Hypnotic Susceptibility. Evidence points to this trait being both stable over a lifetime and heritable.</td>
</tr>
<tr>
<td>Imagery, amount of</td>
<td>The volume of internal imagery a subject experiences during a stimulus condition. One of the 14 PCI minor (or sub-) dimensions that contributes to the major dimension measuring vivid imagery.</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Imagery, vividness</td>
<td>The extent to which any internal imagery has clarity, three dimensionality or vividness compared to reality. One of the 14 PCI minor (or sub-) dimensions that contributes to the major dimension measuring vivid imagery.</td>
</tr>
<tr>
<td>Imagoic suggestibility</td>
<td>The concept measured by imagoic suggestibility scores (see below). This measure seeks to operationalise the concept frequently referred to in the literature as imaginative suggestion (or imaginative suggestibility).</td>
</tr>
<tr>
<td>Imagoic suggestibility score (ISS)</td>
<td>One of the measurements that is generated by the PCI-Hypnotic Assessment Protocol. It measures the extent to which a person experiences internal imagery in relation to suggestions to do so from the hypnotist. A modified version of the ISS item was used in the present research to measure the amount of visual imagery experienced by participants in response to the orator’s metaphors and visual language.</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>One of the 12 PCI major dimensions. Internal dialogue provides a measure of the extent to which a person is engaging in silent self-talk, or not.</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>One of the 12 PCI major dimensions. Inward Absorbed Attention is constructed from the average of two minor dimensions. These are: direction of attention (which assesses if a subject is directing attention towards the external environment or towards internal subjective experience) and absorption, which assesses the extent to which a participant is continually distracted by external stimuli or absorbed in their own world. Inwardly focused attention is frequently associated with the effects of hypnosis and it is this aspect of hypnotic susceptibility that this measure seeks to operationalise.</td>
</tr>
<tr>
<td>Joy</td>
<td>One of the 14 PCI minor (or sub-) dimensions, joy contributes to the major dimension measuring positive affect.</td>
</tr>
<tr>
<td>Love</td>
<td>One of the 14 PCI minor (or sub-) dimensions, love contributes to the major dimension measuring positive affect.</td>
</tr>
<tr>
<td>Memory</td>
<td>One of the 12 PCI major dimensions. Memory measures a participant’s perception of whether they were able to remember everything they experienced.</td>
</tr>
<tr>
<td>Motor suggestibility</td>
<td>A measure included in the adapted PCI-Hypnotic Assessment Protocol used in the present research to replace the motor suggestions in the PCI-Hypnotic Assessment Protocol. In the present investigation the measure is constructed from self-reports in response to two suggestibility tests frequently used during the select procedures used by stage hypnotists.</td>
</tr>
<tr>
<td><strong>Negative affect</strong></td>
<td>One of the 12 PCI major dimensions. Negative affect is constructed from the average of three minor dimensions. These are: anger (being enraged, very angry or upset); sadness (feelings of related to being sad or unhappy) and fear (feeling afraid/very frightened/scared).</td>
</tr>
<tr>
<td><strong>PCI-Hypnotic Assessment Protocol</strong></td>
<td>The protocol designed by Dr Ronald J. Pekala which consists of pre- and post-hypnosis questions, a standard hypnotic induction and completion of the PCI in response to the induction. Permission was given to adapt this protocol so that a charismatic speech could be nested within the approach in replacement of the hypnotic induction.</td>
</tr>
<tr>
<td><strong>Phenomenology of Consciousness Inventory (PCI)</strong></td>
<td>The 53-item questionnaire designed by Dr Ronald J. Pekala and developed from its predecessor, the Phenomenology of Consciousness Questionnaire (see Pekala, 1991).</td>
</tr>
<tr>
<td><strong>Positive affect</strong></td>
<td>One of the 12 PCI major dimensions that assesses positive emotional feelings. Positive affect is constructed from the average of three minor dimensions. These are: joy (happiness/ecstasy), sexual excitement (intensity of sexual feelings) and love.</td>
</tr>
<tr>
<td><strong>Rationality</strong></td>
<td>One of the 12 PCI major dimensions. Rationality assesses clarity of thinking, how distinct an individual's thinking is, whether they found comprehension easy and whether they experienced confusion or difficulty in understanding.</td>
</tr>
<tr>
<td><strong>Sadness</strong></td>
<td>One of the 14 PCI minor (or sub-) dimensions, sadness contributes to the major dimension measuring negative affect. This dimension measures a subject's feeling related to being sad or unhappy during a stimulus condition.</td>
</tr>
<tr>
<td><strong>Self-awareness</strong></td>
<td>One of the 12 PCI major dimensions. Self-awareness provides an assessment of how aware of self a person is and whether there is any loss of consciousness of self, or loss of an awareness of self.</td>
</tr>
<tr>
<td><strong>Self-reported depth of influence (srDI)</strong></td>
<td>One of the measures that was adapted from items in the PCI-Hypnotic Assessment Protocol. In the case of the present research it assessed the extent to which a subject felt affected emotionally and influenced by the orator. The original PCI-Hypnotic Assessment Protocol item (Post-Hypnosis Self-Reported Hypnotic Depth Score (srHD) provides a measure of a participant's subjective estimate of hypnotic depth following induction.</td>
</tr>
<tr>
<td><strong>Sexual excitement</strong></td>
<td>One of the 14 PCI minor (or sub-) dimensions, sexual excitement contributes to the major dimension measuring positive affect.</td>
</tr>
<tr>
<td><strong>Stage hypnosis</strong></td>
<td>The performance art in which a hypnotist follows a selection process to identify and invite high hypnotic susceptibility individuals to be induced on stage. Following this, humorous, and sometimes bizarre acts (such as eating an onion), are suggested to the subjects who then carry them out.</td>
</tr>
<tr>
<td>Trance depth</td>
<td>Phrase used in the literature to refer to increases and decreases in predicted Harvard Group Score and thus a person’s hypnoidal state.</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>One of the 12 PCI major dimensions, visual imagery is constructed from the average of two minor (or sub-) dimensions. These are: amount of visual imagery (volume of internal images experienced by the subject) and the vividness of the imagery (clarity, three-dimensionality, vividness compared to reality).</td>
</tr>
<tr>
<td>Volitional control</td>
<td>One of the 12 PCI major dimensions, volitional control looks at the extent to which a person’s experience was one of complete control (or will) over what they were paying attention to, whether they felt passive and receptive or had thoughts and ideas come to mind without any sense of control.</td>
</tr>
</tbody>
</table>
Appendix B – Trance tables for studies where hypnoidal state has been reported or from which it can be calculated (n = 7,257), with insertion of results from Main Studies A and D []

<table>
<thead>
<tr>
<th>Condition</th>
<th>Whole participant group or sub-group</th>
<th>pHGS</th>
<th>Sub **</th>
<th>Participants</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discarnate reading by mediums</td>
<td>Whole group</td>
<td>7.47*</td>
<td>10 M</td>
<td>7</td>
<td>Rock and Beischel (2008)</td>
</tr>
<tr>
<td>Hypnosis (non-standard protocol x 3)</td>
<td>Hypnotic 'virtuosos' (Harvard score M = 10.58)</td>
<td>7.09</td>
<td>9 S</td>
<td>12</td>
<td>Cardeña (2005)</td>
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</table>

High hypnoidal state ↑

<table>
<thead>
<tr>
<th>Condition</th>
<th>Whole participant group or sub-group</th>
<th>pHGS</th>
<th>Sub **</th>
<th>Participants</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive relaxation</td>
<td>High hypnotic susceptibility (9–12)**</td>
<td>6.91</td>
<td>9 SN</td>
<td>57</td>
<td>Pekala and Forbes (1988)</td>
</tr>
<tr>
<td>Charismatic leadership oratory</td>
<td>Follower Type IV</td>
<td>6.38</td>
<td>8 B</td>
<td>18</td>
<td>Present Main Study D</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Harvard score 6</td>
<td>6.31*</td>
<td>8 SP</td>
<td>44</td>
<td>Kumar, Pekala and Marcano (1996)**</td>
</tr>
<tr>
<td>Procedure</td>
<td>Hypnotic Susceptibility Level</td>
<td>Hypnosis Score</td>
<td>N</td>
<td>Study Reference</td>
<td></td>
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<tr>
<td>Charismatic leadership oratory</td>
<td>Type V Followers</td>
<td>6.25</td>
<td>8</td>
<td>B 27 Present Main Study D</td>
<td></td>
</tr>
<tr>
<td>Scalar room condition space meditation</td>
<td>Whole group (Group A)</td>
<td>6.23*</td>
<td>8</td>
<td>RM 40 Löffler (2007)</td>
<td></td>
</tr>
<tr>
<td>Partial epileptic seizure</td>
<td>Whole group</td>
<td>6.18**</td>
<td>8</td>
<td>PEP 40 Johanson et al. (2008)</td>
<td></td>
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<tr>
<td>Progressive relaxation</td>
<td>Whole group</td>
<td>6.12*</td>
<td>7</td>
<td>SN 246 Pekala and Forbes (1988)</td>
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</tr>
<tr>
<td>'Shamanic' monotonous drumming</td>
<td>High hypnotic susceptibility (9–12)**</td>
<td>6.11*</td>
<td>7</td>
<td>SP 169/3 Maurer et al. (1997)</td>
<td></td>
</tr>
<tr>
<td>Scalar room condition space meditation</td>
<td>Whole group (Group B)</td>
<td>6.06*</td>
<td>7</td>
<td>RM 40 Löffler (2007)</td>
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<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Whole group</td>
<td>6.03*</td>
<td>7</td>
<td>SP 167 Kumar and Pekala (1988)</td>
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<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Medium absorption</td>
<td>6.02*</td>
<td>7</td>
<td>SP 57 Kumar and Pekala (1988)</td>
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<td>Hypnosis (Harvard Induction)</td>
<td>Whole group</td>
<td>5.96*</td>
<td>7</td>
<td>S 173 Pekala, Steinberg and Kumar (1986)</td>
<td></td>
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<tr>
<td>Progressive relaxation</td>
<td>Low medium hypnotic susceptibility (5–6)**</td>
<td>5.89</td>
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<tr>
<td>Hypnosis (Harvard Induction)</td>
<td>Low-medium hypnotic susceptibility (5–6)**</td>
<td>5.73</td>
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<td>SN 51 Pekala and Forbes (1988)</td>
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<tr>
<td>Hypnosis (Harvard Induction)</td>
<td>Low absorption</td>
<td>5.53*</td>
<td>6</td>
<td>SP 57 Kumar and Pekala (1988)</td>
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<tr>
<td>Progressive relaxation</td>
<td>Low hypnotic susceptibility (0-4)**</td>
<td>5.43</td>
<td>6</td>
<td>SN 68 Pekala and Forbes (1988)</td>
<td></td>
</tr>
<tr>
<td>Hypnosis (PCI-HAP induction)</td>
<td>Whole group</td>
<td>5.42</td>
<td>6</td>
<td>PSb 123 Pekala et al. (2010b)</td>
<td></td>
</tr>
<tr>
<td>Harvard Induction (see author's note)***</td>
<td>High hypnotic susceptibility (10–12)** – low dissociativity</td>
<td>5.40</td>
<td>6</td>
<td>SP 10 Kumar, Pekala and Marcano (1996)***</td>
<td></td>
</tr>
<tr>
<td>Charismatic leadership oratory</td>
<td>Follower Type II</td>
<td>5.29</td>
<td>6</td>
<td>B 17 Present Main Study D</td>
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<tr>
<td>Biodynamic cranio-sacral osteopathy</td>
<td>Whole group</td>
<td>5.28*</td>
<td>6</td>
<td>P 49 Nyul (2009)</td>
<td></td>
</tr>
<tr>
<td>Recall of religious experience</td>
<td>Whole group</td>
<td>5.27*</td>
<td>6</td>
<td>UV 39 Wildman and McNamara (2010)</td>
<td></td>
</tr>
<tr>
<td>Shamanic journey with specific suggestions</td>
<td>Whole group</td>
<td>5.26*</td>
<td>6</td>
<td>SP 68/3 Rock, Casey and Baynes (2006)</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>Group</td>
<td>pHGS</td>
<td>Condition</td>
<td>Mean ± SD</td>
<td>Reference</td>
</tr>
<tr>
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<td>------</td>
<td>-----------</td>
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<td>---------------------------------------------------------------------------</td>
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<tr>
<td>Shamanic journey then 15 mins ‘ganzfeld’</td>
<td>Whole group</td>
<td>5.25*</td>
<td>S</td>
<td>140/3</td>
<td>Rock et al. (2008a)</td>
</tr>
<tr>
<td>‘Shamanic’ Monotonous drumming</td>
<td>Whole group</td>
<td>5.20</td>
<td>S</td>
<td>140/3</td>
<td>Rock et al. (2008a)</td>
</tr>
<tr>
<td>Eyes open and two shamanic combined</td>
<td>Whole group</td>
<td>5.12*</td>
<td>RM</td>
<td>40</td>
<td>Löffler (2007)</td>
</tr>
<tr>
<td>Meditation at home (post-Scalar experience)</td>
<td>Whole group</td>
<td>5.11</td>
<td>B</td>
<td>27</td>
<td>Present Main Study D</td>
</tr>
<tr>
<td>Archive film of crowd and speech context</td>
<td>Follower Type V</td>
<td>5.09</td>
<td>B</td>
<td>121</td>
<td>Present Main Study A</td>
</tr>
<tr>
<td>Charismatic leadership oratory</td>
<td>Whole group</td>
<td>5.09</td>
<td>SP</td>
<td>53</td>
<td>Kumar and Pekala (1988)</td>
</tr>
<tr>
<td>Meditation at home (pre-Scalar Room)</td>
<td>Whole group</td>
<td>5.01</td>
<td>RM</td>
<td>40</td>
<td>Löffler (2007)</td>
</tr>
<tr>
<td>Moderate hypnoidal state ↑</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Whole group</td>
<td>4.98</td>
<td>S</td>
<td>43/3</td>
<td>Rock et al. (2008b)</td>
</tr>
<tr>
<td>Meditation at home (pre-Scalar Room)</td>
<td>Whole group (Group B)</td>
<td>4.96*</td>
<td>RM</td>
<td>40</td>
<td>Löffler (2007)</td>
</tr>
<tr>
<td>Shamanic journey w/o specific suggestion</td>
<td>Whole group</td>
<td>4.96*</td>
<td>SP</td>
<td>68/3</td>
<td>Rock, Casey and Baynes (2006)</td>
</tr>
<tr>
<td>Mean for all group/condition means, pHGS = 4.93</td>
<td></td>
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<td></td>
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<tr>
<td>Eyes closed sitting quietly</td>
<td>Whole group</td>
<td>4.93*</td>
<td>SP</td>
<td>72</td>
<td>Woodside, Kumar and Pekala (1997)</td>
</tr>
<tr>
<td>Hypnosis (Harvard Induction)</td>
<td>Follower Type IV</td>
<td>4.90</td>
<td>B</td>
<td>18</td>
<td>Present Main Study D</td>
</tr>
<tr>
<td>Monotonous drumming</td>
<td>Whole group</td>
<td>4.82*</td>
<td>SP</td>
<td>73</td>
<td>Woodside, Kumar and Pekala (1997)</td>
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<tr>
<td>Meditation at home (pre-Scalar Room)</td>
<td>Whole group (Groups A and B)</td>
<td>4.79*</td>
<td>RM</td>
<td>80</td>
<td>Löffler (2007)</td>
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<tr>
<td>Shamanic journey – upper world</td>
<td>Whole group</td>
<td>4.75*</td>
<td>S</td>
<td>43/3</td>
<td>Rock et al., (2008b)</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Low susceptible individuals (0-4)</td>
<td>4.71*</td>
<td>5</td>
<td>SP</td>
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<td>Archive film of crowd and speech context</td>
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<td>4.62</td>
<td>5</td>
<td>B</td>
<td>25</td>
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<tr>
<td>Eyes open sitting quietly</td>
<td>Whole group</td>
<td>4.62</td>
<td>5</td>
<td>SP</td>
<td>68/3</td>
</tr>
<tr>
<td>Eyes open and two shamanic combined</td>
<td>Low schizotype individuals</td>
<td>4.56*</td>
<td>5</td>
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<td>140/2</td>
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<tr>
<td>Archive film of crowd and speech context</td>
<td>Whole group</td>
<td>4.50</td>
<td>5</td>
<td>B</td>
<td>121</td>
</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>High hypnotic susceptibility individuals (9-12)</td>
<td>4.50**</td>
<td>5</td>
<td>SN</td>
<td>57</td>
</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>High-medium hypnotic susceptibility individuals (7-8)</td>
<td>4.50**</td>
<td>5</td>
<td>SN</td>
<td>70</td>
</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Medium absorption</td>
<td>4.46*</td>
<td>5</td>
<td>SP</td>
<td>57</td>
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<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Medium hypnotic susceptibility (5-9) and dissociativity</td>
<td>4.43</td>
<td>5</td>
<td>SP</td>
<td>104</td>
</tr>
<tr>
<td>Eyes open sitting quietly</td>
<td>Whole group</td>
<td>4.42*</td>
<td>5</td>
<td>S</td>
<td>110</td>
</tr>
<tr>
<td>Hypnosis (Harvard induction)</td>
<td>Medium hypnotic susceptibility (5-9)</td>
<td>4.40</td>
<td>5</td>
<td>SP</td>
<td>188</td>
</tr>
<tr>
<td>Eyes open sitting quietly</td>
<td>Follower Type V</td>
<td>4.40</td>
<td>5</td>
<td>B</td>
<td>27</td>
</tr>
<tr>
<td>Deep abdominal breathing</td>
<td>High-medium hypnotic susceptibility (7-8)</td>
<td>4.40*</td>
<td>4</td>
<td>NS</td>
<td>70</td>
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<tr>
<td>Charismatic leadership oratory</td>
<td>Follower Type III</td>
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<td>B</td>
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</tr>
<tr>
<td>Eyes open sitting quietly</td>
<td>Whole group</td>
<td>4.34*</td>
<td>5</td>
<td>S</td>
<td>140/3</td>
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<td>Recall of happy experience</td>
<td>Whole group</td>
<td>4.30*</td>
<td>4</td>
<td>UV</td>
<td>39</td>
</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Whole group</td>
<td>4.28*</td>
<td>4</td>
<td>NS</td>
<td>246</td>
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<tr>
<td>'Shamanic' monotonous drumming</td>
<td>Low hypnotic susceptibility (0-4)</td>
<td>4.26*</td>
<td>4</td>
<td>RM</td>
<td>169/3</td>
</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Hypnotic Type V 'Visualisers' (7.67)</td>
<td>4.24</td>
<td>4</td>
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<td>12</td>
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<tr>
<td>Monotonous drumming, trance postures and suggestions</td>
<td>Whole group</td>
<td>4.23*</td>
<td>4</td>
<td>SP</td>
<td>60</td>
</tr>
<tr>
<td>Eyes open sitting quietly</td>
<td>Follower Type IV</td>
<td>4.22</td>
<td>4</td>
<td>B</td>
<td>18</td>
</tr>
<tr>
<td>Deep abdominal breathing</td>
<td>High hypnotic susceptibility (9-12)</td>
<td>4.20**</td>
<td>4</td>
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<td>Activity</td>
<td>Control or Experimental Group</td>
<td>Hypnotic Response</td>
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<tr>
<td>Mild hypnoidal state ↑</td>
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<td>------------------------</td>
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</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Harvard score 2</td>
<td>2.96(^\text{2}^\text{2})</td>
<td>2</td>
<td>SP</td>
<td>3</td>
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<td>Hypnosis (Harvard Induction)</td>
<td>Hypnotic Type I 'Classic lows' (1.91)(^\text{1}^\text{1})</td>
<td>2.88</td>
<td>2</td>
<td>SN</td>
<td>11</td>
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<tr>
<td>Harvard Induction (see author’s note)***</td>
<td>Low hypnotic susceptibility (0–4)(^\text{1}^\text{4}) – high dissociativity</td>
<td>2.54</td>
<td>2</td>
<td>SP</td>
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</tr>
<tr>
<td>Eyes closed sitting quietly</td>
<td>Whole group with epilepsy</td>
<td>2.29(^\text{1}^\text{5})</td>
<td>1</td>
<td>PEp</td>
<td>40</td>
</tr>
<tr>
<td>Harvard Induction (see author’s note)***</td>
<td>Low hypnotic susceptibility (0–4)(^\text{1}^\text{6}) – medium dissociativity</td>
<td>2.18</td>
<td>1</td>
<td>SP</td>
<td>5</td>
</tr>
<tr>
<td>Harvard Induction (see author’s note)***</td>
<td>Low hypnotic susceptibility (0–4)(^\text{1}^\text{7})</td>
<td>2.06</td>
<td>1</td>
<td>SP</td>
<td>104</td>
</tr>
<tr>
<td>Harvard Induction (see author’s note)***</td>
<td>Low hypnotic susceptibility (0–4)(^\text{1}^\text{8}) – low dissociativity</td>
<td>1.78</td>
<td>1</td>
<td>SP</td>
<td>40</td>
</tr>
</tbody>
</table>

| Non-hypnoidal state ↑ |

**Notes**

* = calculated from PCI intensity tables
† = calculated from mean sub-group pHGS and number of participants
‡‡ = calculated using measurements of graph in publication
\(^\text{1}^\text{9}\) = Harvard Group Scale of Hypnotic Susceptibility Scores
\(^\text{2}^\text{0}\) = Used in Pekala and Ersek (1992/92) in comparison to fire-walking
\(^\text{1}^\text{1}\) = Table in Pekala (1991: 321) is based on the sample in Pekala and Kumar, 1984 but uses the regression coefficients obtained from Pekala and Kumar (1987) to compute pHGS scores
\(^\text{2}^\text{2}\) = Sten scores were calculated from z scores produced from the normally distributed 138 condition/group means remaining after duplication was removed (SD = 1.22).

*** = Study with lower hypnoidal state than other large hypnosis studies and in which depth may have been affected either by the sample, or whether induction was successful.

**Participants**

B = Employees from a charity-business context (wide range of job roles)
NS = Nursing students
M = Mediums
P = Patients (unspecified)
PEa = Patients with eating disorders
PEp = Patients with epilepsy
PSb = Patients from two substance abuse residential treatment programmes/rehabilitation treatment programmes
RM = Regular meditators
S = Undergraduate students (unspecified)
SP = Undergraduate students (psychology)
U = Unspecified
UV = Unpaid volunteers recruited by word of mouth (wide range of educational backgrounds and ethnicity)
Appendix C – The PCI questionnaire items as a function of PCI major and minor dimensions (from Pekala, 1991)

The PCI questionnaire uses a 7-point Likert scale (0–6), structured as follows:

<table>
<thead>
<tr>
<th>My state of consciousness was not any different or unusual from what it ordinarily is.</th>
<th>0 1 2 3 4 5 6</th>
<th>I felt in an extremely different and unusual state of consciousness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt in an extremely different and unusual state of consciousness.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PCI questionnaire items as a function of all of the 12 major and 14 minor dimensions can be found below.

<table>
<thead>
<tr>
<th>Left dipole</th>
<th>Right dipole</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Altered state</strong></td>
<td></td>
</tr>
<tr>
<td>21. My state of consciousness was not any different or unusual from what it ordinarily is.</td>
<td>I felt in an extremely different and unusual state of consciousness.</td>
</tr>
<tr>
<td>40. My state of awareness was very different from what I usually experience.</td>
<td>My state of awareness was no different than usual.</td>
</tr>
<tr>
<td>53. My state of awareness was not unusual or different from what it ordinarily is.</td>
<td>I felt in an extraordinarily unusual and non-ordinary state of awareness.</td>
</tr>
<tr>
<td><strong>Altered experience</strong></td>
<td></td>
</tr>
<tr>
<td>11. My body ended at the boundary between my skin and the world.</td>
<td>I felt my body greatly expanded beyond the boundaries of my skin.</td>
</tr>
<tr>
<td>26. My bodily feelings seemed to expand into the world around me.</td>
<td>My bodily feelings were confined to the area within my skin.</td>
</tr>
<tr>
<td>51. I continually maintained a very strong sense of separation between myself and the environment.</td>
<td>I experienced intense unity with the world; the boundaries between me and the environment dissolved away.</td>
</tr>
<tr>
<td><strong>Meaning</strong></td>
<td></td>
</tr>
<tr>
<td>4. I had an experience which I would label as very religious, spiritual, or transcendental.</td>
<td>I did not have any experience which I would label as religious, spiritual, or transcendental.</td>
</tr>
<tr>
<td>23. I had an experience of awe and reverence toward the world.</td>
<td>I had no experience of awe and reverence toward the world.</td>
</tr>
<tr>
<td>32. I experienced no profound insights besides my usual cognitive understanding of things.</td>
<td>I experienced very profound and enlightening insights of certain ideas or issues.</td>
</tr>
<tr>
<td>47. I experienced no sense of sacredness or deep meaning in existence beyond my usual feelings.</td>
<td>Existence became deeply sacred or meaningful.</td>
</tr>
<tr>
<td><strong>Perception</strong></td>
<td></td>
</tr>
<tr>
<td>17. My perception of the world changed drastically.</td>
<td>I noticed no changes in my perception of the world.</td>
</tr>
</tbody>
</table>
29. The world around me became extremely different in color or form.
39. I noticed no changes in the size, shape, or perspective of the objects in the world around me.

**Time sense**
15. My perception of the flow of time changed drastically.
30. Time seemed to greatly speed up or slow down.
43. I felt no sense of timelessness; time flowed as I usually experienced it.

I noticed no changes in my perception of the flow of time.
Time was experienced with no changes in its rate of passage.
Time stood still; there was no movement of time at all.

**Arousal**
19. The muscles of my body felt very tense and tight.
37. I felt no feelings of tension or tightness at all.

The muscles of my body felt very loose and relaxed.
I felt tense and tight.

**Attention**
**Absorption**
1. I was forever distracted and unable to concentrate on anything.
34. I was not distracted, but was able to be completely absorbed in what I was experiencing.

I was able to concentrate quite well and was not distracted.
I was continually distracted by extraneous impressions or events.

**Direction**
8. My attention was completely directed toward my own internal subjective experience.
28. My attention was totally directed toward the environment around me.
52. My attention was completely inner-directed.

My attention was completely directed toward the world around me.
My attention was totally directed toward my own internal, subjective experience.
My attention was completely outer-directed.

**Internal dialogue**
6. I was silently talking to myself a great deal.
45. I did not engage in any silent talking to myself.

I did not engage in any silent talking to myself.
I was silently talking to myself a great deal.

**Imagery**
**Amount**
12. I experienced a great deal of visual imagery.
44. I experienced no or very few images.

I experienced no visual imagery at all.
My experience was made up almost completely of images.
Vividness
18. My visual imagery was so vivid and three-dimensional, it seemed real.
48. My imagery was very vague and dim.

Memory
10. I cannot remember what I experienced.
22. I can recall nothing that happened to me.
38. My memory of the events I experienced is extremely clear and vivid.
40. I can recall everything that happened to me.
3. My memory of the events I experienced is extremely blurred and hazy.

Negative affect

Anger
33. I felt very angry and upset.

Fear
16. I felt very frightened.
42. I felt no feelings of being scared or afraid.

Sadness
7. I felt very, very sad.
31. I felt no feelings of unhappiness or dejection.

Positive affect

Joy
9. I felt ecstatic and joyful.
46. I experienced no feelings of ecstasy or extreme happiness beyond my usual feelings.

Love
20. I experienced no feelings of love.
49. I felt intense feelings of loving-kindness.

Sexual excitement
5. I became aware of very intense sexual feelings.
35. I was not aware of any sexual feelings.

Rationality
2. My thinking was clear and understandable.
24. Conceptually, my thinking was clear and distinct.

My visual imagery was so vague and diffuse, it was hard to get an image of anything.
My imagery was as clear and vivid as objects in the real world.
36. My thought processes were non-rational and very hard to comprehend.
My thought processes were rational and easy to comprehend.

**Self-awareness**

13. I was not aware of being aware of myself at all; I had no self-awareness.
27. I was continually conscious and well aware of myself.
50. I maintained a very strong sense of self-awareness the whole time.

I was very aware of being aware of myself; my self-awareness was intense.
I lost consciousness of myself.
I did not maintain a very strong sense of self-awareness at all.

**Volitional control**

3. The thoughts and images I had were under my control; I decided what I thought or imagined.
25. I had complete control over what I was paying attention to.
41. I relinquished control and became receptive and passive to what I was experiencing.

Images and thoughts popped into my mind without my control.
I had no control over what I was paying attention to.
I was willfully controlling what I was experiencing.
# Appendix D – Original PCI-Hypnotic Assessment Protocol items and the adaptations applied in the present research

## Pre-condition items

<table>
<thead>
<tr>
<th>PCI-HAP item and definition</th>
<th>Original text</th>
<th>Renaming of item for Main Study B and definition</th>
<th>Adapted item text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Hypnosis Expectancy (pre-ES)</td>
<td>Expectancy question 1 (see below for expectancy question 2)</td>
<td>Pre-Speech Expectancy (pre-ES)</td>
<td>Expectancy question 1 (see below for expectancy question 2)</td>
</tr>
<tr>
<td><strong>Estimates the client’s expectancy. This is the average of the two expectancy scores: the pre-hypnosis estimated hypnotic depth score and the pre-hypnosis therapeutic expectancy score.</strong></td>
<td>I would like to know how deeply hypnotized you expect to be when we try to hypnotize you today. Let ‘1’ = ‘not hypnotized at all’, and let ‘10’ = ‘the most hypnotized that you can imagine’.</td>
<td>Estimates the participant’s expectancy. This is the average of the two expectancy scores: the pre-speech depth score and the pre-speech affected score.</td>
<td><strong>On a scale of 1–10, how deeply affected emotionally/ influenced do you expect to be by Martin Luther King’s speech?</strong> Let ‘1’ = ‘not affected at all’, and let ‘10’ = ‘the most affected that you can imagine’.</td>
</tr>
<tr>
<td>Pre-Hypnosis Visual Imagery Vividness</td>
<td>Now I would like for you to estimate how vivid your visual and your bodily or kinesthetic imagery is. Imagery usually consists of the internal visual pictures or kinesthetic and bodily impressions which pass before your mind, no matter how vague or dim they may be. Whereas visual imagery is usually made up of visual images and pictures, bodily or kinesthetic imagery usually consists of imaginary sensations, such as imaginary warmth, coldness, tension, touch, etc. as you would imagine such sensations within your body. Visual and bodily or kinesthetic imagery originate within you instead of coming from the environment. Please close your eyes, imagine yourself relaxing in a hot bath tub.</td>
<td>Pre-Speech Visual Imagery Vividness</td>
<td>Estimates a participant’s ability to generate visual imagery pre-speech.</td>
</tr>
</tbody>
</table>
On a ‘1’ to ‘10’ scale, how vivid is your visual imagery of imagining yourself in the hot tub; how clearly and distinctly can you see or visualize yourself relaxing in the hot tub? Let ‘1’ = ‘just a thought, no image at all’; and let ‘10’ = ‘so real and vivid that you can actually see yourself in the hot tub’.

### Pre-Hypnosis

**Kinesthetic Imagery Vividness**

Estimates a client’s ability to generate kinaesthetic imagery pre-hypnosis.

**Expectancy question 2 (see above for expectancy question 1)**

- **Finally, how helpful do you think self-hypnosis training is going to be to help you with your problems, issues, or concerns?**
- Please rate on a ‘1’ to ‘10’ intensity scale, how helpful you feel self-hypnosis training is going to be. Let ‘1’ equal ‘not at all helpful’, and let ‘10’ equal ‘extremely helpful’.

### Pre-Speech

**Kinesthetic Imagery Vividness**

Estimates a participant’s ability to generate kinaesthetic imagery pre-speech.

**Expectancy question 2 (see above for expectancy question 1)**

- **Finally, how influential do you think the speech is going to be in leading you to empathise with the problems, issues, or concerns that will be raised?**
- Please rate on a ‘1’ to ‘10’ intensity scale how influential you feel the speech is going to be. Let ‘1’ equal ‘not at all influential’ and let ‘10’ equal ‘extremely influential’.

Text not adapted
### Post-condition questions

<table>
<thead>
<tr>
<th>PCI-HAP item</th>
<th>Original text</th>
<th>Naming of item for Main Study B</th>
<th>Adapted item text</th>
</tr>
</thead>
</table>
| **Post-Hypnosis Self-Reported Hypnotic Depth Score (srHDS)** | On a ‘1’ to ‘10’ scale, how deeply hypnotised do you feel that you became?  
Let ‘1’ = not hypnotized at all, and let ‘10’ = the most hypnotized that you can imagine. | **Self-Reported Depth of Influence (srDI)**                                                                 | On a scale of 1–10 how deeply affected emotionally/influenced have you been by Martin Luther King’s speech?  
Let ‘1’ = ‘not affected at all’, and let ‘10’ = ‘the most affected that you can imagine’.

| **Imagoic Suggestibility Score (ISS)**       | During the hypnosis, you were asked to go on vacation and have a wonderful time on a beautiful day.  
Please rate on a ‘1’ to ‘10’ scale how vivid your vacation was. Let ‘1’ = just a thought, no image at all; and let ‘10’ = as real and vivid as actually being there. What number between ‘1’ and ‘10’ best represents how vivid your imagery was? | **Imagoic Suggestibility Score (ISS)**                                                                 | During the speech Martin Luther King made use of many visual images and metaphorical ideas. Please rate on a ‘1’ to ‘10’ scale how vivid you own internal imagery was during the speech. Please answer in relation to the most memorable and significant experience, rather than in relation to the speech as a whole.  
Let ‘1’ = ‘I just had thoughts, I experienced no internal imagery at all’; and let ‘10’ = ‘as real and vivid as actually experiencing the image’. What number between ‘1’ and ‘10’ best represents how vivid your imagery was? |


Appendix E – The 2003 American Psychological Association Division 30 definition of hypnosis

Hypnosis typically involves an introduction to the procedure during which the subject is told that suggestions for imaginative experiences will be presented. The hypnotic induction is an extended initial suggestion for using one's imagination, and may contain further elaborations of the introduction. A hypnotic procedure is used to encourage and evaluate responses to suggestions. When using hypnosis, one person (the subject) is guided by another (the hypnotist) to respond to suggestions for changes in subjective experience, alterations in perception, sensation, emotion, thought, or behavior. Persons can also learn self-hypnosis, which is the act of administering hypnotic procedures on one's own. If the subject responds to hypnotic suggestions, it is generally inferred that hypnosis has been induced. Many believe that hypnotic responses and experiences are characteristic of a hypnotic state. While some think that it is not necessary to use the word hypnosis as part of the hypnotic induction, others view it as essential (Green et al., 2005: 262).

Details of hypnotic procedures and suggestions will differ depending on the goals of the practitioner and the purposes of the clinical or research endeavor. Procedures traditionally involve suggestions to relax, though relaxation is not necessary for hypnosis and a wide variety of suggestions can be used including those to become more alert. Suggestions that permit the extent of hypnosis to be assessed by comparing responses to standardized scales can be used in both clinical and research settings. While the majority of individuals are responsive to at least some suggestions, scores on standardized scales range from high to negligible. Traditionally, Details of hypnotic procedures and suggestions will differ depending on the goals of the practitioner and the purposes of the clinical or research endeavor. Procedures traditionally involve suggestions to relax, though relaxation is not necessary for hypnosis and a wide variety of suggestions can be used including those to become more alert. Suggestions that permit the extent of hypnosis to be assessed by comparing responses to standardized scales can be used in both clinical and research settings. While the majority of individuals are responsive to at least some suggestions, scores on standardized scales range from high to negligible. Traditionally, scores are grouped into low, medium, and high categories. As is the case with other positively scaled measures of psychological constructs such as attention and awareness, the salience of evidence for having achieved hypnosis increases with the individual’s score. (Green et al, 2005: 263).
Appendix F – Internal reliability (Cronbach’s alpha) of the PCI from Pekala (1991: 133) and in the four Main Studies (n = 121)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Pekala (1991: 133)</th>
<th>Main Study C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eyes open sitting quietly</td>
<td>Eyes closed sitting quietly</td>
</tr>
<tr>
<td>Rationality</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>Positive affect</td>
<td>.88</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>Joy</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>Sexual excitement</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Love</td>
<td>.88</td>
</tr>
<tr>
<td>Arousal</td>
<td>.79</td>
<td>.80</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>.77</td>
<td>.65</td>
</tr>
<tr>
<td>Memory</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>.80</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Direction of attention</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>Absorption</td>
<td>.79</td>
</tr>
<tr>
<td>Negative affect</td>
<td>.87</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>Anger</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td>Sadness</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>Fear</td>
<td>.90</td>
</tr>
<tr>
<td>Altered experience</td>
<td>.82</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Altered body image</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Altered time sense</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>Altered perception</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Altered meaning</td>
<td>.70</td>
</tr>
<tr>
<td>Volitional control</td>
<td>.71</td>
<td>.65</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>.91</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Amount of imagery</td>
<td>.90</td>
</tr>
<tr>
<td></td>
<td>Vividness of imagery</td>
<td>.82</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>.86</td>
<td>.85</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>.77</td>
<td>.65</td>
</tr>
<tr>
<td>Average for major (and minor) dimensions</td>
<td>.82 ( .82)</td>
<td>.76 ( .73)</td>
</tr>
<tr>
<td>n</td>
<td>110</td>
<td>233</td>
</tr>
</tbody>
</table>
Appendix G – Email sent to participants to invite them to take part in the research

Invitation to participate in Doctoral Research

Dear Colleagues

As you know, I am a Principal Consultant at CfBT Education Trust. I am currently carrying out doctoral research at the University of Surrey, School of Management. Prior to sending you this email, 50% of company email addresses were randomly sampled and you are receiving this email because you were in that sample.

I am writing to ask if you would like to help by being a participant in my study. My research is in the areas of charismatic leadership, language and their effects on consciousness. Specifically, I am interested in the frequently hypothesised relationship between charismatic leadership and hypnosis. Although the research aims to move understanding forward in relation to a gap in the literature in this area, you will not be required to experience hypnosis as part of the research design. My study represents a first research step in this area and aims to establish if there is any effect on patterns of consciousness during a world-class charismatic leadership speech that can be said to be similar to those effects that are known to take place during hypnosis. This will be a theoretical comparison only based on published peer reviewed journal articles and publications that contain data on patterns of consciousness during hypnosis.

In experimental research designs like the one you will participate in (if you agree to become a participant) we talk about operationalising effects. This simply means being able to create quantitative (numerical) data which will allow the comparison of effects on people, or their experience, in different situations. This will be done through the use of a post-experience inventory (questionnaire) that you will need to complete immediately after some experiences. There are also two short debrief forms, two activities and a pre-assessment before one of the experiences.

The questionnaire is called the Phenomenology of Consciousness Inventory (PCI). It will assess your subjective experience and what you were aware of during the previous 2–4 minutes. PCI has thirty years of robust academic research to support it and there are over 50 peer-reviewed academic journal articles. On previous occasions it has been used to measure effects following experiences such as: sitting quietly with eyes open or closed, hypnosis, progressive relaxation, meditation, breathing techniques, drumming, trance postures, shamanic states, an out of body experience within a near-death experience and fire-walking. Several thousand people have now completed the questionnaire and there have not been any negative side effects reported as a result of completing the questionnaire itself – it is as safe to complete as any form or questionnaire.

You will be asked questions about feelings that you experienced during the research including some short ‘Likert’ scale (number line multiple choice questions) relating to: joy, sexual excitement, love, anger, sadness and fear. You will also be asked if you have ever experienced hypnosis for therapy, personal development or as a participant in stage hypnosis. You will not however be asked to disclose any details of therapy which you may have received. If you do not want to be asked these questions you should not consent to participate in the research.

If you are willing to participate, simply reply to this email saying so; if you do not reply you will not be contacted again in relation to this research. You will be given a separate consent form to sign if you agree to take part and can withdraw from the study at any time. The research sessions will take place during work hours and permission has been obtained for employees to take part from the company’s senior management team.
Appendix H – Additional participant data (gender, job role and ethnicity) for the four Main Studies (n = 121)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total</th>
<th>%</th>
<th>Mean age</th>
<th>Standard deviation</th>
<th>Range Minimum</th>
<th>Range Maximum</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>38</td>
<td>31.41</td>
<td>44.9</td>
<td>11.9</td>
<td>25</td>
<td>68</td>
<td>-.101</td>
</tr>
<tr>
<td>Females</td>
<td>83</td>
<td>68.60</td>
<td>43.5</td>
<td>11.6</td>
<td>22</td>
<td>74</td>
<td>-.026</td>
</tr>
<tr>
<td>All</td>
<td>121</td>
<td>43.9</td>
<td>11.7</td>
<td>22</td>
<td>74</td>
<td>.046</td>
<td></td>
</tr>
</tbody>
</table>

Job role

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Nature of role*</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td>Males</td>
<td>1</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>3</td>
<td>3.61</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>4</td>
<td>3.31</td>
</tr>
<tr>
<td>Senior manager</td>
<td>Males</td>
<td>2</td>
<td>5.26</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>2</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>4</td>
<td>3.31</td>
</tr>
<tr>
<td>Consultant</td>
<td>Males</td>
<td>8</td>
<td>21.1</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>11</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>19</td>
<td>15.7</td>
</tr>
<tr>
<td>Manager</td>
<td>Males</td>
<td>7</td>
<td>18.4</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>22</td>
<td>26.5</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Teacher</td>
<td>Males</td>
<td>5</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>14</td>
<td>16.9</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>19</td>
<td>15.7</td>
</tr>
<tr>
<td>Other professional</td>
<td>Males</td>
<td>2</td>
<td>5.26</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>1</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>3</td>
<td>2.48</td>
</tr>
<tr>
<td>Human resources manager</td>
<td>Males</td>
<td>1</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>4</td>
<td>4.82</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>5</td>
<td>4.13</td>
</tr>
<tr>
<td>Project manager</td>
<td>Males</td>
<td>3</td>
<td>7.89</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>12</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>15</td>
<td>12.4</td>
</tr>
<tr>
<td>Finance officer</td>
<td>Males</td>
<td>2</td>
<td>5.26</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>6</td>
<td>7.23</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>8</td>
<td>6.61</td>
</tr>
<tr>
<td>IT worker</td>
<td>Males</td>
<td>2</td>
<td>5.26</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>1</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>3</td>
<td>2.48</td>
</tr>
<tr>
<td>Administrative assistant</td>
<td>Males</td>
<td>5</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>7</td>
<td>8.43</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>12</td>
<td>9.92</td>
</tr>
</tbody>
</table>

* 1 = mainly client-facing; 2 = mainly back office
<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>White British</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>32</td>
<td>84.2</td>
</tr>
<tr>
<td>Females</td>
<td>70</td>
<td>84.3</td>
</tr>
<tr>
<td>All</td>
<td>102</td>
<td>84.3</td>
</tr>
<tr>
<td>White Irish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>1</td>
<td>2.63</td>
</tr>
<tr>
<td>Females</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All</td>
<td>4</td>
<td>3.31</td>
</tr>
<tr>
<td>Black/Black British-Caribbean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>1</td>
<td>2.63</td>
</tr>
<tr>
<td>Females</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All</td>
<td>1</td>
<td>.83</td>
</tr>
<tr>
<td>Asian/Asian British-Indian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>1</td>
<td>2.63</td>
</tr>
<tr>
<td>Females</td>
<td>1</td>
<td>1.20</td>
</tr>
<tr>
<td>All</td>
<td>2</td>
<td>1.65</td>
</tr>
<tr>
<td>Other Asian background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>4</td>
<td>10.5</td>
</tr>
<tr>
<td>Females</td>
<td>7</td>
<td>8.43</td>
</tr>
<tr>
<td>All</td>
<td>11</td>
<td>9.09</td>
</tr>
<tr>
<td>Mixed White and Asian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Females</td>
<td>1</td>
<td>1.20</td>
</tr>
<tr>
<td>All</td>
<td>1</td>
<td>.83</td>
</tr>
</tbody>
</table>
Appendix I – Structure of the PCI (Form A) Excel scoring spreadsheet (screenshot from Pekala, 2009)

<table>
<thead>
<tr>
<th>Instructions</th>
<th>Item</th>
<th>Score</th>
<th>Intensity</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>All instructions will be computer scored automatically</td>
<td>1</td>
<td>6.00</td>
<td>Social Excitement</td>
<td></td>
</tr>
<tr>
<td>The participant will be asked to circle the numbers that correspond with the items they have rated previously with the current PCI</td>
<td>2</td>
<td>4.00</td>
<td>Alertness</td>
<td></td>
</tr>
<tr>
<td>The participant will be asked to circle the numbers that correspond with the items they have rated previously with the current PCI</td>
<td>3</td>
<td>3.00</td>
<td>Attention</td>
<td></td>
</tr>
<tr>
<td>The participant will be asked to circle the numbers that correspond with the items they have rated previously with the current PCI</td>
<td>4</td>
<td>2.00</td>
<td>Memory</td>
<td></td>
</tr>
<tr>
<td>The participant will be asked to circle the numbers that correspond with the items they have rated previously with the current PCI</td>
<td>5</td>
<td>1.00</td>
<td>Imagination</td>
<td></td>
</tr>
</tbody>
</table>

The spreadsheet automatically calculates intensity levels for the 12 major and 14 minor dimensions and then reports them here.

A Reliability Index Score is calculated for the individual participant questionnaire results from 5 questionnaire items.

The 53 raw scores from a participant’s PCI questionnaire form are entered here.

Trance Typology Profile, used for client diagnostic purposes when the EXCEL scoring spreadsheet is used in clinical hypnosis interventions (not used in the current research).

Hypnoidal State Score is automatically reported by the spreadsheet using the PCI regression equation.
Appendix J – Means scores for the 12 major and 14 minor dimensions for each of the three conditions in the Pilot Analytical Study (n = 24)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Eyes open sitting quietly Mean</th>
<th>Archive film Mean</th>
<th>Charismatic leadership speech Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Rationality</td>
<td>4.79</td>
<td>1.06</td>
<td>5.11</td>
</tr>
<tr>
<td>Positive affect</td>
<td>0.69</td>
<td>0.76</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>Joy</td>
<td>0.63</td>
<td>1.14</td>
</tr>
<tr>
<td></td>
<td>Sexual excitement</td>
<td>0.23</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Love</td>
<td>2.21</td>
<td>1.63</td>
</tr>
<tr>
<td>Arousal</td>
<td>1.58</td>
<td>1.38</td>
<td>1.31</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>4.49</td>
<td>1.01</td>
<td>4.20</td>
</tr>
<tr>
<td>Memory</td>
<td>5.02</td>
<td>1.05</td>
<td>4.74</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>3.11</td>
<td>1.03</td>
<td>3.58</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>2.77</td>
<td>1.29</td>
<td>2.65</td>
</tr>
<tr>
<td>Absorption</td>
<td>3.63</td>
<td>1.43</td>
<td>4.92</td>
</tr>
<tr>
<td>Negative affect</td>
<td>0.46</td>
<td>0.57</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>Anger</td>
<td>0.32</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>Sadness</td>
<td>0.81</td>
<td>1.46</td>
</tr>
<tr>
<td></td>
<td>Fear</td>
<td>0.23</td>
<td>0.88</td>
</tr>
<tr>
<td>Altered experience</td>
<td>1.11</td>
<td>0.82</td>
<td>1.64</td>
</tr>
<tr>
<td>Altered body image</td>
<td>1.59</td>
<td>1.21</td>
<td>2.14</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>1.47</td>
<td>1.67</td>
<td>1.81</td>
</tr>
<tr>
<td>Altered perception</td>
<td>0.60</td>
<td>0.73</td>
<td>1.00</td>
</tr>
<tr>
<td>Altered meaning</td>
<td>0.84</td>
<td>1.20</td>
<td>1.98</td>
</tr>
<tr>
<td>Volitional control</td>
<td>4.09</td>
<td>1.12</td>
<td>3.97</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>2.88</td>
<td>1.47</td>
<td>3.09</td>
</tr>
<tr>
<td></td>
<td>Amount of imagery</td>
<td>2.67</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>Vividness of imagery</td>
<td>3.08</td>
<td>1.59</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>3.35</td>
<td>2.13</td>
<td>2.60</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>1.13</td>
<td>1.35</td>
<td>1.15</td>
</tr>
</tbody>
</table>
Appendix K – Changes in phenomenological intensity for the 12 major and 14 minor dimensions in the Pilot Analytical Study (n = 24)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Eyes open sitting quietly versus charismatic leadership oratory</th>
<th>Archive film versus charismatic leadership oratory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z</td>
<td>p (two-tailed)</td>
</tr>
<tr>
<td>Rationality</td>
<td>0.04</td>
<td>.968</td>
</tr>
<tr>
<td>Positive affect</td>
<td>2.07</td>
<td>.038</td>
</tr>
<tr>
<td>Joy</td>
<td>2.38</td>
<td>.017</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>0.68</td>
<td>.498</td>
</tr>
<tr>
<td>Love</td>
<td>1.13</td>
<td>.261</td>
</tr>
<tr>
<td>Arousal</td>
<td>2.99</td>
<td>.003</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>1.30</td>
<td>.195</td>
</tr>
<tr>
<td>Memory</td>
<td>1.25</td>
<td>.211</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>1.14</td>
<td>.253</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>0.42</td>
<td>.673</td>
</tr>
<tr>
<td>Absorption</td>
<td>2.08</td>
<td>.038</td>
</tr>
<tr>
<td>Negative affect</td>
<td>2.77</td>
<td>.006</td>
</tr>
<tr>
<td>Anger</td>
<td>2.98</td>
<td>.003</td>
</tr>
<tr>
<td>Sadness</td>
<td>2.37</td>
<td>.018</td>
</tr>
<tr>
<td>Fear</td>
<td>0.89</td>
<td>.495</td>
</tr>
<tr>
<td>Altered experience</td>
<td>3.31</td>
<td>.001</td>
</tr>
<tr>
<td>Altered body image</td>
<td>1.30</td>
<td>.193</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>0.68</td>
<td>.495</td>
</tr>
<tr>
<td>Altered perception</td>
<td>1.24</td>
<td>.214</td>
</tr>
<tr>
<td>Altered meaning</td>
<td>3.20</td>
<td>.001</td>
</tr>
<tr>
<td>Volitional control</td>
<td>0.91</td>
<td>.361</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>0.75</td>
<td>.454</td>
</tr>
<tr>
<td>Amount of imagery</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Vividness of imagery</td>
<td>1.22</td>
<td>.224</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>1.66</td>
<td>.097</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>1.79</td>
<td>.073</td>
</tr>
</tbody>
</table>
Appendix L – Number of participants in each condition order following removal of participants with contrary patterns of response [Main Studies] (n = 121)

<table>
<thead>
<tr>
<th>Condition order</th>
<th>Order</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eyes open sitting quietly Archive film Charismatic speech</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Eyes open sitting quietly Charismatic speech Archive film</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Archive film Eyes open sitting quietly Charismatic speech</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>Archive film Charismatic speech Eyes open sitting quietly</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>Charismatic speech Eyes open sitting quietly Archive film</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>Charismatic speech Archive film Eyes open sitting quietly</td>
<td>20</td>
</tr>
</tbody>
</table>
Appendix M – Additional data pertaining to preliminary assumption testing and initial assessment of order effects in Main Study A (n = 121)

Results of the Kolmogorov-Smirnov Test for the hypnoidal state scores during the three conditions in the present study

<table>
<thead>
<tr>
<th>Condition</th>
<th>Statistic*</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>.064</td>
<td>121</td>
<td>.200</td>
</tr>
<tr>
<td>Archive film</td>
<td>.057</td>
<td>121</td>
<td>.200</td>
</tr>
<tr>
<td>Charismatic speech</td>
<td>.058</td>
<td>121</td>
<td>.200</td>
</tr>
</tbody>
</table>

*Lillefors significance correction

Analysis of variance for the three conditions in the present study with condition order as a between-subject factor

<table>
<thead>
<tr>
<th>Condition</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes open sitting quietly</td>
<td>0.54</td>
<td>(5, 115)</td>
<td>.749</td>
</tr>
<tr>
<td>Archive film</td>
<td>1.10</td>
<td>(5, 115)</td>
<td>.364</td>
</tr>
<tr>
<td>Charismatic oratory</td>
<td>1.14</td>
<td>(5, 115)</td>
<td>.345</td>
</tr>
</tbody>
</table>
Appendix N – Initial analysis of variance for PCI major dimension intensity levels, with condition order as a between-subject factor, illustrating that counterbalancing in the research had been effective in relation to each of the conditions (df = 5, 115) [Main Study C] (n = 121)

<table>
<thead>
<tr>
<th>Major dimensions</th>
<th>Eyes open sitting quietly</th>
<th>Archive film</th>
<th>Charismatic leadership oratory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>p (two-tailed)</td>
<td>F</td>
</tr>
<tr>
<td>Rationality</td>
<td>1.38</td>
<td>.262</td>
<td>0.70</td>
</tr>
<tr>
<td>Positive affect</td>
<td>0.44</td>
<td>.823</td>
<td>1.84</td>
</tr>
<tr>
<td>Arousal</td>
<td>2.46</td>
<td>.037</td>
<td>2.92</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>1.57</td>
<td>.174</td>
<td>1.18</td>
</tr>
<tr>
<td>Memory</td>
<td>0.54</td>
<td>.742</td>
<td>0.40</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>1.80</td>
<td>.118</td>
<td>0.41</td>
</tr>
<tr>
<td>Negative affect</td>
<td>1.92</td>
<td>.097</td>
<td>2.14</td>
</tr>
<tr>
<td>Altered experience</td>
<td>0.092</td>
<td>.993</td>
<td>0.99</td>
</tr>
<tr>
<td>Volitional control</td>
<td>0.57</td>
<td>.725</td>
<td>0.71</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>0.39</td>
<td>.851</td>
<td>0.72</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>1.29</td>
<td>.272</td>
<td>0.42</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>0.96</td>
<td>.446</td>
<td>1.95</td>
</tr>
</tbody>
</table>
Appendix O – Data from additional analyses (Penn State Science, 2015) to further assess the design’s ability to deal with carryover effects in respect of PCI major and minor dimension intensity results [Main Study C] (n = 121)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>w</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>4.23</td>
<td>2</td>
<td>.12</td>
<td>0.19</td>
</tr>
<tr>
<td>Positive affect</td>
<td>1.96</td>
<td>2</td>
<td>.38</td>
<td>0.19</td>
</tr>
<tr>
<td>Joy</td>
<td>2.63</td>
<td>2</td>
<td>.29</td>
<td>0.13</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>5.24</td>
<td>2</td>
<td>.073</td>
<td>0.15</td>
</tr>
<tr>
<td>Love</td>
<td>5.01</td>
<td>2</td>
<td>.082</td>
<td>0.21</td>
</tr>
<tr>
<td>Arousal</td>
<td>2.65</td>
<td>2</td>
<td>.27</td>
<td>0.20</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>4.99</td>
<td>2</td>
<td>.082</td>
<td>0.15</td>
</tr>
<tr>
<td>Memory</td>
<td>4.8</td>
<td>2</td>
<td>.091</td>
<td>0.20</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>0.83</td>
<td>2</td>
<td>.66</td>
<td>0.20</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>4.73</td>
<td>2</td>
<td>.094</td>
<td>0.077</td>
</tr>
<tr>
<td>Absorption</td>
<td>4.64</td>
<td>2</td>
<td>.098</td>
<td>0.20</td>
</tr>
<tr>
<td>Negative affect</td>
<td>3.15</td>
<td>2</td>
<td>.21</td>
<td>0.20</td>
</tr>
<tr>
<td>Anger</td>
<td>4.93</td>
<td>2</td>
<td>.085</td>
<td>0.16</td>
</tr>
<tr>
<td>Sadness</td>
<td>4.28</td>
<td>2</td>
<td>.12</td>
<td>0.20</td>
</tr>
<tr>
<td>Fear</td>
<td>4.97</td>
<td>2</td>
<td>.083</td>
<td>0.19</td>
</tr>
<tr>
<td>Altered experience</td>
<td>4.32</td>
<td>2</td>
<td>.12</td>
<td>0.20</td>
</tr>
<tr>
<td>Altered body image</td>
<td>0.71</td>
<td>2</td>
<td>.70</td>
<td>0.19</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>1.93</td>
<td>2</td>
<td>.38</td>
<td>0.01</td>
</tr>
<tr>
<td>Altered perception</td>
<td>4.48</td>
<td>2</td>
<td>.11</td>
<td>0.13</td>
</tr>
<tr>
<td>Altered meaning</td>
<td>4.7</td>
<td>2</td>
<td>.095</td>
<td>0.19</td>
</tr>
<tr>
<td>Volitional control</td>
<td>1.45</td>
<td>2</td>
<td>.48</td>
<td>0.20</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>1.58</td>
<td>2</td>
<td>.45</td>
<td>0.11</td>
</tr>
<tr>
<td>Imagery, amount of</td>
<td>3.00</td>
<td>2</td>
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<td>0.11</td>
</tr>
<tr>
<td>Imagery, vividness</td>
<td>0.391</td>
<td>2</td>
<td>.82</td>
<td>0.16</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>3.49</td>
<td>2</td>
<td>.18</td>
<td>0.057</td>
</tr>
<tr>
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<td>0.08</td>
<td>2</td>
<td>.96</td>
<td>0.17</td>
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</table>
Appendix P – Violations of sphericity (Mauchly, 1940)  
[Main Study C] (n = 121)

Major dimension variables which violated the assumption of sphericity

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>16.8</td>
<td>2</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>4.47</td>
<td>2</td>
<td>.020</td>
</tr>
<tr>
<td>Memory</td>
<td>13.8</td>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>34.9</td>
<td>2</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Negative affect</td>
<td>6.69</td>
<td>2</td>
<td>.035</td>
</tr>
<tr>
<td>Volitional control</td>
<td>12.2</td>
<td>2</td>
<td>.002</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>10.81</td>
<td>2</td>
<td>.005</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>17.5</td>
<td>2</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>16.54</td>
<td>2</td>
<td>&lt; .0005</td>
</tr>
</tbody>
</table>

Minor dimension variables which violated the assumption of sphericity

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Love</td>
<td>7.30</td>
<td>2</td>
<td>.030</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>21.9</td>
<td>2</td>
<td>&lt; .0005</td>
</tr>
<tr>
<td>Anger</td>
<td>13.4</td>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>Altered body image</td>
<td>10.23</td>
<td>2</td>
<td>.006</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>7.24</td>
<td>2</td>
<td>.027</td>
</tr>
<tr>
<td>Altered perception</td>
<td>9.52</td>
<td>2</td>
<td>.009</td>
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<tr>
<td>Amount of imagery</td>
<td>6.73</td>
<td>2</td>
<td>.035</td>
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</table>
## Appendix Q – PCI major and minor intensity main effects across all three conditions [Main Study C] (n = 121)

<table>
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<tr>
<th>Major and minor dimensions</th>
<th>F</th>
<th>df</th>
<th>p (two-tailed)</th>
<th>$\eta_p^2$</th>
<th>Observed power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationality</td>
<td>6.06</td>
<td>(1.68, 213)</td>
<td>.004(04)</td>
<td>.048</td>
<td>.85</td>
</tr>
<tr>
<td>Positive affect</td>
<td>12.8</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.096</td>
<td>1.00</td>
</tr>
<tr>
<td>Joy</td>
<td>13.2</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.099</td>
<td>.999</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>0.97</td>
<td>(2, 240)</td>
<td>.382</td>
<td>.008</td>
<td>.008</td>
</tr>
<tr>
<td>Love</td>
<td>11.5</td>
<td>(1.89, 228)</td>
<td>&lt; .0005</td>
<td>.087</td>
<td>.087</td>
</tr>
<tr>
<td>Arousal</td>
<td>14.5</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.108</td>
<td>1.00</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>20.3</td>
<td>(1.88, 226)</td>
<td>&lt; .0005</td>
<td>.145</td>
<td>1.00</td>
</tr>
<tr>
<td>Memory</td>
<td>0.03</td>
<td>(1.80, 217)</td>
<td>.963</td>
<td>.0002</td>
<td>.054</td>
</tr>
<tr>
<td>Inward absorbed attention</td>
<td>11.9</td>
<td>(1.60, 192)</td>
<td>&lt; .0005</td>
<td>.90</td>
<td>.98</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>0.78</td>
<td>(1.71, 206)</td>
<td>.443</td>
<td>.006</td>
<td>.006</td>
</tr>
<tr>
<td>Absorption</td>
<td>30.0</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.20</td>
<td>.20</td>
</tr>
<tr>
<td>Negative affect</td>
<td>37.3</td>
<td>(1.90, 228)</td>
<td>&lt; .0005</td>
<td>.24</td>
<td>1.00</td>
</tr>
<tr>
<td>Anger</td>
<td>46.8</td>
<td>(1.80, 217)</td>
<td>&lt; .0005</td>
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<tr>
<td>Sadness</td>
<td>38.59</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.24</td>
<td>.24</td>
</tr>
<tr>
<td>Fear</td>
<td>4.56</td>
<td>(2, 240)</td>
<td>.011</td>
<td>.037</td>
<td>.037</td>
</tr>
<tr>
<td>Altered experience</td>
<td>28.5</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.19</td>
<td>1.00</td>
</tr>
<tr>
<td>Altered body image</td>
<td>7.54</td>
<td>(1.86, 222)</td>
<td>.001</td>
<td>.059</td>
<td>.059</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>4.38</td>
<td>(1.89, 227)</td>
<td>.015</td>
<td>.035</td>
<td>.035</td>
</tr>
<tr>
<td>Altered perception</td>
<td>10.28</td>
<td>(1.86, 223)</td>
<td>&lt; .0005</td>
<td>.079</td>
<td>.079</td>
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<tr>
<td>Altered meaning</td>
<td>59.2</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
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<td>.33</td>
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<td>Volitional control</td>
<td>4.99</td>
<td>(1.82, 219)</td>
<td>.010</td>
<td>.040</td>
<td>.78</td>
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<tr>
<td>Vivid imagery</td>
<td>2.90</td>
<td>(1.84, 221)</td>
<td>.062</td>
<td>.024</td>
<td>.54</td>
</tr>
<tr>
<td>Amount of imagery</td>
<td>59.2</td>
<td>(2, 240)</td>
<td>&lt; .0005</td>
<td>.019</td>
<td>.33</td>
</tr>
<tr>
<td>Vividness of imagery</td>
<td>1.98</td>
<td>(2, 240)</td>
<td>.141</td>
<td>.016</td>
<td>.016</td>
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<tr>
<td>Internal dialogue</td>
<td>22.8</td>
<td>(1.76, 211)</td>
<td>&lt; .0005</td>
<td>.16</td>
<td>1.00</td>
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<td>Altered state of awareness</td>
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<td>(1.77, 212)</td>
<td>&lt; .0005</td>
<td>.20</td>
<td>1.00</td>
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</tbody>
</table>

* Greenhouse-Geisser (Epsilon) estimate corrections
Appendix R – Pairwise comparisons for PCI major and minor dimensions for all three conditions [Main Study C] (n = 121)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Transformation*</th>
<th>Charismatic leadership speech versus eyes open</th>
<th>Charismatic leadership speech versus archive film</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>p (two-tailed) MD</td>
<td>SE</td>
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<tr>
<td>Rationality</td>
<td>$\sqrt{(k - x)}$</td>
<td>.059</td>
<td>.038</td>
</tr>
<tr>
<td>Positive affect</td>
<td>$\sqrt{x}$</td>
<td>.285*</td>
<td>.061</td>
</tr>
<tr>
<td>Joy</td>
<td>$\sqrt{x}$</td>
<td>.42</td>
<td>.085</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>$\sqrt{x}$</td>
<td>-.079</td>
<td>.065</td>
</tr>
<tr>
<td>Love</td>
<td>$\sqrt{x}$</td>
<td>.36</td>
<td>.087</td>
</tr>
<tr>
<td>Arousal</td>
<td>$\sqrt{x}$</td>
<td>.30</td>
<td>.071</td>
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<tr>
<td>Self-awareness</td>
<td>$\sqrt{(k - x)}$</td>
<td>-.18</td>
<td>.032</td>
</tr>
<tr>
<td>Memory</td>
<td>$\sqrt{(k - x)}$</td>
<td>.001</td>
<td>.033</td>
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<tr>
<td>Inward absorbed attention</td>
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<td>.51</td>
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<td>Direction of attention</td>
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<td>.038</td>
<td>.040</td>
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<tr>
<td>Absorption</td>
<td>$\sqrt{x}$</td>
<td>.24</td>
<td>.041</td>
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<tr>
<td>Negative affect</td>
<td>$\sqrt{x}$</td>
<td>1.03</td>
<td>.18</td>
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<tr>
<td>Anger</td>
<td>$\sqrt{x}$</td>
<td>.79</td>
<td>.079</td>
</tr>
<tr>
<td>Sadness</td>
<td>None</td>
<td>.76</td>
<td>.087</td>
</tr>
<tr>
<td>Fear</td>
<td>$\sqrt{x}$</td>
<td>.18</td>
<td>.067</td>
</tr>
<tr>
<td>Altered experience</td>
<td>$\sqrt{x}$</td>
<td>.74</td>
<td>.11</td>
</tr>
<tr>
<td>Altered body image</td>
<td>$\sqrt{x}$</td>
<td>.21</td>
<td>.063</td>
</tr>
<tr>
<td>Altered time sense</td>
<td>$\sqrt{x}$</td>
<td>-.023</td>
<td>.074</td>
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<tr>
<td>Altered perception</td>
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<td>.280*</td>
<td>.062</td>
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<tr>
<td>Altered meaning</td>
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<td>.705*</td>
<td>.072</td>
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<td>Volitional control</td>
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<td>.146</td>
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<td>.184</td>
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<tr>
<td>Vividness of imagery</td>
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<td>.285</td>
<td>.147</td>
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<tr>
<td>Internal dialogue</td>
<td>$\sqrt{(k - x)}$</td>
<td>1.190*</td>
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<td>Altered state of awareness</td>
<td>$\sqrt{(k - x)}$</td>
<td>.882*</td>
<td>.167</td>
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</tbody>
</table>

* Reflect and square root transformations were re-reflected before analysis.
Appendix S – Results from the parallel use of a non-parametric test on PCI major and minor dimensions in order to assess the effect of using transformations in the main analyses [Main Study C] (n = 121)

<table>
<thead>
<tr>
<th>Major and minor dimensions</th>
<th>Charismatic leadership speech versus eyes open sitting quietly</th>
<th>Charismatic leadership speech versus archive film</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z</td>
<td>N-Ties</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----</td>
<td>--------</td>
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<tr>
<td>Rationality</td>
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<tr>
<td>Positive affect</td>
<td>4.46</td>
<td>115</td>
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<tr>
<td>Joy</td>
<td>4.92</td>
<td>102</td>
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<tr>
<td>Sexual excitement</td>
<td>-0.75</td>
<td>39</td>
</tr>
<tr>
<td>Love</td>
<td>3.96</td>
<td>100</td>
</tr>
<tr>
<td>Arousal</td>
<td>3.79</td>
<td>98</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>-5.26</td>
<td>105</td>
</tr>
<tr>
<td>Memory</td>
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<td>101</td>
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<td>Inward absorbed attention</td>
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<td>Direction of attention</td>
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<tr>
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<td>112</td>
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<td>Negative affect</td>
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<td>114</td>
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<td>Anger</td>
<td>6.69</td>
<td>100</td>
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<tr>
<td>Sadness</td>
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<td>104</td>
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<td>Fear</td>
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<td>64</td>
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<tr>
<td>Altered experience</td>
<td>5.98</td>
<td>115</td>
</tr>
<tr>
<td>Altered body Image</td>
<td>3.33</td>
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</tr>
<tr>
<td>Altered time sense</td>
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<tr>
<td>Altered perception</td>
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<td>98</td>
</tr>
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<td>Altered meaning</td>
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<td>112</td>
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<tr>
<td>Volition control</td>
<td>-2.02</td>
<td>112</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>1.91</td>
<td>110</td>
</tr>
<tr>
<td>Imagery, amount of</td>
<td>1.65</td>
<td>106</td>
</tr>
<tr>
<td>Imagery, vividness of</td>
<td>1.87</td>
<td>102</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>4.94</td>
<td>103</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>4.61</td>
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</table>
Appendix T – Gender and job role comparisons for PCI major and minor dimensions [Main Study C] (n = 121)

<table>
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<tr>
<th>Major and minor dimensions</th>
<th>Males versus females</th>
<th>p (two-tailed)</th>
<th>Client-facing versus non-client-facing</th>
<th>df</th>
<th>p (two-tailed)</th>
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<tbody>
<tr>
<td>Rationality</td>
<td>0.48</td>
<td>.633</td>
<td>0.78</td>
<td>(119)</td>
<td>.440</td>
</tr>
<tr>
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<td>0.078</td>
<td>.938</td>
<td>-0.44</td>
<td>(119)</td>
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</tr>
<tr>
<td>Joy</td>
<td>-0.037</td>
<td>.971</td>
<td>0.078</td>
<td>(119)</td>
<td>.938</td>
</tr>
<tr>
<td>Sexual excitement</td>
<td>-0.24</td>
<td>.813</td>
<td>-1.39</td>
<td>(101)</td>
<td>.167</td>
</tr>
<tr>
<td>Love</td>
<td>1.10</td>
<td>.274</td>
<td>0.25</td>
<td>(119)</td>
<td>.804</td>
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<td>.195</td>
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<td>(119)</td>
<td>.905</td>
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<td>Self-awareness</td>
<td>-0.31</td>
<td>.753</td>
<td>0.055</td>
<td>(119)</td>
<td>.956</td>
</tr>
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<td>Memory</td>
<td>0.88</td>
<td>.379</td>
<td>-0.45</td>
<td>(119)</td>
<td>.656</td>
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<td>0.090</td>
<td>.929</td>
<td>-1.35</td>
<td>(119)</td>
<td>.179</td>
</tr>
<tr>
<td>Direction of attention</td>
<td>-0.27</td>
<td>.787</td>
<td>-1.43</td>
<td>(119)</td>
<td>.156</td>
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<tr>
<td>Absorption</td>
<td>0.20</td>
<td>.841</td>
<td>-0.051</td>
<td>(119)</td>
<td>.960</td>
</tr>
<tr>
<td>Negative affect</td>
<td>0.12</td>
<td>.121</td>
<td>1.03</td>
<td>(119)</td>
<td>.303</td>
</tr>
<tr>
<td>Anger</td>
<td>0.13</td>
<td>.130</td>
<td>-0.091</td>
<td>(119)</td>
<td>.928</td>
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<td>Sadness</td>
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<td>.065</td>
<td>0.99(6)</td>
<td>(113)</td>
<td>.322</td>
</tr>
<tr>
<td>Fear</td>
<td>1.29</td>
<td>.198</td>
<td>1.66</td>
<td>(113)</td>
<td>.100</td>
</tr>
<tr>
<td>Altered experience</td>
<td>0.12</td>
<td>.902</td>
<td>0.53</td>
<td>(119)</td>
<td>.594</td>
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<td>Altered body image</td>
<td>0.71</td>
<td>.476</td>
<td>0.42</td>
<td>(119)</td>
<td>.675</td>
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<td>-0.74</td>
<td>.461</td>
<td>1.03</td>
<td>(119)</td>
<td>.305</td>
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<td>.472</td>
<td>0.24</td>
<td>(119)</td>
<td>.808</td>
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<td>0.58</td>
<td>.559</td>
<td>0.44</td>
<td>(119)</td>
<td>.659</td>
</tr>
<tr>
<td>Volitional control</td>
<td>-0.31</td>
<td>.760</td>
<td>-1.21</td>
<td>(119)</td>
<td>.228</td>
</tr>
<tr>
<td>Vivid imagery</td>
<td>-0.64</td>
<td>.523</td>
<td>-0.11</td>
<td>(119)</td>
<td>.911</td>
</tr>
<tr>
<td>Amount of imagery</td>
<td>0.011</td>
<td>.991</td>
<td>0.31</td>
<td>(119)</td>
<td>.754</td>
</tr>
<tr>
<td>Vividness of imagery</td>
<td>-1.11</td>
<td>.268</td>
<td>-0.75</td>
<td>(119)</td>
<td>.456</td>
</tr>
<tr>
<td>Internal dialogue</td>
<td>0.87</td>
<td>.383</td>
<td>1.39</td>
<td>(119)</td>
<td>.168</td>
</tr>
<tr>
<td>Altered state of awareness</td>
<td>0.20</td>
<td>.838</td>
<td>0.096</td>
<td>(119)</td>
<td>.924</td>
</tr>
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</table>
### Appendix U – Intercorrelation matrices\(^\dagger\) for the 12 PCI major dimensions during the eyes open sitting quietly (baseline control) condition [Main Study C] (n = 121)

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
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\(^{†}\) Pearson’s correlation coefficient using transformed variables

\(= p < .05\) (two-tailed)  \(= p < .001\) (two-tailed)  \(= p < .0005\) (two-tailed)
Appendix V – Intercorrelation matrices\(^+\) for the 12 PCI major dimensions during the archive film (pseudo attention placebo) condition [Main Study C] (n = 121)

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\(^+\) = Pearson's correlation coefficient using transformed variables  
\(^*\) = p < .05 (two-tailed)  
\(^{**}\) = p < .001 (two-tailed)  
\(^{***}\) = p < .0005 (two-tailed)
Appendix W – Intercorrelation matrices† for the 12 PCI major dimensions during the charismatic leadership speech [Main Study C] (n = 121)

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† = Pearson's correlation coefficient using transformed variables  
* = p < .05 (two-tailed)  
** = p < .001 (two-tailed)  
*** = p < .0005 (two-tailed)
# Appendix X – Intercorrelation matrices for the 12 PCI major dimensions during hypnosis (n = 246) supplied by Ronald J. Pekala [Main Study C]

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* = p < .05 (two-tailed)  ** = p < .001 (two-tailed)
Appendix Y – Intercorrelation matrices for the 12 PCI major dimensions during eyes closed sitting quietly (n = 246) supplied by Ronald J. Pekala [Main Study C]

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* = p < .05 (two-tailed)  ** = p < .001 (two-tailed)
### Appendix Z – Assessments of altered state of consciousness (as defined by overall pattern effect) for Type I – V followers

[Main Study D]

#### Type I (n = 34)

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<td>(78, 13755)</td>
<td>127</td>
<td>.034</td>
</tr>
<tr>
<td>Archive film versus charismatic leadership speech</td>
<td>0.98</td>
<td>(78,13755)</td>
<td>95.1</td>
<td>.520</td>
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<td>Eyes open sitting quietly versus charismatic leadership speech</td>
<td>1.31</td>
<td>(78, 13755)</td>
<td>127</td>
<td>.036</td>
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#### Type II (n = 17)

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</tr>
</thead>
<tbody>
<tr>
<td>Across all three conditions</td>
<td>1.12</td>
<td>(156, 6139)</td>
<td>277</td>
<td>.150</td>
</tr>
<tr>
<td>Eyes open sitting quietly versus archive film</td>
<td>0.94</td>
<td>(78, 3233)</td>
<td>125</td>
<td>.630</td>
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<tr>
<td>Archive film versus charismatic leadership speech</td>
<td>1.09</td>
<td>(78, 3233)</td>
<td>144</td>
<td>.280</td>
</tr>
<tr>
<td>Eyes open sitting quietly versus charismatic leadership speech</td>
<td>1.36</td>
<td>(78, 3233)</td>
<td>180</td>
<td>.021</td>
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#### Type III (n = 25)

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<tbody>
<tr>
<td>Across all three conditions</td>
<td>1.44</td>
<td>(156, 13813)</td>
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</tr>
<tr>
<td>Eyes open sitting quietly versus archive film</td>
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<td>(78, 7276)</td>
<td>202</td>
<td>&lt; .0005</td>
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<tr>
<td>Archive film versus charismatic leadership speech</td>
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<td>(78, 7276)</td>
<td>127</td>
<td>.120</td>
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<tr>
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<td>(78, 7276)</td>
<td>190</td>
<td>&lt; .0005</td>
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#### Type IV (n = 18)

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<td>(156, 6930)</td>
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<td>&lt; .0005</td>
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<tr>
<td>Eyes open sitting quietly versus archive film</td>
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<td>(78, 3650)</td>
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<td>(78, 3650)</td>
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#### Type V (n = 27)

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<td>(78, 8539)</td>
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<td>1.78</td>
<td>(78, 8539)</td>
<td>184</td>
<td>&lt; .0005</td>
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</tbody>
</table>
References


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Braid, J. (1852) *Witchcraft, animal magnetism, hypnotism and electro-biology; being a digest of the latest views of the author on these subjects*, London: John Churchill.


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