Inequality in Academic Psychology:
Rethinking the Basis of Privilege and Disadvantage

by

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Statement of Originality

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Abstract

This thesis aims to assess the extent to which inequality theories based on two prevalent conceptual themes can explain inequality in domains of UK academic psychology that are well represented by – and typical of – women and Black scholars. The two themes explored are, 1) the assumption that privilege and group disadvantage have the same origin that can logically be described either in terms of processes that lead to privilege or processes that lead to disadvantage, and 2) the attribution of inequality to automatic or passive processes. This thesis presents a series of studies that offer critical tests for equality theories connected by these themes. These theories include Tokenism (Kanter, 1977), norm theory (Kahneman & Miller, 1986), feminist critiques of science (e.g. Harding, 1986), and critiques of academic organisational structures (e.g. Deem, 1998). The studies begin by assessing gender inequality in psychology at the level of the academic organisation (Chapters 2 – 3) and shift to an analysis of gender and racial inequality at the social-cognitive level of research evaluation (Chapters 4 – 5). I argue that the theories of inequality for which the studies provide critical tests are connected by ideologies that impose ways of thinking that may divert attention from processes that underlie privilege and disadvantage; namely, that privilege can exert independent effects on inequality that are driven by ideology about privileged and disadvantaged social groups.
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Chapter 1: Introduction

Abstract

Women and Black people employed in academic psychology work in a field where they have historically had limited access. Although recent years have seen vast improvements in the access women and Black people have to study and work in psychology, scholars suggest that the continuation of White men’s privilege can be observed in the unequal distribution of academics in the hierarchy and across sub-disciplines. Numerous, and often competing theories, established within different theoretical traditions have been offered to explain the persistence of inequality. These include Tokenism (Kanter, 1977), norm theory (Kahneman & Miller, 1986), theories of Othering (e.g. De Beauvoir, 1949; McIntosh, 1988), androcentrism (Bem, 1993), feminist critiques of science (e.g. Harding, 1986), and critiques of academic organisational structures (e.g. Deem, 1998). It is argued that these theories are connected by ideologies that impose ways of thinking that may divert attention from the processes that underlie privilege and disadvantage. Two themes are critically examined. The first is the conceptualisation of social privilege and social disadvantage as “two sides of the same coin” and outcomes of a universal process. The second is the conceptualisation of inequality as an automatic consequence of pre-existing processes or conditions. The analysis raises questions regarding the extent to which theories that conceptualise inequality in these ways can be useful for understanding and addressing inequality in academic psychology and concludes with a brief outline of the aims and structure of the thesis.
Introduction

Historically, academic psychology has been an occupation of White men. As with other scientific disciplines, women were underrepresented as psychologists, and prior to the 1980’s, psychological research was most often authored by men (Gannon et al., 1992). Black British intellectual thought commonly found expression outside academia (Warmington, 2014), and during the 1960s the underrepresentation of Black academics in psychology was a highly salient concern for Black psychologists (Wispe, Awkard, Hoffman, Ash, Hicks & Porter, 1969; Williams, 2008). Many feminist and anti-racist scholars writing in the 1980s and 90s problematised the underrepresentation of women (e.g. Crawford & Marecek, 1989) and Black women (e.g. Amos & Parmar, 1984; Brown, 1990) in response to what they saw as the restriction on the resources for producing knowledge and the privileging of White and ‘male’ perspectives.

In marked contrast to its historical beginnings, psychology has become an academic field with a reputation for being very well represented by women. Step into an undergraduate psychology lecture in any UK or Irish university and you may well determine that its reputation is justified. Comparison of the figures made available online by the Higher Education Statistics Agency (HESA) for the academic years between 2002/03 and 2007/8 indicates that women consistently represented 55% of psychology students. Women are also well represented as academics, and there is an international trend for a more or less equal representation of women and men in the field as a whole (see Wakeling, 2010 for the EU; Kohout & Pate II, 2013, for American Psychological Association membership; Boatswain et al. 2001 for Canada). The gender composition in
psychology has accordingly been presented as one to which scientific fields where women continue to be underrepresented can aspire (e.g. Rosser, 2004).

The representation of Black students in British academia is also high. The participation rate for Black people has been estimated at 61%, whilst the participation rate for White people was estimated at only 38% (Connor et al., 2004). According to data published by the Equality Change Unit (ECU), Black students (identifying as ‘Black Caribbean’, ‘Black African’ and ‘Black other’) made up 6% of UK-domicile students studying in UK institutions in 2011/12 (ECU, 2013). This is nearly double the percentage of Black people representing the general population (3.3%) as recorded in the 2011 UK census. In fact, the percentage of Black students has grown considerably in a short space of time, from 4.4% in 2003/4 to the current proportion. At post graduate level, Black UK-domicile students are similarly well represented on taught courses (6.1%), and whilst fewer Black students take research courses, they still represent a relatively equitable proportion (3.1%). Available statistics do not establish the degree to which these figures are representative of Black people on British psychology courses. However, relatively large numbers of ethnic ‘minority’ students have been accepted for study on psychology degrees. Between 1998 and 2001 the percentage of students accepted to study psychology at undergraduate level was 3% overall (Turpin & Fensom, 2004). If the general increase in the proportion of Black students since the early 2000s is something to go by, then the available statistics suggest that Black people are likely to have reasonable access to study on psychology courses.
In a context where universities are expected to instil ‘liberal’ thinking and social justice, and the formal exclusion of women and Black people is prohibited, conventional wisdom suggests that improved access to a discipline should be coupled with greater access to different academic roles and areas of expertise. However, the distribution of academics of different genders and races within psychology is not equal. Scholars have drawn attention to two ways in which the unequal distribution of academics is expressed, which will be described in turn in the following paragraphs. The first of these is the unequal distribution of women and men and White and Black people in the academic hierarchy. The second is their unequal distribution across different sub-disciplines.

*Vertical segregation* is the term commonly used to denote the segregation of employees belonging to different social groups according to their job status. Vertical segregation refers to the under or overrepresentation of members of social groups at the top of the hierarchy. The social sciences are academic domains characterised by strong vertical gender segregation. Between 2002 and 2010, the percentage of women in the social sciences at all stages of the academic career increased across EU academia, yet the overrepresentation of men in high status academic roles persisted (European Commission, 2013). In fact, women represented the numerical minority of grade A staff (Professor or equivalent) in the social sciences in 2010 in all participating countries, and represented just under 23% of professors in the UK. Academic managerial positions are similarly overrepresented by men with women forming the numerical minority of leaders for institutions in all participating EU countries (data for the UK and Ireland was not available for these analyses, European Commission, 2013).
Available statistics also suggest that White and Black academics are vertically segregated. Although women appear to be well represented in psychology overall, both Black women and Black men continue to be underrepresented beyond undergraduate level. In 2011/12, the percentage of UK national and non-UK national Black academics representing psychology and the behavioural sciences was 0.8% and 1.8% respectively, or 1% in total (ECU, 2013). The underrepresentation of Black people seems particularly pronounced at the upper end of the hierarchy. Unfortunately, data on the ethnicity of academics by subject area and status are presently unavailable, but staff data for SET disciplines (science, engineering and technology) which are inclusive of psychology, estimated that the percentage of Black UK professors is only 0.3% (ECU, 2013). In fact, there were just 85 Black professors in the UK in 2013, out of over 17 thousand in total (ECU, 2013).

Whilst women and Black people have a good level of access at the lower end of the academic hierarchy, the figures indicative of vertical gender and racial segregation sit in contrast to thinking that equates access to academic disciplines with professional equality. Alternatively, research suggests that the access gained by women and Black people to the study of psychology could represent horizontal segregation. Horizontal segregation is understood as the under or overrepresentation of certain social groups in occupations or sectors not ordered by a hierarchical criterion (Bettio and Verashchagina, 2009). In academic psychology, this would refer to the unequal distribution of women and men and Black and White people across different sub-disciplines.
Horizontal gender segregation is indicated by publication patterns and membership statistics for specialist fields. Psychology journal publication patterns, for instance, indicate that women and men typically publish in different research areas (Gannon et al., 1992). The American Psychological Association (APA) 2012 membership statistics indicate that the divisions of General Psychology and Theoretical and Philosophical Psychology are overrepresented by men, whilst the majority of Psychology of Women and Developmental Psychology members are women. In line with the association of women scholars with the specialist study of women, Grant & Ward’s (1991) analysis of gender-related articles from ten sociology journals published between 1974 and 1983 revealed that women scholars were over twice as likely to be solo authors of gender articles as of other published articles. In contrast, men more frequently published as first authors for other ‘general’ research domains. In sum, women’s increased representation in psychology may in part be attributable to their access to specialised subfields such as gender research.

White and Black researchers are also located in different subfields. White people are mostly located in ‘general’, non-race related research areas, whilst Black scholars have been visibly linked primarily to the study of race and diversity related issues (Hendrix, 2002; Avery, 2008). Steward and Power’s (1996) analysis of the 49 specialty sections of the APA in 1993 indicated that 38 of these were represented by more than 97% White professionals. However, the Society for the Psychological Study of Ethnic Minority Issues was by far the best represented by professionals of ethnic ‘minority’ status, who formed over 48% of its total membership. This was followed by the Society
for Community Research and Action: The Division for Community Psychology, which was represented by 6% ethnic minority members. Fifty-eight percent of authors of research about racialised social groups indexed in PsycINFO between 1993 and 1999 were themselves members of racialised groups and over half of the most prolific authors were of Black ethnic background (Hall & Maramba, 2001). In sum, the access many Black people may have to study in psychology could be accounted for by their access to specialised, race-related research sub-disciplines, as opposed to the field as a whole.

The problem of horizontal gender segregation is often presented from the perspective of individual choice, such as providing the opportunity for personally meaningful research. However it comes about, horizontal segregation may establish conditions that can support gender and racial inequality. In the UK, Higher Education institutions are increasingly focused on the explicit regulation of research outputs (Deem, 1998). In the United States tenure and salary increments are typically dependent on publication in peer-reviewed academic journals (Hagstrom, 1974; Yoels, 1973) whilst academics are under pressure to publish more high quality, high impact research to meet the criteria for research assessment exercises that inform investment strategies and hiring decisions. However, research suggests that the areas of research women and Black scholars are associated with – such as gender and race related research - may not fare well under these evaluative criteria.

Research articles pertaining to racialised groups, for example, are relatively absent from first-tier journals, and typically have low citation impacts (Hall & Maramba, 2001). Race-related research can also be held to unfair evaluative criteria, which can
affect the acceptance of papers publication and research funding proposals (Sue, 1999). For example, external validity is more readily applied as a predicate for ‘minority’ research, than for research other research. To illustrate, controls are commonly required for ‘minority’ groups (e.g. White controls for Chinese participants) but not for majority groups (Chinese controls are rarely required for research with White subjects) (Sue, 1999). In a similar fashion, the merit of women’s work can be underestimated by journal impact factors (Hegarty & Walton, 2012) whilst women’s disadvantage in science has been linked to their overrepresentation in low impact factor journals (Tower, Plummer & Ridgewell, 2011) and their conflation with low-prestige research methods (Ferree, Khan and Morimoto, 2007).

Research also suggests an absence of gender and race related research activities in prestigious and influential academic departments. The Sociologists for Women in Society’s ranking of graduate sociology departments suggested a trade-off exists between seeking work and education in the most prestigious departments or choosing to work with women faculty and scholars interested in gender (Hays & Risman, 2004). At the same time, ‘Minority’ research has been described as a sub-discipline that may be viewed as peripheral by mainstream psychologists, with nearly 90% of ethnic minority research authors indexed in the PsycINFO database between 1993 and 1999 being based outside psychology departments (Hall & Maramba, 2001). In sum, horizontal gender and racial segregation in psychology has been linked with conditions that may not grant women and Black people the same professional opportunities as White men.
In summary, an unequal gender and racial distribution appears to be a persistent issue in academic psychology, even though women and Black people may be regarded as experiencing fairer access in this field than they have done historically, or than they experience in other scientific disciplines. Specifically, vertical and horizontal gender and racial segregation seems to locate White men in the higher status roles and more prestigious research domains than women and Black people. The gender and racial composition of academic psychology thus provides a fitting context to tease apart how gender and racial inequality can persist in a context where the disadvantaged group is otherwise well represented, or even typical of a given work domain.

**Ideology in Theory**

Social scientists generally approach the study of inequality between social groups with theory that describes the processes that underlie it. A better understanding of inequality suggests the nature of the problem (or indeed, if there is a problem) and ways to overcome it. However, theory – whilst being developed to redress inequality – can sometimes obscure effective solutions to research problems.

Science has been described as a form of knowledge production that can both reflect and enact ideology. In his case for a “rhetorical psychology”, Michael Billig (1991) presents ideology as every day, “common sense” thinking which repeats culturally produced assumptions that confirm existing social arrangements of power. The falsification of hypotheses is conceptualised in Poperian science as a process of logic that distinguishes science from ideological thought, or ‘pseudo-science’. However, according to Billig (1991), because thinking is inherently ideological, psychology cannot be
regarded as operating within an ideological vacuum. Instead, the psychology is bound up with the ideology (Billig, 1991, p. 5).

Central to Billig’s notion of ideology as the reproduction of culturally defined ways of thinking, is that thought cannot be viewed as original or isolated from shared cultural assumptions. Theory can thus also be reasoned to represent assumptions and beliefs that are not the original product of scientific method. In 1962, Thomas S. Kuhn published *The Structure of Scientific Revolutions*, where he argued that theory and experiments are derived from ‘problems’ that are defined in terms of beliefs and concepts that precede their scientific exploration and are therefore inherently value-laden (see also Woolgar, 1993; and Foucault, 1966/1994, for the social sciences). From this view, theory could represent ideas that may go largely unquestioned or untested as a result of their shared cultural acceptance.

Many scholars have drawn attention to problems with inequality constructs that enjoy extensive consensus. For example, conventional terminology for oppressed and privileged groups has been critiqued for obscuring processes that underlie inequality, including the terms ‘minority’ and ‘majority’ (Nibert, 1996), ‘diverse’ and ‘homogeneous’ (Apfelbaum, Phillips & Richeson, 2014) and ‘underrepresented’ and ‘overrepresented’ (Reskin, 1988). As such, inequality theory – even that which may represent the intention to redress power imbalances – has been critiqued for ambiguity that may be diverting attention from solutions to problems.

An implication of the idea that theory can obscure solutions to problems is that conclusions drawn on the basis of research findings may reify inequality. Hacking’s
(1995) theory of the ‘looping of human kinds’ for example, describes how attempts to research ‘natural’ categories of people (or ‘human kinds’) present social categories as natural categories, leading to the different treatment of the kinds categorised, which ultimately affects their representation in future research. From this perspective, scientific theory is engaged in an inherently social process. It may not merely disclose facts, but also generate consensus, acceptance and interventions.

Although scientific methods can enact ideology, they can also provide politically useful ways of doing research. The idea that science can enact ideology may appear at odds with the use of scientific methods for theory generation. However, arguments that claim theory can contain ideology are mostly distinct from schools of thought that preclude science as a useful means of knowledge production. Feminist poststructuralist approaches, for instance, locate gender inequality in science within the scientific structures themselves and therefore do not think there can be any ‘good’ in science. Empirical methods have nonetheless been identified and employed as useful means of addressing problems in science (Kuhn, 1960; Spears & Smith, 2001; Billig, 1991) and the political nature of experiments has been advocated as inherently suited to the study of the political elements of social life (Spears & Smith, 2001). By means of a solution, Kuhn (1960) advocated a shift from the construction of scientific method as progress towards more perfect or truthful theories to the development of specialised bodies of knowledge that are “fitter” or stronger contenders within the current political context. Models of science and knowledge can aim for transformative, contextually relevant representations that promote change rather than neutral representations of ‘why’ things are as they are.
(Billig 1991; Marx, 1975; Sampson, 1981). Like these scholars, the central aim of this thesis is to produce some useful knowledge that can provide insight into ways of challenging inequality in a specific context, that being modern UK academic psychology.

The aim in this thesis is to offer a critical perspective of equality research to inform attempts to address inequality in the context of UK academic psychology. Two dominant themes connecting theories from a number of different fields, disciplines and epistemological traditions will be critically assessed. The first of these is the assumption that group based privilege and group based disadvantage have the same origin, and are “two sides of the same coin”. The second is the assumption that inequality in modern contexts is the result of automatic or passive mechanisms. These assumptions, it will be argued, represent largely unexamined theoretical positions that could impose ways of thinking that divert attention from effective means of challenging inequality.

**Common ‘Values’ in Inequality Theory**

The following pages explore two themes that bring together various contemporary theories of inequality, developed within a number of theoretical traditions and applied to address the relationship between inequality and issues of representation and typicality. These include norm theory (Kahneman & Miller, 1986), Tokenism (Kanter, 1977), the glass ceiling (Cotter, et al., 2001), androcentrism (Bem, 1993), post-modernist feminist critiques of science (e.g. Harding, 1986), and theories of Othering (De Beauvoir, 1949; McIntosh, 1988). The two themes - discussed in turn - broadly concern the construction of inequality as: (a) the sum of group-based disadvantage and group-based privilege, which can be described either in terms of a process that benefits one group or
disadvantages the other, (b) the automatic consequence of a particular process or condition. Drawing on the discussion of the ideological nature of social science above, the treatment of inequality in these ways invites further investigation for two reasons. Firstly this thinking is extensive. Secondly, this thinking reflects assumptions which have gone largely untested and may reify existing relations of power. The following provides critical analysis of the ways in which the two themes connect theories of inequality and reviews empirical and theoretical evidence that support the alternative views: namely that privilege and disadvantage have their own discrete influences on inequality, and can be the result of active, selective behaviour. The empirical studies in this thesis provide critical tests for the theories addressed in this chapter to assess vertical gender segregation in academic psychology and unequal evaluation of research in domains that are typical of women and Black Scholars.

**Inequality as “Two Sides of the Same Coin”**

Social inequality is commonly defined as the disparate or unequal distribution of resources or opportunity according to socially defined categories of people, which is generally considered to privilege one social group, whilst working to the disadvantage of another. Inequality is an inherently comparative concept, as any behaviour or condition that privileges one group will necessarily disadvantage the other. Consequently, privilege and disadvantage are often used interchangeably to explain inequality. In general, privilege and disadvantage are treated as “two sides of the same coin”, unified by a single process or cause which can be logically explained either as the result of behaviour or processes
that privilege a group, or as the result of behaviour or processes that disadvantage a group.

However, in practice, theories tend to frame the driving force of inequality in terms of disadvantage (see Fiske, 2010; Kluegel & Smith, 1986, for reviews). For example, prejudice and discrimination constructs usually focus on prejudice and discrimination against women as opposed prejudice or discrimination in favour of men. The primacy given to disadvantage has been interpreted as a valid semantic framing of the causes of inequality, which nonetheless permits privileged group members to avoid the negative psychological effects of framing inequality in terms of their position of privilege (Powell, Branscombe & Schmitt, 2005). However, it will be argued here that the distinction between disadvantage and privilege is not merely semantic. Instead, the conceptualisation of inequality as “two sides of the same coin” may divert attention from the independent effects of behaviours that privilege White men.

Inequality is an inherently comparative concept because it views the experience of one social group relative to another. However, whilst the experiences of group privilege and group disadvantage are interrelated, this does not mean that a single process or condition underlies them both. Theoretical and empirical evidence suggests that processes that privilege one group can exert effects on inequality that are independent from processes that disadvantage the other group. Brewer (1999) reviewed literature on intergroup relations, critiquing the prevailing view of “ingroup love” and “outgroup hate” as reciprocally related. Brewer (1999) argued that that identification with outgroups and negative attitudes towards ingroups are typically viewed as correlated effects. Here,
discrimination between ingroups and outgroups is the relative favouritism toward the ingroup and the absence of equivalent favouritism towards the outgroup. However, Brewer’s own research reports no consistent correlation between the negativity of individuals’ attitudes towards outgroups and the positivity of attitudes towards members of their own groups. Brewer (1999) presented findings that support the alternative view - first conceived by Allport in 1954 - that identification with the ingroup is independent of negative attitudes towards the outgroup, and that in-group bias can be motivated by preferential treatment of ingroup members.

Alphebaum et al. (2014) similarly critiqued the convention that conceptualises the effects of diversity and homogeneity - the degree to which the group members differ or converge with respect to race, gender, attitudes or other characteristics – as interrelated, comparable ‘opposites’. In addition, Alphebaum et al. (2014) noted that whilst research typically compared the effects of diversity and homogeneity, it generally framed the outcomes in terms of the effects of diverse groups whilst treating homogeneity as a baseline. In fact, when they performed a study of 240 research articles comparing diverse groups to homogeneous groups, they found that 205 of the 240 articles interpreted the effects in terms of diversity alone. Alphebaum et al. (2014) questioned this theorising, presenting literature to indicate that on the contrary, diversity and homogeneity independently produce their own effects.

The patterns described by Brewer (1999) and Alphebaum et al. (2014), it is argued, are not unique to the intergroup relations and diversity literatures. The analysis in the following paragraphs aims to show that this thinking is also contained in literature
established in different disciplines, on different theoretical grounds and with different aims. The analysis will present theories that have been applied to explain the relationship between inequality and social group representation and typicality, including the occupational theories of Tokenism (Kanter, 1977) and the glass ceiling (Cotter et al., 2001), along with theories explaining the ‘Othering’ of disadvantaged groups including Powell et al.’s (2005) theory of collective guilt, and a theory of social cognition called norm theory (Kahneman & Miller, 1986). The case will be made that these theories suggest that group-based privilege and group based-disadvantage have the same origin, which is framed in terms of discrimination against disadvantaged groups. Empirical and theoretical evidence which presents an alternative view– that privilege can be conceptualised as a discrete phenomenon that functions independently from disadvantage – will be reviewed, raising the following questions: can inequality in academic psychology be usefully conceptualised as the result of a single process that can be logically framed either in terms of disadvantage or privilege? Or, are there occasions when privilege exerts independent effects on inequality and can only be logically conceptualised in terms of privilege?

**Inequality Framed as Disadvantage**

Group-based disadvantage is often conceptualised as the driving force of inequality. However, close analysis of theories that present inequality as the outcome of disadvantage reveals that they tend to conceptualise inequality as the summation of group disadvantage and group privilege (Powell et al., 2005). As a consequence, these theories
could logically conclude that either privilege or disadvantage is the driving force of inequality.

**Tokenism.** Tokenism theory (Kanter, 1977) explains inequality in the workplace. Inequality relating to professional attainment has often been conceptualised as an indication of merit or deservingness. However, Tokenism theory (Kanter, 1977) offered a gender and race ‘neutral’ explanation for why women – or indeed any social group - experience occupational disadvantages, suggesting that inequality results from the numerical underrepresentation of a social group in a given workplace, organisation or profession (Tokenism, Kanter, 1977). Specifically, Kanter (1977) predicted that any group forming less than 15% of an organisation would be subject to predictable forms of discrimination. The prediction that minority members will be professionally disadvantaged is also extended to men, such as ‘female’ professions like nursing. When this prediction is extended to academic psychology, women and men should experience barriers to their progression to high status academic roles when they work in departments where employees belonging to their gender category form the numerical minority.

According to Tokenism theory (Kanter, 1977), workplace inequality – the relative disadvantages and privileges experienced by employees belonging to different social groups - is attributable to the underrepresentation of the disadvantaged group. In other words, discrimination against underrepresented employees is conceptualised as the driving force for both disadvantage and privilege.

**The glass ceiling.** The ‘glass ceiling’ is a metaphor for unseen barriers to women’s professional progression. Cotter, et al. (2001) established the glass ceiling as a
metaphor and theory for a unique form of discrimination against disadvantaged social
group members which permits the unfair professional progression of privileged group
members, once the relative numbers of employees belonging to privileged and
disadvantaged groups have been accounted for. Specifically, Cotter et al. (2001) argued
that four conditions hold: that a gender or racial difference (a) is not explained by other
job-relevant characteristics of the employee; (b) is greater at higher levels of an outcome
than at lower levels of an outcome; (c) must occur in the chances of advancement into
higher levels, not merely the proportion of each gender or race currently at those higher
levels; (d) must increase over the course of a career.

This definition of the glass ceiling runs in direct opposition to tokenistic
theorising. The glass ceiling theory argues that barriers exist in a workplace or profession
when a social group experiences disadvantages beyond those that can be attributed to
numerical representation. Nevertheless, the glass ceiling theory can seen to conceptualise
inequality as the comparison of group-based advantage and group-based disadvantage.
Applications of the glass ceiling in academia, for example, explore possible glass
escalator effects though comparison of the proportion of women who attain high status
roles relative to the proportion of men who attain high status roles. The Glass Ceiling
Index (GCI) is a calculation used in European Commission documents to measure the
relative chances of women, as compared to men, reaching a top position. The GCI in the
latest She Figures: Gender in Research and Innovation report, assesses the opportunity
for women to move up the hierarchical ladder in academic disciplines by comparison of
the ratio of women to men in grade A positions (equivalent to “Full Professors” in most
countries) to the ratio of women to men in academia (European Commission, 2013). In this sense, the glass ceiling explains group-based disadvantage and privilege with reference to barriers to women’s progression, as opposed to mechanisms that aid the progression of men.

Of course, Tokenism and the glass ceiling provide very different predictions about when inequality in academic psychology will occur. However, both theories fundamentally attribute both group-based disadvantage and privilege to a single cause, which is framed in terms of discrimination against the disadvantaged group. Concerns regarding the functional value of such theories have focused on the decision to explain inequality in terms of disadvantage rather than in terms of privilege. Theories of Othering including Powell et al.’s (2005) theory of collective guilt and norm theory (Kahneman & Miller, 1986) suggest the tendency to focus attention on disadvantaged groups rather than privileged groups may represent a ‘logical’ and accurate way of explaining group difference, but a way which may foster inequality.

**Theories of Othering.** A widely acknowledged characteristic of social group inequality is *Othering*. The *Other* refers to the oppressed, colonised and subjugated. When members of privileged groups consider inequality, they tend to think in terms of what is different or Other about the *disadvantaged* group, who become the focus attention as a result (Bem, 1993; Cook & Curtin, 1987; Kluegel & Smith, 1986; Miller, Taylor, & Buck, 1991).

The term Other is usually attributed to 19th Century philosopher Hegel, who rejected the opposition of dualisms in favour of their conceptualisation as intrinsically
interrelated, such as the dialectic interdependence of the Master and Slave. This thinking was adopted by Simone De Beauvoir (1949) to explain the social disadvantage experienced by women and social privilege experienced by men. Her primary thesis was that women are oppressed because they are distinguished as Other, in direct opposition to men. Central to this is the idea that women’s agency and independence is under-estimated whilst men’s is exaggerated. As such, men are defined as alpha, universal and complete whilst women are constructed as derivative, particular, and incomplete. This construction of women as Other and their associated social disadvantage only makes sense with comparison to the definition of men as socially privileged. From this view, the constructs of social disadvantage and privilege are fundamentally interconnected. However, they are not logical opposites: the privilege afforded to men becomes a neutral reference point, whilst women are treated as Other.

In recent decades, this theory has been interpreted in psychology to suggest that inequality can arise from attention to disadvantaged groups as a result of their comparison to privileged groups. De Beauvoir influenced Bem’s (1993) theory of androcentrism, which argues that men form the norm from which women are seen to deviate. As a result, women are marked as Other, which is presumed to work to their disadvantage. Processes of Othering have been similarly applied to explain the privilege experienced by White people and disadvantage experienced by Black people (McIntosh, 1988). Being marked as Other has accordingly been found to reify stereotypes and enhance and legitimise beliefs about status and power in society (Bruckmüller, Hegarty, & Abele, 2012).
**Norm theory.** Norm theory (Kahneman & Miller, 1986) is a social-cognitive model which has been applied to explain why disadvantaged groups become marked at Other. The theory argues that attributes of group members (such as their gender or race) become linguistically marked as Other because they are perceived as atypical in contrast to the norm for the group. On meeting a member of a social category, or being presented with a category label (e.g. psychologist), exemplars of the category (usually highly typical and those most recently encountered) are recalled from long term memory. These exemplars are summarised in a ‘category norm’: a mental representation of the social group against which the group member is compared. If the group member possesses a feature that contrasts with the norm then that feature will be experienced as highly surprising. Thus the feature becomes salient and is readily called upon to explain the individual’s behaviour. In contrast, features of a category member that fit the norm remain implicit and go unremarked.

According to norm theory, asymmetries in the marking of privileged and disadvantaged groups occur because privileged group members populate category norms and thus form the reference point against which disadvantaged group members are compared and become “the effect to be explained”. A consequence of this theorising, is that people could logically explain difference either by focusing explanations on the disadvantaged group or by focusing explanations on the privileged group. However, people typically do not do this; instead they tend to explain the lower status group with reference to the higher status group. A large body of research which has explored who becomes the point of reference in social group comparisons supports this prediction (for a
review see Hegarty & Bruckmüller, 2014). For example, Miller et al. (1991) asked people to explain gender differences in voting behaviour. Participants tended to explain why women differed from men, rather than why men differed from women. This tendency to focus explanations on women was interpreted as the positioning of men as the norm from which women are seen to deviate.

On one level, norm theory offers an explanation for the general tendency to focus attention on disadvantaged groups, such as is the focus of attention in Tokenism theory (Kanter, 1977) and in the glass ceiling metaphor (Cotter et al., 2001). On another level, because applications of norm theory generally assume that a process of typicality results in attention that is considered disadvantageous for those who are the focus, the theory itself provides a model of inequality that presents disadvantage and privilege as having the same origin. In this case, group privilege and group disadvantage are conceptualised as the result of a cognitive processes pertaining to group typicality. In sum, norm theory offers a solution for why people might focus attention on disadvantaged groups and suggests this that inequality results from a single cognitive process pertaining to typicality.

**Collective guilt.** Powell et al. (2005) noted the tendency for theories frame inequality in terms of social disadvantage. In line with norm theory’s idea that inequality can logically be explained by focusing attention on either the privileged group or the disadvantaged group, these authors suggested that theories of inequality can broadly be seen as addressing the same problem irrespective of whether they focus on privilege and discrimination. This means that inequality can be correctly framed as either the result of
privilege or the result of disadvantage (Powell, et al., 2005). Powell, et al. (2005) conducted two studies, one in which White American participants assessed statements of inequality framed as either White privilege or Black disadvantage, and another where participants generated examples of White privileges or Black disadvantages. In both experiments, framing of inequality as the result of White privilege led to greater guilt and less racism than when inequality was framed as the result of Black disadvantage. The authors suggested that although disadvantage and privilege can be used interchangeably to explain inequality, framing inequality as Black disadvantage allows privileged group members to avoid the negative psychological implications associated with discriminatory behaviour.

There are two key points to be drawn from the theories presented here. Primarily, they hold to the assumption that inequality has a single origin, and this origin can logically be explained either in terms of the treatment of the disadvantaged group or the treatment of the privileged group. Secondly, they suggest that people tend to focus on disadvantage rather than privilege, and that this focus of attention may itself reify inequality.

Other ‘Logical’ Conceptualisations of Inequality

The theories presented so far adopt a model of inequality that can logically be described either in terms of privilege or disadvantage. However, the following thought experiment will demonstrate that whilst inequality may be an inherently comparative concept, processes that lead to privilege and disadvantage cannot always be applied interchangeably to explain inequality.
A behaviourist may wish to conduct a study to see if reward or punishment is the most effective way to condition a desired behaviour. The behaviourist decides to perform an experiment in which she or he assigns participants to one of two groups so their rates of success may be compared. The behaviourist could employ one or more of the following designs. In experiment 1, group 1 are rewarded for performing the desired behaviour whilst group 2 are punished for performing the undesired behaviour. In experiment 2, group 1 are rewarded for performing the desired behaviour whilst group 2 are neither punished nor rewarded regardless of their performance. In the third experiment, group 1 are punished for performing the undesired behaviour, whilst group 2 are neither punished nor rewarded regardless of their performance. In each experiment, the treatment of group 1 is understood with reference to the treatment of group 2. However, only in experiment 1 was the treatment of one group in an affirming or positive way dependent on the negative treatment of the other group. In experiment 2, the behaviour of one group was affirmed without treating the behaviour of the other group negatively. In experiment 3, one group was treated negatively without affirming the behaviour of the other group.

This thought experiment shows that the positive treatment of a group does not necessitate the negative treatment of another (or vice versa) in order to establish that those groups are treated unequally. When this thinking is applied to the construct of inequality, it suggests that privilege and disadvantage can be conceptualised as exerting independent effects on inequality. Take for example a gender inequality whereby
research by men is viewed more favourably than research by women. Firstly, women and men could be treated or perceived in a way that privileges men and disadvantages women, such as is typical in inequality theory. For example, imagine that a psychology journal makes a decision to publish a psychology paper by a man and reject a paper by a woman. The journal could base its decisions on the belief that men are objective and women are subjective researchers, i.e. “women are less objective than men”. In this case, the decision to reject the paper by the woman and accept the paper by the man could logically be explained either in terms of how it disadvantages the woman or how it affords privilege to the man. Alternatively, imagine that the journal simply rejects the paper by the woman based on the belief that women are subjective researchers, and that this decision was made independently from the decision of whether or not to accept the paper submitted by the man. Here, the decision to reject the woman’s paper could be conceptualised in terms of how it disadvantages the woman, but does not directly privilege the man. Lastly, the decision to accept the paper by the man could be based on the belief that men are objective researchers, and this decision was made independently of the decision as to whether or not the paper by the woman should be rejected. In this instance, the decision to accept the paper by the man could be described as affording privilege to the man, whilst not directly disadvantaging the woman. In sum, inequality that favours men and disadvantages women could result from a process whereby: (a) both privilege and disadvantage can be conceptualised as the driving force of inequality, (b) behaviour that disadvantages women is the driving force of inequality, (c) behaviour that privileges men is the driving force of inequality. In the last two instances, privilege and
disadvantage may not be used interchangeably to describe the processes underlying inequality. Instead, inequality can logically be conceptualised as the result of independent processes that respectively disadvantage women and privilege men.

**Privilege as an Independent Effect: A Possibility?**

Unlike the majority of theories of inequality, the glass escalator theory (Williams, 1992) conceptualises inequality as the result of processes that privilege men. The glass escalator is a metaphor that describes how men can accrue occupational advantages in occupations that are typical of or well represented by women, such as nursing. The metaphor suggests that privileges, such as accelerated promotion, are rendered invisible by virtue of the fact people assume women will be professionally advantaged in occupations where they are well represented. The theory therefore sits in direct opposition to tokenistic accounts of inequality. Instead, it argues that men gain occupational advantages in domains that are overrepresented by women. A glass escalator effect could hypothetically occur under one or more of the following conditions. Firstly, it allows for the possibility that women could be disadvantaged and men could be privileged irrespective of their numerical representation. In this sense, a glass escalator effect would be compatible with the dominant conceptualisation of inequality, as the advantages accrued by men would rely on a direct comparison of the attainment of women. Alternatively, it suggests that women could experience *particular* occupational disadvantages in domains that are typical of women. In which case, the disadvantages women experience in domains underrepresented by women could be amplified. Finally, it suggests that men could gain *particular* occupational advantages in domains that are
typical of women thus the advantages men experience could be amplified. In the last two cases, the disadvantage and privilege would have their own, independent effects on inequality.

To be clear, the argument presented here does not preclude the idea that behaviour that disadvantages one group can privilege another and vice versa. Instead, it is argued that under some conditions privilege and disadvantage can usefully be conceptualised as exerting their own independent effects on inequality. However, given that the prevalent conceptualisation regards the effects of privilege and disadvantage as equivalent, research based on this assumption may conceal alternative ways of understanding inequality.

Examples of when privileged group members are singled out for positive attention support the hypothesis that privilege could be a driving force of inequality. For example, ingroup bias can be motivated by the preferential treatment of ingroup members, rather than negative treatment towards outgroups (Brewer, 1999). Indeed, men have typically been the recipients of scientific awards and been celebrated in historical accounts of scientific achievement which can be seen to maintain their privileged status in science (Rossiter, 1993). Research on aversive racism suggests that the privileging of White job applicants could drive inequity in evaluations of White and Black job applicants. When evaluating the qualifications of White and Black job applicants with objectively weak, moderate and strong credentials, participants evaluate Black candidates with moderate credentials as less qualified than black candidates with strong credentials, but evaluate White candidates as highly qualified irrespective of their credentials (Dovidio and Gaertner, 2000). As the evaluations of Black candidates were consistent with their
credentials, the favourable evaluation of White candidates would appear to be an effect in need of explanation (Dovidio & Gaertner, 2000). Accordingly, people assume that men are the prototypically successful actors for both man-oriented and woman-oriented tasks (McGill, 1993) and men can experience privileges in occupational domains that are typical of women (Grimm & Stern, 1974; Ott, 1989; Reskin, 1988; Williams, 1992). Privileged groups can also shift attention to their own identities when it suits their interests. For example, rather than asserting the distinctiveness of the lower status group, highly identified members of in-groups can sometimes assert their own distinctiveness when boundaries between in-groups and out-groups are indistinct (Jetten, Postmes, & Spears, 2004).

The idea that privilege may produce its own discrete effects is particularly significant when we consider the fact that inequality framed in terms of disadvantage may actually reify inequality and function to avert guilt. Theories that conceptualise inequality as the sum of group of privilege and group disadvantage have been critiqued for framing inequality in terms of disadvantage, when inequality could also logically be explained in terms of privilege. However, if privilege exerts independent effects on inequality, then the assumption that privilege and disadvantage are two sides of the same coin will obscure inequalities that may only be framed in terms of privilege. This would be problematic for two reasons. Firstly, it allows inequality to be presented in a ‘palatable’ way that does not invoke notions of group privilege. Secondly, interventions based on the idea that privilege and disadvantage are interchangeable constructs may not succeed in preventing behaviour that privileges White men. For example, within UK
Higher Education system – as in the workplace in general - the formal exclusion of women and Black people is prohibited and the liberal discourse and meritocratic systems advertise a culture of neutrality and fairness. Of course, rules and conventions that prevent discrimination should engender inequality, assuming it can be correctly framed as either the result of disadvantage or privilege. However, if privilege exerts its own unique effects on inequality, inequality may persist under systems that fail to overtly prohibit privilege.

**Summary**

The former analysis illustrated the prevailing view that inequality has a single origin that can be described interchangeably in terms of disadvantage and privilege. It has been argued that theories nonetheless tend to present disadvantage as the driving force of inequality rather than privilege. This has been critiqued elsewhere as a problematic, albeit partially valid conceptualisation of inequality. However, it has been argued here that the idea that inequality can be validly described either in terms of privilege or disadvantage may obscure discrete processes that independently drive privilege and disadvantage. The concealment of the independent effects of privilege may be particularly significant because interventions largely focus on the prevention of overt discriminatory practices. The potential for privilege and disadvantage to affect inequality independently raises specific questions about inequality in academic psychology. For example, can the processes leading to vertical gender segregation be described either in terms of processes that disadvantage women or privilege men, or are there times privilege and disadvantage have their own independent effects on the relative over (under) representation of women
and men in high status roles? The following section introduces the second theme that will be explored in this chapter: the construction of inequality as the result of a passive, automatic cause.

**Inequality as the Result of a Passive, Automatic Process**

The processes theorised to cause inequality can be broadly classified into two kinds: those which are overt, direct, conscious and deliberate; and those which are subtle, implicit, unconscious and automatic. Changing social norms increasingly prohibit prejudice and discrimination towards oppressed social groups (Crandall, et al., 2002; McConahay, 1986). The nature of privilege and disadvantage has thus changed, and ‘modern’ forms of prejudice and discrimination have become increasingly subtle and covert (Benokraitis & Feagin, 1986). Various contemporary inequality theories challenge the persistence of inequality by drawing attention to automatic and implicit processes that would otherwise continue to create or perpetuate inequality if they went uninterrupted.

The validity of the assumption that inequality goes unnoticed or unchallenged by virtue of automatic or passive processes will be reassessed, and it will be argued that positioning people as ignorant, unaware or powerless can itself render invisible some of the more active ways in which people can enact inequality. The following analysis will assess theories present inequality is an automatic consequence of conditions pertaining to organisational structures in academic institutions (e.g. Deem, 1998; Deem & Johnson, 2003; Knights and Richards, 2003), scientific structures (e.g. Harding, 1986), social group membership (De Beauvoir, 1949; McIntosh, 1988) and processes of cognition (norm theory, Kahneman & Miller, 1986). Theoretical and empirical evidence is
presented to suggest that these theories may underestimate the degree to which people can be active agents in the creation of inequality.

**Organisational and Scientific Structures**

Organisations are conceptualised as structural systems in which the roles, responsibilities and relationships of workers appear relatively objective, well defined and static (Ilgen & Hollenbeck, 1991). Within these systems people follow set procedures and rules, and are ordered in hierarchies according to their roles and responsibilities. The Modern UK system of Higher Education is characterised by a hierarchy of academic and managerial roles, the overt management of academic work using short-term, meritocratic outcome-based performance and quality indicators for teaching and research (Deem, 1998).

It is often argued that the systems used to manage academic work maintain gender inequality. Critiques attributing academic inequality to meritocracy have largely focused on how evaluative systems are skewed in favour of men and several scholars have argued that gender is embedded within the meritocratic systems associated with academic management (see Deem, 1998; Deem & Johnson, 2003; Knights and Richards, 2003). The Research Assessment Exercise (RAE, now the Research Excellence Framework, or REF), for example, has come under considerable scrutiny. Men were almost twice as likely as women to be entered into the RAE 1996, (AUT, 2000) whilst women were underrepresented in the highest rated departments (Higher Education Funding Council for England, 2000).
Scientific enquiry is structured such that routine ways of doing science are evaluated according to universal measures. As is the case with organisational structures, scientific structures have been critiqued for causing gender inequality. The scientific model to which twentieth-century experimental psychology aspired relies on multiple dualisms, such as the objective/subjective, rational/irrational and autonomous/dependent; all of which have been equated with dualisms that characterise binary definitions of gender (Harding, 1986; Morawski & Argonick, 1991). Harding (1986) for instance, argued that masculinity is defined through the achievement of separation, and femininity through the maintenance of attachment. Consequently, scientific ideals such as ‘objectivity’, which assume the detachment from what is being studied, are “inextricably intertwined” with definitions of masculinity and distinct from definitions of femininity, so women are singled out as Other (Harding, 1986). From this perspective, the scientific problems, concepts, theories, methods and interpretations of research that emerged constructed a masculinist discipline that equates men - and not women - with scientific enquiry (Harding, 1986). The privilege and discrimination some scientists experience is therefore constructed as an inevitable consequence of the structures through which science is operated.

One implication of the analysis of inequality on the structural level is that inequality is conceptualised as a necessary or automatic consequence of relatively static and invariant systems. This suggests that people working within systems structured to favour members of some social groups will enact inequality as a consequence of the roles they are required to perform and the rules they have to follow, whilst having relatively
little power to behave in ways that can engender equality, even if they may be so inclined. In this sense, people who operate in systems are constructed as relatively passive agents of inequality.

Critiques attributing inequality to structural conditions place emphasis on the responsibility of organisations to prevent inequality, and avoid placing blame on the individual employee. However, the extent to which academic inequality is an inevitable consequence of either scientific or managerial structures is undetermined. With respect to inequality in academic psychology, research suggests that gender inequality could be a product of the behaviour of those who evaluate scientific work, rather than the systems and structures employed to inform their decisions. Petty, Fleming and Fabrigar’s (1999) analysis of the peer review process for the *Personality and Social Psychology Bulletin (PSPB)* found author gender to be directly related to editor decisions, with men receiving more favourable decisions than women. Petty et al. (1999) simultaneously examined effects of multiple variables including measures of text length, number of experiments, number of references, author institutional prestige, author prestige/expertise, reviewers’ manuscript attribute ratings, reviewer publication recommendation, editor gender, editor workload, and so forth. The analysis suggests that inequality in publication acceptance could pertain to perceived author gender rather than the systems of evaluation employed to evaluate their work. American women and men academic psychology staff have also shown preference to vote to hire a man academic rather than a woman academic with an identical record (Steinpreis, Anders, & Ritzke, 1999), which suggests that academic jobs could be allocated according to social group membership, rather than job criteria. In sum,
the decisions of those who evaluate psychological work may have an influence on academic inequality that is independent from the meritocratic systems of evaluation provided to guide evaluations.

The ascription of inequality to scientific structures can also be problematised. Feminist theories about science, including socialist feminist and radical feminist perspectives, have been critiqued for not speaking to experiences of Black women (Amos & Parmar, 1984). Moreover, arguments that focus on the masculinist foundations of science are often insufficient for topics of interest to Black researchers more generally (Hendrix, 2001). Concerns that the identities of Black and other ‘minority’ scholars can be selectively evoked in order to construct accusations of author bias (Avery, 2008; Hendrix, 2002; Kitzinger, Coyle, Wilkinson & Milton, 1998) question the degree to which scientific structures inherently favour men and disadvantage women, or can be applied selectively to favour particular social groups. Indeed, inequality in science that favours White people is not readily explained with reference to structures that privilege men, particularly when it considered that Black men can also be positioned at a disadvantage.

The solutions that critiques of organisational and scientific structures invite include altering structures, or in some cases, completely abandoning systems in favour of new ones. Engendering this kind of systemic change is inherently difficult. The organisations employing the systems must be willing to take responsibility for enacting changes. However, beyond this fact, the attribution of inequality primarily to structural causes may inadvertently legitimise inequality by devolving responsibility from the
individual in instances when behaviour can be adapted to support or challenge inequality. As a result, theories that conceptualise inequality as the automatic consequence of structures – be those organisational or scientific – may unwittingly conceal active or wilful ways in which people can produce inequality in academic psychology.

Automatic Consequence of Numerical Representation

Tokenism, (Kanter, 1977) attributes inequality to the under representation of the disadvantaged social group. As such, this theory frames inequality as an automatic consequence of the gender or racial composition of the environments people work in. This prediction suggests the solution to inequality is either to (a) reduce horizontal segregation to ensure professions are equally represented by employees belonging to different social groups or (b) to introduce “comparable worth” initiatives such that allow equal access to pay and work of equivalent worth (Reskin, 1988). With respect to gender, UK academic psychology appears to have met both criteria; women and men are relatively equally represented in the profession as a whole, and academic institutions employ meritocratic evaluative systems to provide universal measures of professional attainment. Nonetheless, vertical gender segregation persists.

A large body of research documents advantages for men who work in professions where they are the numerical majority, both in industry (see Reskin, 1988; Ott, 1989) and academia (see Rosser, 2004). However, several scholars have strongly contested the attribution of inequality to numerical underrepresentation of the disadvantaged group, namely because men also appear to accrue professional advantages in occupations that
are typical of women (Grimm and Stern, 1974; Kadushin, 1976; Reskin, 1988; Williams, 1992; Zimmer, 1988). Evidence that men maintain their position of privilege in occupations where they are ‘token’ members has given rise to controversy concerning the model of causality hypothesised by Tokenistic accounts of inequality. Whilst Tokenism (Kanter, 1977) predicts that underrepresentation leads to inequality, it has been argued that inequality can be the result of systematic discrimination (Cotter et al., 2001; Reskin, 1988; Williams, 1992; Zimmer, 1988).

Reskin (1988) suggested that the causal model that attributes inequality to numerical representation in fact provides a post-hoc justification for men’s privilege. Reskin based her analysis on theorising by Lieberson (1985, p. 185), who critiqued the common practice in causal analysis which distinguishes superficial causes that appear to give rise to an effect from basic causes that actually produce the outcome. Leiberson suggested a simple test for a causal model; does a change in the basic cause correspond with a change in the outcome? Citing evidence that showed the gender pay gap had failed to reduce at a rate equivalent to reductions in occupational gender segregation, Reskin (1988) argued that women’s underrepresentation was not a basic cause of inequality, because remedies focused on hiring more balanced ratios of women and men had been ineffective. Instead, Reskin (1988) suggested that the basic cause of gender inequality and women’s underrepresentation was the flexible and creative efforts of the dominant group to maintain the status quo. Accordingly, Reskin suggested that comparative worth measures would be eventually be circumvented by the social negotiation of skilled work, such that women would take on less valued roles. As such, Reskin predicted that
occupational gender inequality would persist once the ratio of women to men employed was no longer an issue, and after equal worth initiatives had been employed. Moreover, she predicted that other post-hoc explanations for inequality would eventually take their place (Reskin, 1988).

This hypothesis has significant implications for contemporary theories of inequality in academia. Presently, meritocratic systems (equivalent to comparable worth measures) are under considerable scrutiny as a source of occupational gender inequality. Ostensibly, women and men academics perform the same teaching, research and administrative roles. However women typically spend more time on teaching activities than men (Bellas & Toutkoushian, 1999; Park, 1996) and men devote a higher portion of time to research activities than women (Park, 1996). In this context, objective, meritocratic work evaluations could judge the work of women and men quite differently. Indeed, in light of the gendered allocation of academic work, inequality attributed to meritocratic systems that privilege men could in part arise from the social negotiation of work responsibilities rather than the systems of evaluation themselves.

In sum, theories that attribute inequality to automatic processes could provide post-hoc explanations that conceal the creative and active ways in which inequality is maintained. From this view, theories that describe inequality as an automatic or inevitable consequence of a ‘neutral’ or unmotivated condition and process – be that numerical representation, organisational structures or otherwise – could actively maintain existing power relations.

**Automatic consequence of being a privileged group member**
Theories that explain why some social groups experience privilege relative to others have focused on the failure of privileged group members to perceive social inequality. These theories are critical interventions, designed to make it clear to people that they have social advantages. Simone de Beauvoir (1949) argued that women, in being defined as alternate or Other to men, have no choice but to recognise the reciprocity the relationship. In contrast, men fail to recognise all human beings as unequal because they are both judge and party. In Beauvoir’s words:

It is difficult for men to measure the enormous extent of social discrimination that seems insignificant from the outside and whose moral and intellectual repercussions are so deep in woman that they appear to spring from an original nature. p. 15.

In a similar vein, McIntosh (1988) later discussed how Whites enjoy privilege because they have a vantage point which fails to acknowledge racial inequity. McIntosh listed conditions of her daily experience of White privilege, which she argued to be ostensibly neutral, normal, implicit and universal. Her theorising suggests that White people enjoy practical advantages precisely because they fail to notice that they are privileged relative to racialised groups. For example, the unseen, White conditions she listed included 1) “I am never asked to speak for all the people of my racial group”; 2) “If I declare there is a racial issue at hand, or there isn’t a racial issue at hand, my race will lend me more credibility for either position than a person of colour will have”; 3) “I can worry about racism without being seen as self-interested or self-seeking”.

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The theorising presented by Beauvoir and McIntosh suggest that inequities are maintained, in part, because they often go unnoticed by the privileged group. In modern contexts, egalitarian arguments are often employed to claim that inequality no longer exists. In such instances, it may be important to draw attention to the ways in which inequality persists. However, the construction of privileged group members as somehow ignorant or unconscious may have costs, particularly when it is considered how prejudiced people are able to perform discrimination and privilege in creative ways to capitalise on egalitarian thinking. With this in mind, prejudiced people could qualify discriminatory and privileging behaviours with ‘wilful ignorance’ regarding issues of inequality.

Some theories of discrimination suggest that discriminatory practices can be performed in subtle ways so that they may go ‘under the radar’ in modern social contexts. White people can harbour negative sentiment about racialised groups although they may wish to avoid being or appearing prejudiced (Moskowitz, Salomon, & Taylor, 2000; Plant & Devine, 1998; Dovidio & Gaertner, 2004). Research suggests that people belonging to privileged groups are able to construct themselves as egalitarian when they are in fact prejudiced and motivated to discriminate. For example, prejudiced White group members can selectively invoke egalitarian values and essentialist thinking to support the inclusion of ingroup members and exclusion of outgroup members (Morton, Hornsey, & Postmes, 2009). According to the aversive racism framework, people can appear to uphold egalitarian norms at the same time as enacting subtle forms of discrimination. So called ‘Aversive racists’ will for example discriminate when
behaviours are not clearly proscribed or the behaviour can be qualified as being unrelated to race (see Dovidio and Gaertner, 2004). Related constructs include *Ambivalent sexism* (Glick & Fiske, 1996) which describes the legitimisation of hostile sexism with benevolent sexist beliefs that appear ostensibly positive and affirming and *Modern Sexism* (Swim, Aikin, Hall, Hunter, 1995) which characterises subtle forms of sexism that are superficially consistent with modern egalitarian values. In sum, the construction of privileged group members as unaware of inequality and discriminating in passive ways may underestimate their capacity to creatively frame discriminatory behaviour so it may go unnoticed or unchallenged.

**Automatic cognitive process**

A number of theories suggest that people do not see privilege because the ‘Whiteness’ and ‘maleness’ of privileged groups goes unnoticed whilst the gender and race of disadvantaged groups is highly distinctive. For example Bem’s (1993) theory of androcentrism suggests that men form the norm from which women are seen to deviate, thus people focus attention on how women are particular. Norm theory (Kahneman & Miller, 1986) suggests that automatic processes of cognition pertaining to typicality render the attributes of privileged groups implicit because they represent the typical norm group. On the other hand, members of disadvantaged groups are marked as Other because their attributes are surprising in contrast to the norm and are therefore highly salient. This approach to explaining Othering suggests that White men who work in academic psychology may experience inequality that works in their favour because their Whiteness
and maleness is imperceptible, whilst women and Black people will automatically become the focus of attention by virtue of their non-typical status.

A large body of research supports the prediction that non-typical group members become the focus of attention. However, findings regarding the focus of attention in comparisons of privileged and disadvantaged group members for groups typical of oppressed groups have not been altogether consistent with norm theory predictions. When participants explain group differences for members of groups that are typical of privileged groups, oppressed group members usually become the focus of attention, which is consistent with norm theory predictions. However, when participants explain group differences between members of groups that are typical of oppressed groups, privileged and oppressed group members tend to become marked with equal frequency (for a review see Pratto, Hegarty & Korchmaros, 2007). For example, whilst Miller et al. (1991) found participants focused on women and failed to linguistically mark men in explanations of gender differences for the man-typical category of ‘college professor’, women and men were marked in explanations with near equal frequency for the woman-typical category of ‘elementary school teachers’ (Miller et al., 1991). Failure to completely mirror the linguistic marking observed in domains typical of the privileged group is also evident for groups that are typical of gay men (Hegarty & Pratto, 2001) and Black Americans (Pratto, Hegarty, Lemieux, & Glasford, 2005). Moreover, the focus of attention on the features of lower status groups and not higher status groups is not reproduced in all content domains (Bruckmüller et al., 2012; Hegarty, 2013). The results from these studies suggest that people could explain group members differently.
depending upon whether or not the group is typical of a privileged group or an oppressed
group. Collectively, these findings raise the possibility that attention to privileged and
disadvantaged groups may not occur automatically as a result of typicality.

Research by Sommers and Ellsworth (2001) motivates the hypothesis that
privileged groups may maintain their position of privilege even when their social group
membership is perceptible. Specifically, when social group membership is a known but
unmentioned background factor, evaluative decisions can favour privileged groups.
Sommers and Ellsworth (2001) conducted a study in which White and Black participants
read summaries of criminal trials involving interracial crimes with either a Black or
White defendant. Conditions and manipulation checks were included to ensure that
information about the race of defendants was processed and retained in all conditions (see
Sommers and Ellsworth, 2009). When the crimes were not described as racially
motivated, White participants were significantly more likely to vote to convict the Black
defendant than the White defendant. However, when the crimes were framed as racially
motivated, White participants were equally likely to vote to convict the Black and White
defendants. The authors concluded that making the relevance of race explicit in decision
making - rather than allowing race to remain an unmentioned but known background
factor - encourages individuals to curb otherwise implicit, stereotypic responses in favour
of fairer treatment.

The findings presented by Sommers and Ellsworth (2001) are somewhat
inconsistent with applications of norm theory (Kahneman & Miller, 1986). Norm theory
suggests that White people will be evaluated more favourably than Black people by
virtue of the fact White identities are implicit and Black identities are salient. However, the race of the White defendants was known and made prominent to the participants. As a result, the findings raise some doubt to the assumption that privileged group members accrue advantages by virtue of the fact their social group membership remains implicit. Indeed, discriminatory behaviours can sometimes be motivated by the maintenance of group boundaries (Allport, 1954), the need for inclusion with ingroups and differentiation from out groups (Brewer, 1991), the allocation of positive resources to ingroups (Tajfel, Billig, Bundy, & Flament, 1971) and the desire for positive distinctiveness (Tajfel & Turner 1986; Turner, 1975) which ingroups may seek to maintain or exaggerate (Mullen, Brown, & Smith, 1992).

Whilst norm theory predicts that norms embody attributes of typical groups, group projection describes a process through which idealised attributes of in-groups are projected onto larger categories inclusive of both in-groups and out-groups. This group is then treated as a ‘neutral’ standard from which out-groups are deemed deficient (Mummendey & Wenzel, 1999). The norm is thus said to represent the ideal member of that category. From this perspective, attention to group members would be ideological. For example, the decision to focus attention on the race of a Black researcher who conducts race research, and not the race of a White researcher who conducts race research could depend on whether or not the researchers are perceived to be ideal. As such, attention would be selective, rather than the automatic consequence of cognitive process pertaining to typicality. Significantly, if attention is selective rather than
automatic, then the attribution of inequality to processes of cognition could function to conceal some of the active ways that people can draw attention to race and gender.

To clarify, the evidence cited above does not motivate the hypothesis that the race or gender of privileged groups is always salient information, or that discriminatory behaviours are always motivated. However, it does suggest that privileged groups may in some instances maintain their position of privilege when their group membership is salient. Race and gender may become particularly perceptible when scholars conduct race and gender research, and the findings described above raise questions as to (a) whether the race and gender of white men researchers would be perceptible when they perform race and gender research, and (b) whether this would work to their advantage or their disadvantage. In short, there may be reasons to doubt the idea that inequality is governed by a universal process that renders the characteristics of privileged groups implicit and the characteristics of disadvantaged groups salient.

Summary

The previous section reviewed literature that conceptualises inequality as an automatic consequence of organisational and scientific structures, numerical representation, social group membership and cognition. Counter-evidence was presented which suggested that the attribution of inequality to automatic processes could both underestimate and disguise the active role people play in producing inequality in certain contexts. This counter-evidence raises four particular questions about how inequality an academic psychology ought to be conceptualised. Firstly, to what extent can
organisational meritocratic structures account for inequality in academic psychology on their own? Or, is there a need to consider also the impact of the gendered allocation of academic work? Second to what extent can scientific structures account for inequality in the evaluation of psychological research according to author gender and race? Third, to what extent can numerical representation account for vertical segregation? Finally, to what extent does attention to scholars who author gender and race research result from automatic processes of typicality and the failure to notice gender and race?

**Aims of the Thesis**

A brief review of some key literature suggests that two prevalent assumptions in inequality research may obscure means of effectively challenging inequality. Firstly, because inequality is conceptualised as the experience of group disadvantage relative to group privilege (such as the overrepresentation of men versus underrepresentation of women) group disadvantage and group privilege are usually conceptualised as being a consequence of the same mechanism. However, the present analysis suggests that in certain contexts, privilege and disadvantage may represent two, independent effects on inequality. Secondly, contemporary theories usually conceptualise inequality in modern contexts as the result of automatic mechanisms. On the other hand, the literature reviewed here suggests that these models may overestimate the extent to which inequality is inevitable. Instead, the inequality described by these theories could be attributed to active and selective behaviour.

This thesis aims to test these competing hypotheses by critically assessing the extent to which the theories presented in this chapter can explain inequality in UK
academic psychology. The chapter opened with a description of two ways in which inequality in academic psychology is apparent. These were vertical segregation, which locates more White men at the top of the academic hierarchy than women or Black people, and horizontal segregation which associates women and Black people with particular kinds of research that may be evaluated unfavourably. This thesis will assess the extent to which these inequalities can be explained by the assumption that the mechanisms leading to disadvantage and privilege are equivalent, and the assumption that inequality is the result of automatic or passive mechanisms.

**Thesis Structure and Overview of the Research**

This thesis presents a series of studies that move from the exploration of inequality in academic psychology at the level of the academic organisation (Chapters 2 and 3) to the social-cognitive level of research appraisal (Chapters 4 and 5). Each study is designed to provide critical tests for existing theories of inequality. The chapters all begin with reviews of the literature which present key theories and findings to contextualise the studies. The research chapters commence with two content-style analyses of online data of women and men employed as academics within UK and Irish psychology departments (Chapters 2 and 3). The analyses assess the extent to which vertical gender segregation can be conceptualised by occupational models of inequality that compare disadvantage to privilege and attribute inequality to organisational structures. Firstly, an analysis of the appointment of women and men to the managerial Head of Department role is presented (Chapter 2). A second analysis of the same data set explores patterns of privilege and disadvantage in the traditional academic career track by means of an analysis of the
representation of women and men in professorial and doctoral roles (Chapter 3). The thesis proceeds with experimental studies that explore people’s responses to fictional research vignettes. These experiments are designed to offer critical tests for social cognitive models of typicality and feminist postmodernist critiques of science (Chapters 4 and 5). Initially, studies are presented to explore how people respond to descriptions of research that are typical of women and men, and how written cues about the researcher’s gender can affect attention to the researcher and their research (Chapter 4). Two subsequent studies explore how verbal and visual cues about the gender and race of researchers can influence the application of the principle of ‘objectivity’ in accusations of author bias (Chapter 5). Finally, the thesis concludes with a synthesis of the research findings from Chapters 2-5 (Chapter 6). This closing chapter discusses the implications of the findings for theory that conceptualises privilege and disadvantage as interdependent, automatic outcomes of a universal process or condition, and for attempts to redress inequality in academia.
Chapter 2: The Appointment of Heads of Academic Psychology Departments and Department Characteristics

Abstract

Chapter 2 presents online data from 85 UK and Irish academic psychology departments to assess the relationship between the gender composition of departments and inequality in the appointment of women and men to the managerial Head of Department (HoD) role. Tokenism theory offers a ‘gender-neutral’ explanation for inequality, suggesting that the underrepresentation of women in high status managerial positions is attributable to their underrepresentation in a given workplace, organisation or profession (Tokenism, Kanter, 1977). This prediction - that minority members will be professionally disadvantaged - is also extended to men, for example in ‘female’ professions such as nursing. However, several theories, namely the glass escalator (Williams, 1992) glass ceiling (Cotter, Hermsen, Ovadia, & Vanneman, 2001) and glass cliff (Ryan & Haslam, 2005) suggest men gain professional advantages beyond what is attributable to the ratio of women to men employees. Contemporary accounts of inequality in academic management argue that the meritocratic systems of evaluation employed in universities lead to gender inequality such that the appointment of managers favours men. The analysis found academic psychology departments to be sites of gender inequity that privileged men HoDs which could not be explained solely by the numbers of women and men, either in academic psychology, or in the individual departments where meritocratic evaluations appeared to favour men HoDs. The results are discussed in relation to the extent to which
the appointment of women and men to HoD can be conceptualised as a universal indicator of privilege.

**Introduction**

Traditionally, academia has been viewed as quite distinct from professions in the private sector. During the 1960s, academic hierarchies recognised ‘knowledge work’ (including teaching and research), which was regulated from within universities where decision making fell to groups of academics and collegial communities (Deem, 2004). At this time, UK academics were largely autonomous in their activities. However, considerable growth in the UK higher education sector, coupled with public funding cuts and increased accountability for public funds, drove competition for students, research outputs and research funding. Government and university funding bodies rolled out ‘Modernisation’ initiatives - often referred to as ‘new managerialism’ - to deal with the new demands faced by public sector organisations (Deem, 2004). These promoted the implementation of idealised practices developed in the private sector, including overt management to monitor income, expenditure and academic performance (Deem, 2004). Meritocratic, universally applied performance and quality measures became widely implemented in order to monitor outputs and allow comparison across academics and institutions, resulting in ‘quasi-market’ conditions (Bartlett & Le Grand, 1993).

The amalgamation of new managerial practices with existing academic conventions means that academics will often hold managerial roles in addition to titles associated with traditional knowledge work. However, the marked change in management has raised concerns that traditional methods of departmental decision
making have become marginalised (Cowen, 1996; Dearlove, 1998; Deem, 2004; Johnson and Deem, 2003; Parker and Jary, 1994). Academic loyalty tends to be oriented towards the academic subject or discipline, not the interests of the university (Moodie & Eustace, 1974; Jarratt, 1985; Henkel, 2000) and managerial responsibilities, often regarded as secondary to knowledge work, are frequently resisted (Deem and Johnson, 2003).

The implementation of new managerial practices is associated with meritocratic outcome-based measures such as recent publications or student evaluation of teaching (Power, 1997). Considerable cuts in direct funding from public sources coincided with the 2012 fee cap at £9,000. Thus presently, universities’ investment plans are based around the fact that the main source of income comes either directly or indirectly from the students themselves (Universities UK, 2013). The main benchmark for administrative decisions regarding students is the annual National Student Survey (NSS). The publically available survey results indicate the percentage of students satisfied with their course, teaching and feedback and are used by administrators to compare UK universities and departments (Cheng & Marsh, 2008; Marsh & Cheng, 2010, Fielding, Dunleavy & Langan, 2010). Assessments of research quality known formerly as the Research Assessment Exercise (RAE, last published in 2008), and now the Research Excellence Framework (REF, to be published in late 2014) informs the allocation of direct government funding to institutions and influence decision-making by external funding bodies.

Contemporary HoDs face pressure to ensure that departments are commercially viable, and must be seen to balance student concerns with research activity as determined
by both the NSS and RAE outcomes. Academic heads, once typically regarded as leaders (Henkel, 2000) are now generally acknowledged as managers who must accommodate what are often conflicting managerial responsibilities (Knight and Trowler, 2001). The types of responsibilities held by HoDs tend to be similar, although recruitment of HoDs may occur within the university or externally (Deem, 2004; Johnson and Deem, 2003). Deem’s (2004) analysis of focus groups with academic HoDs from 16 science and social science departments, found a prevailing view that UK universities had shifted towards audit, rising student numbers, tensions between teaching and research, high staff workloads, resource shortage and devolved budgets. It is the role of the HoD to manage these competing institutional concerns.

A longstanding concern with the private sector management on which new managerialism is based, has been the overrepresentation of men as managers. Traditional conceptualisations of workplace inequality attribute the disparity to the limited numbers of women in industry. Tokenism (Kanter, 1977) for example, makes specific predictions about numerical representation and the emergence of workplace inequalities, claiming that any social group forming less than 15% of an organisation will necessarily be disadvantaged. Advantages are well documented for men who work in professions where they are the majority, both in industry (see Reskin, 1988; Ott, 1989) and academia (see Rosser, 2004). These advantages are accordingly assumed to extend to women working in professions underrepresented by men (Kanter, 1977; Jacobs, 1989). From this perspective, the women or men are most likely to be appointed to HoD in departments that hire a high proportion academics who belong to their gender category.
In psychology, however, women and men are relatively equally represented (see Wakeling, 2010 for the EU; Kohout & Pate II, 2013, for American Psychological Association membership; Boatswain et al. 2001 for Canada). The equal numbers of women and men in psychology today suggests there should be a fairly ‘level playing field’ when it comes to competition for high status positions in psychology. From a Tokenistic perspective, one would expect to see the HoD positions in academic psychology departments to be filled more or less equally by women and men.

Psychology is nonetheless characterised by vertical segregation, which locates men in high status roles and women in lower status roles (e.g. European Commission, 2012). There are in fact a number of theories that oppose Tokenism theory (Kanter, 1977). The major critique of tokenistic accounts pertains to the direction of causality asserted between inequality and numerical representation. Tokenism theory predicts that underrepresentation leads to discrimination, therefore the link between gender and inequality is incidental to horizontal gender segregation in the workforce. In contrast, it has been argued that the underrepresentation of women in the upper echelons of an organisation or profession can be the result of systematic discrimination (Cotter et al., 2001; Reskin, 1988; Williams, 1992; Zimmer, 1988).

Although tokenistic theorising predicts discrimination against men working in professions and organisations where women are the majority (Kanter, 1977; Jacobs, 1989) research exploring the progression of women and men in these domains was relatively limited. The shortage of literature prompted Williams (1992) to conduct interviews with women and men working in the ‘female’ professions of nursing,
elementary school teaching and librarianship. Contrary to predictions made by Tokenism, men generally had different experiences to women in professions overrepresented by men. In fact, men encountered structural advantages which tended to enhance their careers, such as leading to accelerated promotion. Williams (1992) named this implicit and accelerated progression for men the “glass escalator”. Contrary to Tokenistic accounts of inequality, the glass escalator effect suggests men could over represent the HoD role in psychology despite an equal gender distribution in the profession as a whole.

The ‘glass ceiling’ metaphor as defined by Cotter, et al. (2001) similarly predicts that the representation of men in high status positions will be over and above what can be explained by their general representation in a profession or workplace. In contrast to the glass escalator theory, which conceptualises inequality as the result of privilege afforded to men, the glass ceiling theory describes inequality as a result of discrimination against women. Managerial levels in Further Education (FE) Colleges also appear to exhibit glass ceiling effects. Whilst women are better represented as managers in FE colleges than they once were, they are located mostly in middle management and senior management remains overrepresented by men (Deem, Ozga & Prichard, 2010). By extension, the HoD role in academic psychology could also be overrepresented by men beyond what is attributable to their general representation in the profession or in a given academic department.

**Gendered Definitions of Management**

The challenges faced by women pursuing managerial careers have been attributed to cultural mismatches between stereotypes about women and stereotypes about leaders.
The agentic qualities (e.g., assertive, competitive) people believe are required by successful leaders have been identified as incompatible with communal qualities (e.g., kind, compassionate) people generally equate with women (Eagly & Carli, 2007). The ‘Think Manager-Think Male’ (TMTM, Schein, 1973) phenomenon describes how definitions of managerial success coincide with attributes stereotypically associated with men. In the early 1970’s, Schein showed that TMTM was a strong belief held by US middle managers (Schein, 1973; Schein, 1975) and research has replicated this finding globally (Schein, Mueller, Lituchy, & Liu, 1996). According to role congruity theory (Eagly & Karau, 2002) this representation of leadership poses a problem to women who may struggle to overcome preconceptions that they are ill equipped to lead and may struggle to gain access to managerial roles in the first place. If definitions of leadership in academic psychology represent a masculine dimension, then one could predict that women may be underrepresented as HoD, or those who work as HoD may be evaluated unfavourably.

The conflation of leadership with masculine characteristics is robust, but the effect has nevertheless declined over time and characterisations of leadership in certain contexts and occupational domains are now thought to be less masculine and may even incorporate more feminine qualities (for a review see Koenig, Eagly, Mitchell, & Ristikari, 2011). For example, ‘transformational’ leadership styles associated with ‘incentivisation’ with reward and the mentoring and empowering of subordinates tend to be employed by women leaders rather than by men leaders (Eagly, Johannesen-Schmidt,
& van Engen, 2003) and are more aligned with the gender roles women are expected to fulfil (Koenig, et al., 2011).

Role congruity theory (Eagly & Karau, 2002) suggests that occupational domains that are traditionally well-represented by women are particularly likely to associate leadership roles with more feminine, communal characteristics. The presence of women leaders can also influence whether or not people associate leadership with masculine characteristics. For example, implicit associations held by women studying in college which associate leadership qualities with men and communal qualities with women, are reduced when they have more women professors as role models (Dasgupta & Asgari, 2004). In addition, the leadership styles women manifest tend to be valued and are associated with successful organisational management (Eagly, 2007). Given that psychology is an occupation that is well represented by women, definitions of leadership could in fact favour the appointment of women to managerial roles, particularly in departments that employ a large ratio of women to men, whilst departments run by women may be viewed more favourably by their predominately ‘female’ student body than departments run by men.

Although modern definitions of management may include ‘feminine’ dimensions, some research suggests that the association of women with communal managerial styles may present limits to the types of managerial roles they can attain. Definitions of successful women managers incorporate individualised managerial practices which focus on the development and mentoring of followers and attend to individual needs (Vinkenburg, van Engen, Eagly, & Johannesen-Schmidt, 2011). However, this
managerial style is judged as less important for promotion to the most senior leadership role in an organisation than for other senior managerial roles, thus a leader emphasising individualised considerations may do better in reaching levels below the highest level of the hierarchy (Vinkenburg, et al., 2011). Women HoDs who perform this type of leadership in academic institutions may therefore be less likely to attain the most senior professorial roles. Ryan, Haslam, Hersby, and Bongiorno (2011) coined the “Think Crisis-Think Female” (TCTF) effect to describe how women were seen as suitable managers for failing organisations owing to assumptions that communal traits are needed in times of crisis and women can take the blame for organisational failure. The “glass cliff” effect (Ryan & Haslam, 2005) suggests that the appointment of a woman to precarious or risky managerial roles such as these can in turn hinder or ruin a woman’s career. Acker’s (2010) interview study with 31 women in managerial positions in universities in Canada, Australia and Britain reported that the managerial posts appointed to women could be precarious and lead to a spoiled career. The TCTF and glass cliff effects suggest the appointment of Women to HoD in psychology departments will occur in contexts that are more professionally ‘precarious’ than those to which men are appointed. From this perspective, men may not simply overrepresent the HOD role, but they may overrepresent particularly successful departments instead. Moreover, the appointment of women HoDs to less successful departments than men motivates the hypothesis that the precarious nature of their appointment may present barriers to their appointment to senior professorial positions.
Differences in the degree to which women and men hold gendered stereotypes about leaders suggest that the gender of HoDs could influence the occupational status of the women and men they manage. The HoD in modern academic departments could hypothetically influence the gender distribution of their departments to a modest degree; whilst not having full hiring and firing powers, HoDs can ‘encourage’ early retirement of staff perceived as performing poorly (Deem, 2004). Findings suggest that the TMTM stereotype is held predominantly by men (Brenner, Tomkiewicz & Schein, 1989; Schein, Müller & Jacobson, 1989) and to a greater degree than it is held by women (Schein et al., 1996). Thus the general overrepresentation of men as managers could exacerbate inequities in the appointment of women and men managers. To the extent that HoDs influence department decisions to maintain staff members, the TMTM effect suggests the appointment of men to HoD could also aid the progression of men to other high status leadership positions, such as professorships.

On the other hand, research which shows that women are more likely than men to employ transformational leadership styles which empower subordinates, suggests that departments managed by women may promote gender equality in the appointment of women and men to professors. That said, research that found that both women and men from American institutions are more likely to vote to hire a man academic than a woman academic with an identical record (Steinpreis et al., 1999) suggests that the overrepresentation of professors would occur under the management of both women and men. Moreover, the ‘queen bee’ effect predicts that women leaders implicitly legitimise rather than question the disadvantaged position of women in the workplace and
perpetuate inequality (Staines, Tavris, Jayaratne, 1974). Accordingly, women in high-powered academic appointments have been shown to hold stronger sexist ideologies than men in equivalent academic appointments, which has been interpreted as a barrier to women’s success in academia (Ellemers, van den Heuvel, de Gilder, Maass, & Bonvini, 2004). Through diverging routes, the TMTM and queen bee theories lead to the conclusion that men will have greater access to HoD managerial positions, and that men’s occupation of those roles may further the career of other men academics. Role congruity theory however suggests that women HoDs could engender equality in the career progression of their women and men employees.

‘Gendered’ Management in Universities

New managerial organisational cultures in UK universities have been critiqued for placing constraints on women entering academic management (Deem, 1998). The management employed in academic institutions has been described as being infused with notions of masculinities (Deem, 1998). The meritocratic systems of evaluation, such as the NSS and RAE, which must be employed by HoDs to manage departments, have accordingly come under considerable scrutiny as a possible basis for gender inequality in academic management (e.g. Deem, 1998; Deem & Johnson, 2003; Knights and Richards, 2003). Although meritocratic systems are intended to equalise opportunity in academia by providing standardised benchmarks of performance, they have been described as reflecting a definition of career success that privileges men (Deem 1998) and have been critiqued for discounting the differential life chances afforded to women and men (Acker, 2010).
The idea that definitions of academic management may privilege men aligns with arguments that attribute barriers to the success of women managers to gendered definitions of management. The new managerial role of the modern HoD, which requires difficult decisions to balance student and research concerns whilst working with devolved budgets (Deem, 2004), may represent a shift away from ‘soft’ (or transformative) systems of management usually associated with women managers (Deem, 1998). Alternatively, the gendered allocation of work may function to circumvent “comparative worth”, meritocratic systems that otherwise provide conditions for equal opportunity and access to equivalent roles (Reskin, 1988). Women HoDs may therefore have to enact managerial decisions in ways that are not aligned with their expected gender roles. In light of the literature reviewed above, the employees and students women manage may be less satisfied with this style of management when it is employed by women than when it is employed by men. Arguably, student satisfaction ratings as compiled by the NSS could favour management of psychology departments by men. At the same time, if communal managerial styles are regarded as inappropriate or are valued in times of crisis, then departments that are rated as less successful according to the NSS and RAE could be associated with the appointment of women HoDs. In addition, if the new managerial roles are harder to enact as a woman than as a man, gender stereotyping could create an uneven playing field whereby maintaining student satisfaction will be easier for a man than for a woman to do. In sum, new managerial critiques motivate the hypothesis that women will manage less successful departments than men.

The Present Study
This study looks at inequality in the appointment of women and men to the
cademic Head of Department (HoD) role in UK and Irish psychology departments. The
analyses test competing predictions regarding the progression of women and men to
academic managerial roles. By looking at how women and men are represented within
individual academic departments and across the departments as a whole, the study
assesses the extent to which theories of inequality in management can explain the
processes underlying gender inequality in the appointment of women and men to HoD
(see Figure 1).

The hypotheses are informed by competing theories as shown in Figure 1. The
glass ceiling and escalator theories predict that the representation of men will increase as
the career ladder is ascended, such that the appointment of men to HoD will exceed the
probability that they would attain that role given their overall representation. As the
managerial track is often regarded as secondary academic work (Deem & Johnson, 2003),
it is additionally hypothesised that men HoDs will have more chance of being a professor
than women HoDs. These hypotheses were tested at two levels of analysis. Firstly, the
appointment of women and men HoDs was assessed in relation to the gender distribution
of the sample as a whole. Secondly, appointment was assessed in relation to the gender
distribution of employees within the departments. Next, the competing Queen Bee and
TMTM hypotheses were tested to see whether predictions that the gender of HoD results
in the employment of more men in the high status academic professorial positions could
be supported. Specifically, it was hypothesised that men are more likely to be professors
than women. Finally, the Think Manager Think Female effect and critiques of new
managerialism motivated the hypothesis that the appointment of women and men to HOD will be associated with meritocratic performance measurements of the psychology departments, so that men are more likely than women to be appointed to manage successful departments as indicated by the RAE 2008 and NSS 2012. The hypotheses run counter to Tokenism on two main points. 1) It was predicted that men would be at an advantage irrespective of whether they were the numerical majority or not; 2) being at an ‘advantage’ was not conceptualised simply as attaining a particular role, but also the extent to which the context of appointment might benefit academics.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Process / basis of inequality</th>
<th>Effect predicted</th>
<th>Hypothesis extrapolated for present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokenism</td>
<td>Social groups that are the numerical majority are privileged and social groups that are the numerical minority are discriminated against</td>
<td>Men and women are more likely to be appointed to high status occupational roles when they are the numerical majority in a given workplace or profession</td>
<td>Women and Men are more likely to attain the HoD role in professions and within departments that employ a greater proportion of academics who belong to their gender category.</td>
</tr>
<tr>
<td>Glass Ceiling</td>
<td>Barriers to women’s progression occur independently of numerical gender representation</td>
<td>Inequalities exist whereby men are more likely to be in high status occupational roles than women and cannot be attributed to the numerical underrepresentation of women</td>
<td>As the career ladder is ascended, representation of men will be disproportionately incremental, specifically: 1. Men are more likely than women to be HoDs 2. Men HoDs will be more likely to be professors than women HoDs</td>
</tr>
<tr>
<td>Glass Escalator</td>
<td>Processes exist that privilege men in work domains where women are overrepresented in addition to domains where women are underrepresented.</td>
<td>Inequalities exist whereby men are more likely to be in high status occupational roles than women. Additionally, suggests that men could gain an especial advantage when they are the minority.</td>
<td>1. Men are more likely than women to be HoDs 2. Men will be particularly likely to be HoD in Departments with a higher ratio of women employees</td>
</tr>
<tr>
<td>Think Manager Think Male</td>
<td>The gender of the manager affects inequality</td>
<td>Men managers favour other men employees in their decisions to appoint roles</td>
<td>Psychology departments with men HoDs will employ the most men professors and the least women professors</td>
</tr>
<tr>
<td>Theory</td>
<td>Description</td>
<td>Example</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Queen Bee</td>
<td>Women managers discriminate against other women in their decisions. Women managers will do this even more than men managers do.</td>
<td>Psychology departments with women HoDs will employ most men professors and least women professors.</td>
<td></td>
</tr>
<tr>
<td>Role Congruity Theory</td>
<td>Women managers are likely to employ communal managerial styles that empower subordinates.</td>
<td>Psychology departments with women HoDs will employ most men professors and least women professors.</td>
<td></td>
</tr>
<tr>
<td>Think Female Think Crisis</td>
<td>When people think of successful managers they think of men, they think of unsuccessful managers they think of women.</td>
<td>Departments that score highly on success measures such as NSS and RAE will have Men HoDs, departments that score poorly on these measures will have women HoDs.</td>
<td></td>
</tr>
<tr>
<td>Glass Cliff</td>
<td>The TMTF effect whereby women are appointed to manage unsuccessful workplaces means that women managers are perceived as unsuccessful.</td>
<td>The career progression of women managers is hindered.</td>
<td></td>
</tr>
<tr>
<td>Critiques of ‘New Managerialism’</td>
<td>Institutional / professional structures favour men.</td>
<td>Universally applied managerial structures mean that inequalities that favour men are maintained.</td>
<td></td>
</tr>
</tbody>
</table>

![Figure 1](image.png)

*Figure 1.* Theories and hypotheses extrapolated.

**Method**

**Psychology Department Selection**

Data on 2365 psychology academics hired in psychology departments across 85 UK universities was collected (see Appendix A for a list of the academic institutions included in the analysis). Psychology departments were sourced by reference to an online database of links to psychology departments in Britain and Ireland maintained by Bangor University, and additionally, The Association of Heads of Psychology Departments online list of psychology departments and respective heads of psychology, maintained by
the Institute of Psychological Sciences at the University of Leeds. From these sources, a
list of psychology departments and schools was compiled for coding. Departments in
other areas of academia, hiring psychology staff and/or teaching psychology, were
excluded. Psychology departments that were combined with academic teaching and/or
enquiry outside the field of psychology were also excluded, e.g. a department of
psychology and sports science would not have met the inclusion criteria. A total of 85
academic departments met the inclusion criteria.

**Data Collection and Inclusion Criteria**

The data was collected from publically available online sources. Department web
pages on university websites were the primary source of data. Where available, online
staff lists organised by academic department were used as the basis for information on the
academic staff hired. Where staff lists by department were not available, data was coded
from staff lists organised by faculty or university. Academics’ web pages and associated
biographies on university websites were accessed when data was incomplete or missing
from staff lists. Additional data sources included academics’ personal websites and
pages, CVs uploaded for public access, biographies on non-university websites, LinkedIn
and social media such as Facebook and Twitter.

Academics included in the coding were appointed to one of the following ranks of
the academic career track - lecturer, senior lecturer, reader or professor (or equivalent
nomenclature). Staff members were coded according to their highest academic rank
rather than to administrative or management responsibilities. Heads of departments were
coded irrespective of their academic status. Emeritus staff, visiting staff, honorary staff,
research staff, teaching/tutoring staff, international campus staff and clinical staff members were not included in the data set. Academics without doctorates were also excluded. Where possible, the gender of academics was coded from the gendered pronouns used in academics’ personal webpages to avoid misgendering (Ansara, 2014). The gendered pronouns used in biographies presented on the university websites and details about individuals’ genders published in social media such as Facebook and Twitter were used as secondary sources. In the absence of typographical/textual information, photos accompanying either of the previous stated sources were used to code the presumed gender of the academics. Academics whose presumed gender could not be coded from these sources were emailed to request their gender identification. An academic’s gender was recorded as unspecified when no response was given. There were four cases when gender was coded as “unspecified”. All four cases represented academics appointed as “lecturers” and none were included in the final analysis.

**Variable Calculation**

For each member of academic staff working in the departments, the following three categorical variables were coded: Title (Professor = 1, Doctor = 2), Gender (Woman = 1, Man = 2) and Role (HoD = 1, Other = 0). A second data set was produced treating the psychology departments as the main unit of analysis. Seventeen variables were coded for each department. Nine variables represented the raw numbers of academics hired in each department for 1) total academics; 2) women academics; 3) men academics; 4) total professors; 5) women professors; 6) men professors; 7) total doctors; 8) women doctors; 9) men doctors. A further six variables were calculated to represent
the gender distribution in each department. Scores ranged between 0 -1 and low scores indicated low proportions and high scores indicated high proportions. The variables were the proportion of: 1) women that are professors; 2) professors that are women; 3) men that are professors; 4) doctors that are women (see Figure 2 for a schematic diagram illustrating the calculation of these proportions), 5) academics that were women; 6) academics that were professors. The final two variables were categorical and represented HoD Gender (Woman = 1, Man = 2) and HoD Title (Professor = 1, Doctor = 2).

For each department, variables were included to denote the Research Assessment Exercise 2008 (RAE) research quality classifications and the National Student Survey 2012 (NSS) ratings for student satisfaction. A total of seven RAE variables were produced. The first variable, RAE Entry, was categorical, indicating whether or not departments had been entered into the RAE 2008 (0 = Not Entered, 1 = Entered). As universities outside the UK are not entered into the exercise, three Irish universities were excluded from the RAE Entry variable. RAE Academics Submitted represented the proportion of academics submitted by the departments for inclusion in the exercise. A further five variables represented the percentage of research produced by each department that was classified by the RAE to fall within the following levels: 4-Star, 3-Star, 2-Star, 1-Star and Unclassified (where 4-Star indicates the percentage of research produced by the department at the highest quality level, and unclassified indicates the percentage of research produced at the lowest level). A high score on one of these variables indicates that a high percentage of research was deemed to be produced at each respective level. Three NSS variables were produced from the departments’ percentage
ratings for student satisfaction. These were percentage ratings for 1) Course Satisfaction, 2) Teaching Satisfaction, and 3) Feedback Satisfaction. Higher scores on these variables thus indicate greater satisfaction.

Descriptive statistics for all continuous department variables are shown in Table 1. All continuous variables were screened for normal distribution. Of the 24 variables, 10 met the assumptions for parametric data (see Table 1). Non parametric tests were used for variables that were not normally distributed unless otherwise stated.

Figure 2. Conceptual diagram showing the groups from which proportions were calculated: 1) proportion of women that are professors; 2) proportion of professors that are women; 3) proportion of men that are professors; 4) proportion of doctors that are women

Results

HoD gender and sample gender distribution

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Previous research suggests that women and men are equally numerically represented in academic psychology overall (European Commission, 2009; 2013). Tokenism (Kanter, 1977) predicts that this will translate to an equal representation of women and men in managerial HoD roles. However, the Glass escalator (Williams, 1992) and glass ceiling (Cotter et al., 2001) effects suggest that the frequency in the appointment of men to HoD can exceed the probability that they would be given those roles owing to their overall numerical representation in psychology.

Treating the individual academic as the main unit of analysis, a 2x2 Chi-Square analysis was conducted with Gender (Woman versus Man) and Role (HoD versus Other) as variables. Women and men were equally represented overall (49.4% and 50.6%, respectively), but men were more likely to be HoDs (62.4%, n = 53) than were women (37.6%, n = 32), $\chi^2(1, N = 2186) = 4.89, p = .027$. Based on the odds ratio, men were 1.65 times more likely to be a head of department than were women. This result supports the central premise of the glass ceiling and glass escalator effects, which suggest that men employees can be at an occupational advantage, even when they are not the numerical majority in a profession.

Managerial roles are reportedly considered secondary to traditional academic roles (Deem, 2004) thus appointment to a professorial title may be more prestigious than appointment to the HoD role. If this is the case, then the glass ceiling/escalator hypothesis suggests that women HoDs could have less chance of being a professor than men HoDs. Treating the departments as the unit of analysis, a 2x2 Chi-Square analysis with HoD Gender (Woman versus Man) and HoD Title (Professor versus Doctor) as variables tested
this hypothesis. One woman and one man were excluded from the analysis on the basis that they did not have doctorates and were unlikely to be appointed as professors.

This analysis showed a significant difference in the academic title of women and men HoDs, $\chi^2(1, N = 83) = 5.13, p = .024$. Whilst men HoDs were much more likely to be professors (73.1%) than not (26.9%), there was a more or less even split between women HoDs who were professors and those who were not (48.4% and 51.6%, respectively). Based on the odds ratio the result seems to represent the fact that men HoDs were 2.9 times more likely to be professors than were women HoDs.

In sum, the results support previous findings that overall, women and men are equally represented in academic psychology. However, counter to Tokenism (Kanter, 1977), the representation of men relative to women at the top of the career ladder was disproportionately high compared to the proportion of men relative to women in lower status positions. This was shown on two counts. Firstly, the proportion of HoDs that were men was greater than the proportion of other academics that were men. Secondly, the proportion of HoDs with professorial titles that were men was greater than the proportion of men HoDs who did not have professorial titles. Together, the results clearly support the glass escalator and glass ceiling predictions that the overrepresentation of men managers in higher status positions exceeds that which can be explained by their representation in psychology as profession as a whole.

**HoD Gender and Within-Department Characteristics**

Theories of occupational equality suggest that processes governing gender inequality can occur within a workplace in addition to operating across a profession as a
whole. As before, the competing Tokenism and glass escalator hypotheses were tested, this time treating the academic departments as the main unit of analysis.

To see if men or women would be more likely to be HoD in departments that employ more men or women academics overall, HoD Gender (Woman versus Man) was assessed in relation to the proportion of academics that were women in a department. A Mann-Whitney U test showed that the mean rank for departments with women HoDs (52.84) was higher than the mean rank for departments with men HoDs (37.06), $U(81) = 533.00, z = -2.86, p = .004$. The result indicates that women HoDs were more likely to lead departments with greater proportions of academics that were women, whilst men were more likely to lead departments with higher proportions of academics that were men. Contrary to the analysis at the level of the sample as a whole, this could be taken to support the Tokenism hypothesis that women and men are more likely to be HoDs in departments that employ greater proportions of academics belonging to their gender category.

The overrepresentation of men in professorial positions has been reported in the academic career track and in the managerial career track (European Commission, 2013). Different theories lead to different predictions regarding the association of the appointment of women and men HoDs with the appointment of women and men professors. TMTM theory (Schein, 1973) suggests that men in leadership positions will favour the appointment of men to other leadership positions, which suggests that the appointment of men to HoD will coincide with the appointment of men to professor. At the same time, role congruity theory (Eagly & Karau, 2002) suggests that women are
more likely to employ communal and transformative leadership styles that empower subordinates, which could lead women to take managerial decisions that engender a more equal distribution of the women and men they manage. In contrast, the queen bee effect suggests that women managers hold stronger sexist beliefs than men (Ellemers et al., 2004) thus men are likely to be appointed to professor most often in departments under the management of a woman HoD. A series of tests of difference were used to assess the relationship between HoD gender and the measures of the distribution of women and men working in the departments (see Table 2 for means and tests of difference).

Relationships between the staff distribution variables are shown in Table 3. The number of professors, the number of doctors and the proportion of staff that were professors were assessed respectively. The number of doctors in a department was unrelated to HoD gender, \( p > .94 \). However, the mean ranks for the number of professors showed that men HoDs managed departments with more professors (47.95) than did women HoDs (34.80), \( U(81) = 585.00, z = -2.39, p = .017 \). The ranking of the scores for the proportion of academics that were professors similarly showed that the mean rank for departments with men HoDs (48.17) was higher than the mean rank for departments with women HoDs (34.44), \( U(81) = 574.00, z = -2.49, p = .013 \). Together, these results showed that men were more likely than women to manage departments with high numbers of professors overall, and departments with more professors relative to academics in other positions. These effects occurred irrespective of the department’s size.

Next the proportion of professors in a department that were women was assessed. The mean rank for departments with men HoDs (32.86) was less than the mean rank for
departments with women HoDs (45.46), $U(71) = 385.00, z = -2.40, p = .017$. This indicated that men HoDs were more likely to work in departments with more men professors relative to women professors, and women were more likely to work in departments with more women professors relative to men professors. Nevertheless, whilst departments led by men did employ a lower proportion of women professors than men professors on average ($M = .27, SD = .26$) so too did departments led by women ($M = .41, SD = .21$).

The mean ranks for the number of men professors employed showed that departments with men HoDs employed more men professors (48.91) than departments led by women (33.22), $U(81) = 535.00, z = -2.86, p = .004$. However, the number of women professors employed in a department was not related to HoD gender, $p > .41$. As such, departments managed by men employed more men professors than departments led by women, but the number of women professors employed in a department was unrelated to HoD gender.

This result coincided with the analyses for the proportion of women that were professors, and the proportion of men that were professors. The mean rank for the proportion of men that were professors was significantly greater for departments with men HoDs (48.72) than departments with women HoDs (33.53), $U(81) = 545.50, z = -2.76, p = .006$. By contrast, the mean ranks for the proportion of women that were professors were not significantly different for departments with men HoDs (41.38) versus departments with women HoDs (43.98), $U(81) = 796.50, z = -.48, p = .633$. Thus, whilst the men employed in a given department were more likely to have a professorial title in
departments managed by men, whether or not the women in a given department were
doctors or professors was unrelated to HoD gender. This indicated that professors were
more likely to be men than to be women irrespective of HoD gender, although women
HoDs did manage departments with relatively lower proportion of professors that were
men compared to departments managed by men HoDS.

Finally, the number of women doctors, number of men doctors, and proportion of
doctors that were women were assessed. Although the mean rank for the proportion of
women that were doctors was higher for departments led by women (48.69) than those
led by men (39.57) this difference did not reach significance $U(81) = 666.00, z = -1.65, p = .099$. All other tests were non-significant, all $p > .31$. As such, the representation of
women and men doctors appeared to be unrelated to HoD gender.

Overall, the numerical representation of professors, but not doctors, was related to
HoD gender. Men-managed departments employed more men professors, more men
professors relative to women professors, and employed larger proportions of their men
academics as professors than did women-led departments. Women-led departments were
more likely to employ a higher proportion of women professors, but men remained
overrepresented among professors in those departments too. However, the women
managed departments were no more or less likely to employ their women academics as
either doctors or professors, even though departments managed by men employed larger
proportions of their men academics as professors. Together, the results suggest that the
representation of men professors in men-led departments is disproportionately high
relative to their representation as doctors but women were not at any additional
disadvantage or advantage when it came to being appointed as professors when they were managed by either women or men.

The results align with the hypothesis motivated by TMTM theory (Schein, 1973) which suggested that men managed by men would accrue occupational advantages that lead to their increased appointment to professor. Generally speaking, the results were consistent the predictions informed by role congruity theory (Eagly & Karau, 2002) which suggested that the leadership styles typically employed by women would be communal and could thus be associated with greater equality in the rates at which women and men are appointed to high status positions as compared to departments managed by men. However, the results did not provide especially compelling support for the role congruity theory hypothesis on the whole, as the overrepresentation of men as professors persisted in departments led by women, whilst the women managed by women HoDs were not at any particular advantage relative to the women managed by men. The results clearly ran counter to predictions based on research on the Queen Bee effect in academia (Ellemers et al., 2004) which suggested that women would experience particular promotional barriers to the appointment to professor when they were managed by women HoDs.
HoD gender and the NSS 2012 and RAE 2008

An implicit assumption in some theories about occupational inequality is that high status jobs are universal indicators of privilege for women and men alike (e.g. TMTM, Schein 1973; and Tokenism, Kanter, 1977). Meritocratic evaluations of academic attainment are accordingly implemented under the assumption that the work performed by women and men is equivalent and can be evaluated using universal measures of attainment (Acker, 2010). However, critiques of new managerialism suggest that practices such as these are infused with masculinities which privilege men academic managers (Deaam, 1998). The TCTF (Ryan et al., 2011) and glass cliff (Ryan & Haslam, 2005) theories and findings which show that less importance is placed on styles of management associated with women than those associated with men (Vinkenburg et al., 2011) suggest that the seeming parity in the appointment of men and women to HoD roles could be false, predicting instead that men will manage departments that are more successful than those managed by women. Treating the NSS 2012 and RAE 2008 as measures of psychology department success, the following analyses assessed whether men HoDs led more successful psychology departments than women HoDs.

A total of three Irish departments were excluded from this analysis as the RAE 2008 and NSS 2012 were conducted with UK universities only. The three NSS variables were 1) Course Satisfaction, 2) Teaching Satisfaction, 3) Feedback Satisfaction. Results for the NSS were available for 73 of the departments in the data set. The six RAE variables were the number of 1) Academics Submitted, and percentage of 2) 4-Star Research, 3) 3-Star Research, 4) 2-Star Research, 5) 1- Star Research and 6) Unclassified
Research. The RAE measures data was available for 62 of the departments in the data set. Data for both the RAE and NSS was available for 58 of the departments. None of the RAE measures were significantly related to the NSS measures, although there was one marginal positive correlation between Teaching Satisfaction and Academics Submitted, \( r_s(56) = .25, p = .059 \), indicating that as ratings for student teaching satisfaction increased, so did the number of academics submitted for inclusion in the RAE 2008. All other relationships were non-significant, \( p > .11 \). (See Table 4 for correlations).

**NSS 2012.** The NSS variables were strongly positively associated (See Table 4) as follows: Course Satisfaction and Teaching Satisfaction, \( r_s(71) = .77, p < .001 \); Course Satisfaction and Feedback Satisfaction, \( r_s(71) = .51, p < 001 \); and Feedback Satisfaction and Teaching Satisfaction, \( r_s(71) = .44, p < 001 \).

Three Mann-Whitney U tests were used to test the hypothesis that departments with men HoDs would score higher on the NSS measures than departments with women HoDs. The mean rank for Course Satisfaction was greater for departments lead by men head of departments (41.36) than those lead by women head of departments (29.57), \( U(71) = 420.50, z = -2.30, p = .022 \). Similarly, the ranking for Teaching Satisfaction was higher for departments with men HoDs (40.90) than women HoDs (30.35), \( U(71) = 441.50, z = -2.06, p = .040 \). There was a non-significant trend for higher Feedback Satisfaction in departments with men HoDs (39.71) than in departments with women HoDs (32.39), \( U(71) = 496.5, z = -1.42, p = .154 \). In conclusion, men were more likely to work as HoD in departments with higher NSS ratings for Course Satisfaction and Teaching Satisfaction.
The RAE 2008 variables were assessed next. The correlations between the RAE variables indicated that 4-Star Research and 3-Star Research were significantly positively correlated, $r_s(60) = .85$, $p < .001$, and were both negatively correlated with 2-Star Research, 1-Star Research, and Unclassified Research, all $p < .04$. Academics Submitted was significantly positively correlated with 4-Star Research, $r_s(60) = .39$, $p = .002$, and 3-star, $r(60) = .42$, $p = .001$ and significantly negatively correlated with 1-Star Research, $r_s(60) = -.34$, $p = .007$ and Unclassified Research, $r_s(60) = -.43$, $p = .001$. This suggests that as more academics are submitted by the department for inclusion in the RAE, the percentage of research rated as low quality decreases (see Table 4).

Firstly, a 2x2 Chi-Square analysis was conducted with HoD Gender (Woman versus Man) and RAE Entry (Not Entered versus Entered) as variables to test the hypothesis that departments led by men were more likely to be entered into the RAE 2008 than departments led by women. Men HoDs were marginally more likely to lead departments entered into the RAE (82.4%) than were women (64.5%), $\chi^2 (1, N = 82) = 3.33$, $p = .068$. Based on the odds ratio, departments lead by men were 2.57 times more likely to be entered into the RAE 2008 than were departments led by women. A second chi-square assessed whether HoD title (Professor versus Other) was related to whether or not departments were entered into the RAE 2008. HoDs with professorial titles were more likely to have entered their departments into the exercise (83.0%) than HoDs without a professorial title (59.3%), $\chi^2 (1, N = 82) = 5.37$, $p = .020$. The odds ratio indicated that departments led by HoDs with a professorial title were 3.36 times more likely to be
entered into the RAE 2008 than departments led by HoDs who were doctors or had no title.

The Mann-Whitney U tests for the five RAE measures for departments led by men HoDs versus those led by women HoDs were non-significant, all \( p > .44 \). However, the mean rank for the number of Academics Submitted was greater for departments lead by men (35.37) than those lead by women (23.38), \( U(60) = 257.50, z = -2.45, p = .014 \).

In sum, departments that submitted more academics for inclusion in the RAE 2008 were more likely to be led by men HoDs, and such departments produced less research of the lowest quality ratings. However, psychology department RAE 2008 overall research ratings were not related to head of department gender. In contrast, the NSS student satisfaction ratings were associated with HoD gender, with men HoDs leading departments with higher NSS ratings for Course Satisfaction and Teaching Satisfaction. These results provide support for the “Think Crisis-Think Female” hypothesis that the appointment of women and men to HoD is context dependent and moreover, that men HoDs likely to be appointed in departments that are relatively more successful than those to which women HoDs are appointed.

**Appointment to Professor as a ‘Glass Cliff’**

The glass cliff predicts that the appointment of women to precarious managerial roles can lead to a spoiled career. The analyses found that HoDs were underrepresented by women with professorial titles and overrepresented by men with professorial titles. Given that the managerial track is often regarded as secondary to the academic track (Deem, 2004) being a HoD in departments perceived as unsuccessful could hinder
opportunities for women HoDs to gain professorial titles. It was therefore assessed whether the underrepresentation of women HoDs as professors was related to low scores on the NSS 2012 and thus indicative of a ‘glass cliff’ effect.

Two by two independent ANOVAs were conducted with HoD Gender (Woman versus Man) and HoD Title (Professor versus Doctor) as IVs, and NSS Course Satisfaction and Teaching Satisfaction as DVs. In line with previous analyses, there was a significant effect for HoD Gender on Course Satisfaction, $F(1,67) = 5.75, p = .019$, and Teaching Satisfaction, $F(1,67) = 4.11, p = .047$. The main effects for HoD Title and the interaction terms between HoD Title and HoD Gender were non-significant in both instances, all $p > .59$. The results indicate that the underrepresentation of women HoDs as professors was not related to department NSS scores. Accordingly, the associations between HoD Title and the other NSS and RAE measures were all non-significant, all $p < .15$.

**Discussion**

This study found UK and Irish academic psychology departments to be a site of gender inequality in the appointment of managerial HoDs that was not attributable solely to the gender-neutral, universal effects of numerical representation. Instead, the results showed that the representation of men as HoDs exceeded the probability that men would attain that role given the general gender distribution of academics across the departments. Men HoDs were also more likely than women HoDs to have professorial titles and tended to manage larger departments with more professors, more academics whose research activity was recognised by the RAE 2008, and higher ratings on the NSS. The association
of HoD gender with academic progression to professor and a number of contextual factors suggest that the context of appointment to HoD is not equivalent for women and men.

The results showed that the numerical representation of women and men across the sampled academic psychology departments was more or less equal overall. However, this seeming parity was characterised by gender segregation that located mostly men in the HoD roles, and saw more of those men with professorial titles than their women counterparts. The likelihood that men were HoDs, and were HoDs with professorial titles, exceeded the probability that they would hold both high status managerial and academic positions owing to their numbers in the profession alone. This result clearly supports the hypothesis motivated by the glass escalator (Williams, 1992) and glass ceiling (Cotter et al., 2001) effects, that men would attain the majority of HoD managerial positions in academic psychology, even though they are not the numerical majority.

The results from the within-department analysis run counter to Tokenism’s (Kanter, 1977) premise that underrepresentation is a necessary precursor to gender inequity. That said, analysis of the distribution of academics between the individual psychology departments revealed that the Tokenistic link between numerical representation and appointment of managerial roles is not altogether misplaced. In fact, women and men were more likely to be HoDs in departments that employed greater proportions of academics belonging to their gender category. It would seem that although men were more likely to be HoDs overall, women had a somewhat better chance of being
appointed to HoDs when members of their gender category were better represented in a given department.

Both women and men manage departments with more professors belonging to their gender category relative to those who did not. However, men were still overrepresented as professors in departments managed by women, although to a lesser degree. Nonetheless, the analysis revealed that this was not a simple association. The gender distribution of the departments’ professoriate revealed a more complex story. Both men-managed and women-managed departments employed more professors belonging to their gender category relative to the number of professors who did not belong to their gender category. However, men managed departments with more academics, more men overall, and more men professors whilst departments led by men employed larger portions of their men academics as professors, neither women-led nor men-led departments were more or less likely to employ their women academics as either doctors or professors. As a result, the representation of women in professorial positions in departments was proportionate to their representation as doctors, but the representation of men in professorial positions was disproportionately high in departments led by men.

In Chapter 1, it was argued that processes that privilege men could exert an independent influence on inequality in academic psychology. The theoretical nuances in the glass cliff and glass escalator effects, which respectively attribute occupational gender inequality to discrimination against women and to the privileging of men, are relevant to the present findings. Whilst certain departments were particularly likely to appoint their men to high status managerial and academic professorial positions, the academic roles
performed by women in a given department bare little relation to whether or not a woman was also HoD. Thus, in the case of this particular inequity, the processes at play appeared resemble a glass escalator effect (Williams, 1992) that privileged men who were managed by a man. They seem less compatible with barriers to women’s progression as otherwise predicted by the glass ceiling (Cotter et al., 2001).

The effect whereby men working in departments managed by men were most likely to be professors is also broadly consistent with the TMTM theory (Schein, 1973). Proponents of the TMTM effect have argued that appointing men to managerial positions will exacerbate gender inequality, as men typically prefer to appoint other men to other managerial roles. By extension - and assuming the influence of HoDs in decisions of academic appointment - the results could hypothetically reflect a preference for the appointment of men to professor by men in HoD roles. At the same time no support was offered for the Queen Bee hypothesis that women in academic departments face especial discrimination from women in high-powered academic positions (see Ellemers et al., 2004).

Whilst being able to ‘encourage’ early retirement of underperforming academics, HoDs do not have the full hiring and firing powers (Deem, 2004). As such, the representation of men professors in departments managed by men HoDs could likewise reflect a general preference for the appointment of men to high status positions by the departments or academic institutions. Indeed, the analysis revealed that HoD gender was associated with a number of departmental characteristics, indicating that the departments typically managed by men generally differed to those managed by women.
An implicit assumption in Tokenism theory is that the conditions that engender the appointment of either women or men to managers are equivalent. The results generated several reasons to doubt this assumption. Firstly, the distribution of the professoriate varied according to HoD gender. Beyond the fact that women and men managed departments with more academics belonging to their gender category, men also managed larger departments with more professors than women. Secondly, the level of research activity in departments appeared to differ. In light of the distribution of academics in the departments, it is perhaps unsurprising that the departments led by men were more likely to have been entered into the RAE 2008, and - out of the departments entered into the exercise - submitted more of their academics for inclusion than departments led by women. The RAE 2008 research quality ratings themselves were not however significantly better for departments led by men, although departments that submitted more of their academics into the exercise did produce less research of the lowest quality ratings. Finally, men HoDs led departments with higher NSS student satisfaction ratings for Course Satisfaction and Teaching Satisfaction than did women HoDs. In sum, men managed larger departments with more professors, greater research activity as recognised by the RAE 2008, and students that were relatively happier with the taught psychology courses than in the departments managed by women.

Variation in the types of department where women and men HoDs worked suggests that departments where women HoDs were employed are likely to be less prestigious or commercially viable than those managed by men. Central responsibilities of the HoD are to balance research and teaching and increase student numbers (Deem,
2004), thus it is likely to be disadvantageous to manage departments that could be construed as producing nominal quality research and providing poorly received courses. The findings support the central premise of the “think crisis, think female” theory (Ryan et al., 2011), which suggests that the HoD roles to which women were appointed are more precarious whilst the roles to which men are appointed afford more advantages. As Ryan & Haslam (2005) suggests, the appointment of women to managerial roles is not necessarily representative of a shift toward the acknowledgment of women’s leadership ability, but may represent the idea that women are suitable to take the blame for organisational failure. From the point of view of an institution which gauges department success from RAE and NSS scores, the men HoDs in the present analysis could be perceived as more successful than would the women HoDs.

The glass cliff additionally predicts that the appointment of women to precarious academic managerial positions can lead to a spoiled career (Deem, 2004; Ryan & Haslam, 2005). Whilst the effect whereby women HoDs were less likely to be professors than men HoDs was hypothesised as a possible glass cliff effect, academic titles appointed to HoDs were unrelated to the NSS or RAE 2008 scores. Alternatively, the result whereby women were less likely to be appointed to professors than men HoDs could be indicative of findings which suggest that women may struggle to reach the most senior leadership positions because less importance is placed on the managerial styles they employ (Vinkenburg et al., 2011). Indeed, the fact that departments managed by women were evaluated less favourably according to the NSS could represent an incompatibility of new managerial systems with managerial styles associated with
women (Deem, 1996). However, the RAE and NSS results did not give any indication that such an incompatibility provides the basis for the underrepresentation of women HoDs as professors. Overall, the effect whereby women HoDs were less likely to be professors seemed to be related to factors beyond their perceived managerial attainment, as might be gleaned from NSS and RAE department scores.

There are some alternative explanations for the lack of association between research quality measures and the HoD’s promotion to professor. Principally, both the RAE 2008 and NSS scores can only provide indirect measures of success. Whilst they can be used to inform the possible basis of observed gender inequities, it cannot be guaranteed that they are directly related to hiring decisions. The available RAE 2008 scores also represent fulltime HE1 staff employed on the October 2007 census date, thus precede the data collection for the present study by 6 years. It is likely that a department’s historic research activities may not heavily influence decisions about current HoDs. In contrast to the NSS results which represented the student cohort from the academic year preceding data collection, the RAE results may be less likely to influence institutional decisions about the HoD acting at the time of data collection. Of course, depending on whether the HoD documented in the data was acting at the time of the RAE 2008 and NSS, the extent to which the results reflect the context of appointment versus the manager’s perceived performance may vary. As men were more likely to manage departments that had submitted more academics into the RAE 2008, for which entries were made seven years previously, the difference between the number of academics producing officially recognised research could pre-exist many of the heads acting at the
point of data collection. A longitudinal study of department vertical gender segregation and consecutive RAE and NSS evaluations may elucidate this issue.

Another possible explanation is that the managerial and academic career trajectories diverge. The decisions to promote an employee to an academic position may be informed by performance measures that differ from those informing decisions to promote an employee to a managerial role. For example, it would make sense that the HoD’s own research outputs influence an institution’s decision to grant them an academic title, in addition to the perceived attainment of the department they manage.

Hypothetically, the realisation ‘managerial’ responsibilities, such as raising student numbers and managing course provisions may have a greater influence decisions to promote employees to managerial roles.

The possibility that the route to the managerial HoD role and the academic professorial title follow separate trajectories is consistent with the idea that new managerial practices are somewhat distinct from traditional academic work. The NSS measures that present meritocratic measures of department performance associated with new managerial practices appeared to privilege men HoDs, but not their progression to professor. Indeed, the effect whereby men HoDs were also more likely to be professors than women HoDs would appear to be related to factors other than those associated with the appointment of Hod. Accordingly, the appointment of men in a department to HoD and professors were related, whilst the appointment of women in a department to HoD and professors were not, suggests that the association of appointment of staff members to professor and HoD are not necessarily related.
In conclusion, the trajectory to managerial HoD could not be explained solely by the numerical representation of women and men in psychology departments, but was instead related to contextual factors such as meritocratic measures of department attainment. In contrast to predictions informed by Tokenism, men were generally more likely to be appointed to high status managerial roles, although this effect was somewhat diminished in departments with more women. However, the effect whereby women were appointed to HoD in departments with more women than men may only be ostensibly advantageous, as the departments managed by women are less likely to be evaluated as successful. Inequalities appeared to emerge because some departments were particularly likely to privilege men by appointing them both to HoD and to professorships, whilst the under-appointment of women to professor was consistent across departments managed by women and men.

In the following chapter, the analysis is shifted from the managerial career track to the traditional academic career track to critically evaluate why women are also underrepresented at the most senior academic rank of professor. The academic career track uses an old and established hierarchy of appointments which precede the managerial practices associated with academia today. Unlike modern academic leads, whose managerial responsibilities have been generally conceptualised according to models designed to explain inequality associated with private sector management, the academic role is still characterised by the teaching and research traditionally associated with academic work. Nonetheless, the evaluation of this ‘knowledge work’ in psychology departments now occurs within the new managerial context, at a time when the gender
composition of the discipline has shifted considerably and the numerical representation of women and men in the discipline is a salient concern. Chapter 3 critically assesses the processes of privilege and disadvantage that lead to gender inequality in the appointment of academics to professor within the context of the modern academic psychology department
Chapter 3: The Appointment of Men and Women to Professor in Academic Psychology Departments

Abstract

This chapter continues from Chapter 2 by assessing vertical gender segregation in UK and Irish academic psychology departments (n = 2263). The analysis in this chapter focuses on the hierarchy of the traditional academic career track, which is here defined as the distribution of academics with the title of either Doctor or Professor. The study provides a critical test for the glass escalator effect (Williams, 1992) which suggests that men can gain enhanced promotional advantages when they are the numerical minority.

The department ratings for the Research Assessment Exercise 2012 and National Student Survey 2008 are explored as a possible basis for inequality in the appointment of women and men to professor. Men were overrepresented as professors although women and men academics were equally represented overall and ‘glass escalator’ effects appeared to enhance men’s appointment to professor as the number of men working in a department relative to women decreased. Results are discussed in relation to the extent which vertical gender segregation can be attributed to numerical representation and meritocratic systems of evaluation, and the degree to which vertical segregation is attributable to processes that privilege men and processes that disadvantage women.
Introduction

Universities in the UK use an old, established hierarchy of appointments which traditionally denote the rank of academics working in the teaching and research pathway. The appointment to professor is usually reserved for the most senior of academics, whilst other academics are generally called lecturers, senior lecturers and readers. Professorships will be established by the university to meet the institution’s needs for academic leadership and standing in an area or discipline, or to recognise the achievement and standing of an individual academic.

Historically, women have been underrepresented at all levels of the academic hierarchy in all academic disciplines. Britain and Ireland’s historic and most prestigious universities began to officially open their doors to women in the early 1900s. However, these institutions continued to impose restrictions on the decision making roles women staff could hold until the late 1960s and 1970s. Accordingly, men were the predominant recipients of the prestigious title of professor. In 1972 there were just 61 women professors in Britain (Rendel, 1984). Between 1988 and 1989 there were 140, with 96.9% of professors being men (Aker, 1992).

Today, psychology is well known as an academic discipline to which women have good access, which distinguishes it from many other scientific disciplines where the overrepresentation of men at all levels of the academic hierarchy persists (Rosser, 2004). However, concerns regarding the predominance of women academics in psychology suggest that the present gender composition of psychology could reflect a shift in gender inequality that restricts men’s access discipline. In 2011, Cassandra Willyard’s article
“Men: A Growing Minority?” made the cover story for the American Psychological Association (APA) *GradPSYCH Magazine*, which aims to “provide psychology graduate students with cutting-edge information on innovative psychology careers; financial information, training and supervision; graduate student lifestyle issues; and emerging trends in psychology practice, research and education”. The article noted the increase of women studying in psychology and questioned what this meant for the future of the field. The article represented views that suggested the perspective of men in psychology may be wanting, and that men students may experience marginalisation, such as social exclusion and being expected to speak on behalf of members of their own gender. The article acknowledged some potential advantages for men working in psychology, including the demand for men employees, but advocated increasing the number of men in psychology to make it “the most robust profession it can be”. The thinking which equates disadvantage with underrepresentation in this article mirrors tokenistic account of inequality, and suggests that women and men will be similarly disadvantaged when they are a numerical minority (Tokenism, Kanter, 1977).

Although women represent the majority of psychology’s academics, women continue to be vastly underrepresented at the top end of the academic hierarchy, particularly as professors (European Commission, 2011). In fact, rather than being evenly distributed throughout the discipline, women are generally best represented in lower status appointments. This gender distribution is clearly discordant with the tokenistic view which equates underrepresentation in high status academic appointments with underrepresentation at all levels of the hierarchy.
Feminist scholars have generated reasons to doubt the applicability of tokenistic accounts of inequality to psychology. During the 1990s and 1980s, many feminist scholars drew attention to the academic achievements of women that had been previously marginalised, overwritten or denied altogether. Although many women were able to become successful scientists, substantive contributions were often marginalised and forgotten (Morawski & Argonick, 1991). Whilst men are usually regarded as the most notable figures of scientific achievement, instances when the achievements of women had been underwritten abound throughout history (Rossiter, 1993). Rossiter in particular examined the work and life of the 19th century American feminist Matilda Gage (1826-98), who at the time was little known for her achievements which had been negated and denied. Gage, amongst other things, noted the attribution of women’s inventions to men and the lack of credit given to women in Christianity. Rossiter critiqued the popularised “Mathew effect” (Merton, 1968) which encapsulated the Gospel according to Mathew, and had been used chiefly to support the over recognition of prominent scientists: “For whomsoever hath, to him shall be given, and he shall have more abundance; but whomsoever hath not, from him shall be taken away even that he hath.” (Mathew, 13:12). The most prominent scientists were usually men, and scholars who applied the Mathew effect paid little heed to the commonplace under recognition of women. Rossiter coined the “Matilda effect” to capture the contrasting experience of her eponymous Matilda Gage who

…was aware of, and denounced the tendency of men to prohibit women from reaping the fruits of their own toil and in fact noticed that the more woman
worked the more the men around her profited and the less credit she got. p. 336 (Rossiter, 1993).

The Matilda effect makes the point that the women represented in science were not given proper credit for their work. In other words, the academic standing of women was not a simple consequence of numerical underrepresentation, but the result of the systematic marginalisation of their academic contributions.

Statistics that document the historic gender composition of psychology likewise show that women’s underrepresentation as professors far exceeded their underrepresentation at other levels of the hierarchy. In Great Britain between 1988 and 1989, women made up about 19% of academics, however only 1.6 % or women academics were professors as compared to 11.3 % of men academics (Aker, 1992). Interestingly, a persistent finding in the research literature circa the 1970’s was that women fared better in terms of rank, promotion, salary, and tenure in the natural sciences than in the social sciences and humanities, although they worked in the natural sciences in the fewest numbers (Cole, 1979). A study of faculty members at an Israeli university published in 1987 found that women were in fact better represented at the top end of the hierarchy when they worked in scientific fields employing the smaller proportions of academics that were women. Women were better represented in the humanities than in the natural sciences, thus their representation at the top of the hierarchy relative to men was actually smallest in these fields (Toren & Kraus, 1987). Together, these historic accounts of psychology’s gender composition suggest that women’s underrepresentation
as professors today might be attributable to causes beyond the numerical representation of women and men in the field as a whole.

Some scholars have challenged dominant tokenistic thinking and argued that numerically underrepresented men have greater opportunities to advance professionally than do their well represented women colleagues (Grimm and Stern, 1974; Kadushin, 1976; Reskin, 1988; Williams, 1992; Zimmer, 1988). Evidence that men fare better than women in terms of job status when they work in professions where men are the numerical minority has been demonstrated in librarianship (Blankenship, 1971; Williams, 1992) social work (Gripton, 1974; Kadushin, 1976), elementary school teaching (Gross and Trusk, 1976; Williams, 1992) and nursing (Robinson, 1973; Williams, 1992). Williams coined the ‘glass escalator’ effect to name the promotional advantages men can accrue in professions that are well represented by women, which are rendered invisible by the dominant tokenistic accounts of inequality. Williams suggested that structural conditions within such professions actually privilege men. The glass escalator effect suggests that men who work in psychology could experience privilege which results in their overrepresentation as professors even though they are not the numerical majority.

The glass escalator suggests a couple of different reasons for why men may come to be overrepresented as professors in psychology. One possibility is that the glass escalator represents the same phenomenon that leads to inequality in domains that are well represented by men. The glass ceiling as defined by Cotter et al. (2001), for example, suggests that women can experience promotional barriers in all workplaces which will be evident if their chance of promotion relative to men is less than one would
expect given the overall numbers of women and men. Alternatively, the glass escalator could describe a unique and distinct process that enhances men’s progression in domains where women are well represented. Concerns that men are underrepresented in psychology suggest that men could indeed experience additional privileges because they are viewed as an underrepresented but valued group. If this is the case, then one might expect glass escalator type effects whereby the rate at which men are appointed to professorial posts is amplified in departments employing high proportions of academics that are women.

**New Managerial Structures as a Basis of Gender Inequality in Modern Academia**

The glass escalator theory (Williams, 1992), which was intended to describe patterns of inequality in government-supported organisations in the late 1990s, has been critiqued for offering limited use for explaining men’s economic advantages in modern organisational systems (Williams, 2013). Today, these organisations – such as nursing and teaching - are characterised by reduced government support, devolved budgets and time-bounded projects judged on results and outcomes (Williams, 2013). With the emergence of new managerialism, academic psychology has undergone a similar transformation, and according to Williams (2013), the glass escalator may not accurately represent the processes that lead to inequality this context.

The new managerial structures in modern academic contexts have come under considerable scrutiny as the basis of gender inequality. Although the creation and communication of knowledge has always been part of the research and teaching performed by academics, it is now managed in an ‘audit culture’ using short-term,
meritocratic outcome-based measures such as recent publications or student evaluation of teaching (Power, 1997). Many scholars have argued that the meritocratic systems of evaluation employed in academia inherently favour men (Deem, 1998; Deem & Johnson, 2003; Knights and Richards, 2003). From this perspective, men may accrue occupational advantages because the knowledge work they perform is more favourably evaluated than the knowledge work performed by women. Given that meritocratic systems of evaluation such as the NSS and RAE are employed throughout UK academic institutions, one might expect departments with higher NSS and RAE evaluations to be associated with vertical gender segregation that locates more men than women in professorial appointments. As such, the privilege men accrue in academic departments may be more closely related to systems of meritocracy than to the numerical underrepresentation of men as predicted by the glass escalator theory (Williams, 1992 suggests).

“Comparative worth”, meritocratic systems that are intended to provide equal opportunity and access to equivalent roles may also be circumvented by the gendered allocation of work (Reskin, 1988). Men tend to devote a higher portion of time to research activities than women and (Park, 1996) which could mean that men are more likely to do well in research assessment exercises than women. In addition, women usually devote more time to teaching activities than men (Bellas & Toutkoushian, 1999; Park, 1996), whilst men sometimes avoid counselling students and discourage their disclosure of personal problems (Stratham, Richardson, & Cook, 1991). This gendered allocation of knowledge work appears to reflect student expectations regarding the type of roles women and men academics should fulfil. Bennett (1982) found a relationship

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between amount of personal contact with women professors and student satisfaction, such that students penalised women when they did not meet expectations for personal contact, but did not evaluate men differently. Moreover, women often cut back on their hours during the earlier part of their careers whilst women who are further up the academic career ladder work longer hours (Poole, Bornholt & Summers, 1997). Student evaluations as captured by the NSS could thus penalise women academics depending on the role they perform or the stage of their career. Together, evidence of the gendered allocation of knowledge work suggests that the NSS and RAE department evaluations could reflect gendered stereotypes about the types of academic roles women and men perform. From this view, meritocratic evaluations reflecting the type of roles women and men typically fulfil could present barriers to the success of women whilst aiding men’s progression to professor.

The Present Research

The focus of the present study was to discern how the representation of men and women appointed to professor versus those with other academic appointments relates to the ratio of women to men employed in psychology departments and meritocratic department performance measures. It was hypothesised that there would be a trend for men to overrepresent professors both across and within the departments. The analysis aimed to test for glass escalator effects whereby the chance that men would be promoted to professor exceeds that of women in departments overrepresented by women. Specifically, the study assessed whether a glass escalator effect would be indicative of the general disadvantage of women compared to men, irrespective of numerical
representation; or a discrete effect whereby the appointment of men to professors would be enhanced in departments that employed larger proportions of academics that are women. These hypotheses run counter to Tokenistic theory and concerns regarding the general underrepresentation of men in psychology, which suggest that when men are underrepresented they will be at a professional disadvantage. Secondly, the NSS 2012 and RAE 2008 were assessed as potential bases for gender inequality in the appointment of academics to professor.

**Method**

The methods of data collection and variable calculation are the same as those described in Chapter 2, the only difference being that the categorical variables representing HoD title and HoD gender were not used in the analyses.

**Results**

Descriptive statistics for all variables are shown in Table 1 in Chapter 2. All variables were screened for normal distribution. Of the 24 variables, 10 met the assumptions for parametric data. Non parametric tests were used for tests with variables that were not normally distributed unless otherwise stated.

**Academic Status of Women and Men**

**Within-department analysis.** It was hypothesised that professorial posts would be overrepresented by men. Treating the individual academic as the unit of analysis, a 2x2 Chi-Square analysis was conducted with academic gender (Woman versus Man) and title (Professor versus Doctor) as variables. Whilst 31.5% of the men were professors, only 13.4% of the women were professors, $\chi^2 (1, N = 2263) = 117.08, p < .001$. This
translated to men representing 71.2% of the professors in the data set, despite a near even split of women (48.7%) and men (51.3%) overall. The odds ratio indicates that men academics were 2.97 times more likely to be professors than women academics.

**Between-department analysis.** Another way to assess the progression of women and men is to look at the job status of women relative to their women peers and the job status of men relative to their men peers, i.e.: is the career progression of women to professor proportional to the number of women in the department and is the career progression of men to professor proportional to the number of men working in the department? Treating the departments as the main unit of analysis, the rate at which the women academics and the men academics were employed as Professors versus Doctors was assessed. Departments that employed a larger proportion of their academics as professors, hired more of their women academics as professors, $r_s(83) = .69, p < .001$; and more of their men academics as professors, $r_s(83) = .89, p < .001$. These correlations were however significantly different, $z = 3.68, p < .001$, indicating that departments that employed a higher proportion of their academics as professors employed their men academics as professors at a higher rate than they employed their women academics as professors. Put differently, when the ranks of the professoriate grow, it is men, rather than women that swell the growth.

Tokenism predicts that women and men are more likely to attain high status roles in workplaces that are represented by a majority of employees who share their gender category. In contrast, the glass escalator predicts that there may be certain conditions that result in the appointment of men to high status roles when they work in environments that
employ mostly women. The relationships between the proportion of academics that were women and the representation of women and men in professorial and doctoral posts were assessed to test these hypotheses.

Correlations between the academic distribution measures can be found in Table 3 in Chapter 2. Prior to testing the main hypotheses it was assessed whether the proportion of academics that were women was related to number of (a) academics employed, (b) women academics, and (c) men academics. The proportion of academics that were women was significantly negatively correlated with the number of academics, $r_s(83) = -.23$, $p = .039$, indicating that departments that employed larger numbers of women academics relative to men academics were smaller overall.

To see whether the representation of academics as doctors and professors differed according to the proportion of academics that were women, the number of (a) professors, (b) doctors, and (c) the proportion of academics that were professors were assessed. The number of doctors in departments was unrelated to the proportion of academics that were women, $r_s(83) = -.06$, $p = .578$. The number of professors in departments was significantly negatively correlated with the proportion of academics that were women, $r_s(83) = -.40$, $p < .001$, as was the proportion of academics that were professors, $r(83) = -.39$, $p < .001$. Therefore, departments that employed more women relative to men employed fewer professors overall, and fewer of the academics they employed were represented in professorial roles. This occurred irrespective of the departments’ overall size.
The number of (a) women professors, (b) women doctors, (c) men professors, (d) men doctors, (e) the proportion of doctors that were women, and (f) the proportion of professors that were women were explored to test the main hypotheses.

There was a non-significant, negative correlation between the proportion of academics that were women in a department and the number of women professors in that department, $r_s(83) = -.10, p = .376$. However, the number of women doctors employed in a department was significantly greater in departments that employed larger proportions of women academics, $r_s(83) = .35, p = .001$. Therefore, more women were employed as doctors – but not as professors - in departments that employed more women relative to men. There was a significant negative association between the proportion of academics that were women in a department and the number of men who were professors, $r_s(83) = -.47, p < .001$, and the number of men who were doctors, $r_s(83) = -.48, p < .001$. Put differently, men were more likely to be employed both as doctors and as professors in departments with higher proportions of academics that were men. Together, these results indicate that when women swell the academic ranks, they do so at the lower non-professorial grades, but when men swell the academic ranks they do so both at the lower non-professorial grades and the higher professorial grades.

The proportion of doctors that were women was positively correlated with proportion of women that were academics, $r_s(83) = .88, p < .001$. The proportion of professors that were women was also positively correlated with the proportion of women that were academics, $r_s(83) = .32, p = .005$. However, these correlations were significantly different, $z = 6.69, p < .001$. In other words, women were more likely to be
employed as both doctors and professors relative to men when working in departments with higher proportions of academics that were women, but their higher representation in these departments relative to men was more closely associated to their employment as doctors rather than as professors.

Finally, the proportion of men that were professors and the proportion of women that were professors were explored. The proportion of men that were professors was negatively associated with the proportion of academics that were women $r_s(83) = -.23, p = .033$. The proportion of women that were professors was similarly negatively correlated, $r_s(83) = -.21, p = .051$. In other words, both women and men were professors less often when they worked in departments that employed more women relative to men.

**Discussion**

Overall men were considerably more likely to be professors than women. Departments that employed more women relative to men employed fewer academics, fewer professors overall, and a smaller ratio of professors relative to doctors. Because women were typically located in departments with fewer professors, it is likely that they had less opportunity to be appointed to professor than the men, who were more typically located in departments with more professors. However, when the number of professorial versus doctoral positions was taken into account, the rate at which men were positioned as professors was greater than the rate at which women were also positioned as professors, suggesting that gender inequity in the appointment and promotion of academics to professor went beyond the general availability of professorial roles in the departments where women and men typically worked.
Greater numbers of women and men were professors in departments that represented larger numbers of employees in their gender group. This suggested that both women and men had somewhat of an advantage when it came to being appointed professors when they were the numerical majority. However, women working in departments with more women relative to men were more commonly doctors than professors. Contrastingly, the men working in departments with an overrepresentation of men included both professors and doctors. Men were less likely to be professors than doctors in departments with more women academics, but so too were women. Although higher numbers of women were professors in departments with higher proportions of academics that were women, women did not appear to have a particular advantage being promoted to professors. For men however, the chances of being promoted to professor appeared to be enhanced when they worked in departments with more men academics. The results do not therefore support the Tokenism hypothesis that being the majority gender group necessarily engenders promotional advantages for employees, as only men occupied professorial posts at a high proportion when they were in the majority. The gender disparities, whilst not offering direct evidence for glass escalator effects, suggest that a greater chance for men to be promoted to professor could occur in departments employing more women academics. The following analyses offer a direct test glass escalator effects.

**Glass Escalator Effects**

**The appointment of men to professor.** The glass escalator effect describes conditions that occur in occupations and workplaces which engender the unfair
promotion of men to high status positions despite their numerical underrepresentation. In contrast, Tokenism offers an explanation for the overrepresentation of men in high status roles relative to women by predicting that gender groups that form the minority of an organisation are always at a professional disadvantage, whilst gender groups that form the majority are necessarily in a position of privilege.

If Tokenism (Kanter, 1977) is correct, the likelihood that men will be professors rather than doctors should be enhanced in departments that employ a smaller proportion of women to men. Accordingly, the likelihood that women academics will be professors rather than doctors should be enhanced in departments that employ larger proportions of women to men. In contrast, the glass escalator (Williams, 1992) motivates the hypothesis that the representation of men as professors rather than doctors will increase within departments as the overall proportion of women to men academics increases.

Two moderation models were designed to test the competing hypotheses. These models assessed how the proportion of academics that were women in departments would moderate the relationship between the proportion of academics that were professors and (a) the proportion of men that were professors and; (b) the proportion of women that were professors. Tokenism and the glass escalator effect predict that the proportion of academics that are women will moderate the relationship in different ways. Tokenism (Kanter, 1977) suggests that increases in the proportion of academics that are women should lessen the positive relationship between the proportion of men that were professors and the proportion of academics that were professors, and enhance the positive relationship between the proportion of women that were professors and the proportion of
academics that were professors. The glass escalator suggests that increases in the proportion of academics that are women should selectively enhance the positive relationship between the proportion of men that were professors and the proportion of academics that were professors.

*Moderation model for the proportion of men who were professors.* The causal variable is the proportion of academics that are professors, the outcome variable is the proportion of men that are professors, and the moderator variable is the proportion of academics that are women. The causal model specifies that the proportion of academics that are professors variable is presumed to cause proportion of men that are professors linearly, whose causal effect is presumed to be altered linearly by the proportion of academics that are women. The overall model was significant, $R^2 = .796$, $F(3, 81) = 105.61, p < .001$. The model summary is shown in Table 6.

*Descriptive statistics.* There were 85 cases in the analysis. Means and standard deviations for variables are shown in Table 5. Multicollinearity diagnostics for predictor variables were assessed and were within an acceptable range, VIF = 1.28.

*Results.* The proportion of academics that were professors was a significant predictor of the proportion of men that were professors, $b = .81, t(85) = 4.02, p < .001$. The proportion of academics that were women was not a significant predictor of the proportion of men that were professors, $b = .07, t(85) = 0.67, p = .507$. The interaction term between the proportion of academics that were professors and the proportion of academics that were women was created. The standardised regression coefficient for the Product Term was calculated by performing the regression with standardised variables as
suggested by Friedrich (1982). The interaction term accounted for a significant proportion of the variance in the proportion of men that are professors, $\Delta R^2 = .025$, $\Delta F(1, 81) = 9.84$, $b = 1.23$, $\beta = .12$, $t(134) = 3.13$, $p = .002$. The model is summarised in Table 6. Examination of the interaction plot (Figure 3) showed that the proportion of academics that were women had an amplifying effect on the positive relationship between the proportion of academics that were professors and the proportion of men that were professors.

*Test of homogeneity.* Johnson-Neyman Technique indicated there were no statistical significant transition points within the observed range of the moderator. Therefore the assumption of homogeneity of regression slopes is not violated.

*Test of nonlinearity.* Results for tests of nonlinearity were as follows: The quadratic effect of the proportion of academics that were women interacting with the proportion of academics that were professors is 1.18 and is not statistically significant ($p = .076$). The quadratic effect of proportion of academics that were professors interacting with the proportion of academics that were women is -1.20 and is not statistically significant ($p = .233$). There is then no evidence of nonlinear effects.
Figure 3. The conditional effect of the proportion of professors that are women on the proportion of men that are professors at values of the proportion of staff that are women. Values for variables correspond to the mean and the mean plus/minus 1 SD representing low, high and average proportions.

**Moderation model for the proportion of women who were professors.** The moderation model was tested as in the former analysis, this time treating the proportion of women that are professors as the outcome variable. The causal model specified that the proportion of academics that are professors variable is presumed to cause the proportion of women that are professors linearly, whose causal effect is presumed to be altered linearly by the proportion of academics that are women. The overall model was significant, $R^2 = .51$, $F(3, 81) = 27.59, p < .001$.

**Descriptives.** There were 85 cases in the analysis. Means and standard deviations for model variables are shown in Table 7. Multicollinearity diagnostics for predictor variables were assessed and were within an acceptable range (not exceeding 4), $VIF = 1.28$. 
Model results. The proportion of academics that were professors was a significant predictor of the proportion of women that were professors, $b = .72$, $t (85) = 7.94$, $p < .001$. The proportion of staff that were women was not a significant predictor, $b = .025$, $t (85) = 0.28$, $p = .778$. The interaction term between the proportion of academics that were professors and the proportion of academics that were women was created. The standardised regression coefficient for the Product Term was calculated by performing the regression with standardised variables as suggested by Friedrich (1982). The interaction term did not account for a significant proportion of the variance in the proportion of women that are professors, $\Delta R^2 = .001$, $\Delta F(1, 81) = .18$, $b = -.16$, $\beta = -0.03$, $t(134) = -0.42$, $p = .677$. As such, the R-square increase due to the interaction was not significant. The final model is summarised in Table 8. Examination of the interaction plot (Figure 4) showed that the proportion of academics that were women did not affect the relationship between the proportion of academics that were professors and the proportion of women that were professors.

Test of homogeneity. Johnson-Neyman Technique indicated there were no statistical significant transition points within the observed range of the moderator. Therefore the assumption of homogeneity of regression slopes is not violated.

Test of nonlinearity. Results for tests of nonlinearity were as follows: The quadratic effect of the proportion of academics that were women interacting with the proportion of academics that were professors is 1.18 and is not statistically significant ($p = .076$). The quadratic effect of proportion of academics that were professors interacting...
with the proportion of academics that were women is -1.20 and is not statistically significant (p = .233). There is then no evidence of nonlinear effects.

![Figure 4](image.png)

**Figure 4.** The conditional effect of the proportion of professors that are women on the proportion of women that are professors at values of the proportion of staff that are women. Values for variables correspond to the mean and the mean plus/minus 1 SD representing average, low and high proportions.

**Discussion**

Departments that hired more of their academics as professors employed more of their women academics and more of their men academics as professors rather than doctors. However, these relationships were affected differently depending on the relative numbers of women and men working in departments. The effect whereby departments employed more of their men academics as professors rather than doctors was amplified as the total number of women academics relative to men academics increased. This effect was amplified particularly when women were overrepresented, but also when women and men were equally represented. In contrast, the chance that women were hired as
professors versus doctors was unaffected by the general representation of women relative to men.

The results clearly support the glass escalator hypothesis; men appeared to be at a general advantage when it came to being professors rather than doctors, which was enhanced as the number of women relative to men increased. The results therefore suggest that men may be granted particular privileges that further enhance their progression to professor in departments that employ higher numbers of women relative to men. The results necessarily run counter to the Tokenism hypothesis. Women were not, as Tokenism would predict, at a particular advantage when they were the majority, and men were not at a disadvantage when they were the minority.

Some scholars have argued that meritocratic measures of performance in academic departments and institutions can lead to greater promotional opportunities for men than for women (refs). To see whether these measures of attainment are likely to underpin inequities observed in the present study, the following analyses look at how the NSS 2012 and RAE 2008 scores for the sampled psychology departments related to the distribution of the women and men working in those departments.

The NSS 2012

Three NSS variables represent the 2012 percentage scores for students that were satisfied with their psychology 1) course; 2) teaching, and; 3) feedback. Results for the NSS 2012 were available for 73 departments.

Spearman Rho correlation analyses were performed for the NSS variables and the department distribution variables and are shown in Table 9. There were no significant
associations between the feedback satisfaction and the measures of department distribution, all $p > .10$.

Teaching satisfaction was significantly positively related to two of the gender distribution measures. These were the number of women professors $r_s(71) = .27, p = .024$, and the proportion of women that were professors, $r_s(71) = .26, p = .027$. In addition, there was a marginal positive association with the proportion of academics that were professors, $r_s(71) = .23, p = .055$. There were no other relationships that approached significance, all $p > .098$. The results suggest that a higher percentage of students were satisfied with the teaching on their psychology course in departments with more women professors, a higher representation of women professors relative to women doctors, and to a lesser degree, a higher representation of professors rather than doctors in general.

Course satisfaction was significantly negatively correlated with the proportion of doctors that were women, $r_s(71) = -.24, p = .039$. Therefore, departments with higher numbers of men doctors relative to the numbers of women doctors received higher course satisfaction ratings. There were also four marginally significant correlations. Course satisfaction was marginally negatively correlated with the proportion of academics that were women, $r_s(71) = -.23, p = .053$, thus departments employing more women relative to men appear to have received lower course satisfaction ratings. Marginal positive relationships were observed between course satisfaction and the number of women professors, $r_s(71) = .22, p = .060$; the proportion of women that were professors, $r(71) = .223, p = .058$; and the number of professors, $r_s(71) = .22, p = .065$. All other $p > .08$. Overall, student course satisfaction scores were higher in departments that hired larger
proportions of academics that were men and more men doctors relative to women doctors. In line with the associations present for teaching satisfaction, departments appeared to score higher on the course satisfaction measure when they employed more men professors, more of their women academics as professors and somewhat more professors overall.

Discussion

Departments that gained higher course satisfaction scores employed higher numbers of men doctors relative to women doctors, and marginally fewer women relative to men overall. As such, departments that were somewhat better represented by men received higher course satisfaction scores. The teaching satisfaction measure was not clearly related to the ratio of women and men working in departments. Instead, disparities in NSS teaching appraisals appeared to relate to the academic status of women, with departments receiving higher ratings when more of their women academics were represented as professors and fewer were represented as doctors. To a lesser degree, this effect was also evident for the course satisfaction measure. There were no significant associations between the feedback satisfaction scores and any of the distribution measures.

It has been argued that new managerial systems employing meritocratic measures of performance may favour men academics (Acker 2010; Deem, 1998; Deem & Johnson, 2003; Knights & Richards, 2003). The results for the course satisfaction scores, which were highest in departments that were moderately better represented by men doctors, offer some support for this hypothesis. The teaching satisfaction results – and to some
extent, the course satisfaction results - additionally suggest that women who work in lower status academic positions may be penalised compared to women professors, who are numerically rare across the departments. The NSS could therefore provide a basis for barriers to women’s progression to professor, but does not readily provide an explanation how the rate at which men are appointed to professor could be enhanced.

The results line up with theorising that suggests the type of work relating to university teaching is ‘gendered’. Successful management is typically conflated with men (Ryan et al., 2011) and students could arguably evaluate course programmes as more successful when men are most visibly associated with their management. Students have also been shown to hold different expectations about the type of teaching work women and men do, and these expectations appear to mirror to the type of work women and men typically perform. Men typically spend less time on teaching activities than women (Bellas & Toutkoushian, 1999), spend less time advising students than women (Astin, Korn & Deryl, 1991) and sometimes avoid counselling students and discourage their disclosure of personal problems (Stratham, Richardson, & Cook, 1991). Bennett (1982) found a relationship between amount of personal contact with women professors and student satisfaction, such that students penalised women when they did not meet expectations for personal contact, but did not evaluate men differently. Women often cut back on their hours during the earlier part of their careers whilst women who are further up the academic career ladder work longer hours (Poole, Bornholt & Summers, 1997). As such, the women doctors represented in the sampled psychology departments may have had less contact time with students than is generally considered appropriate, and as a
result, may have been perceived by students as less effective teachers than women professors. The absence of equivalent expectations for contact time for men who teach could similarly account for the lack of association with the representation of men professors and the NSS results, either because contact time with students does not vary for men professors and doctors, or because men are not penalised for differences in contact time.

There were no significant associations between the feedback satisfaction scores and the distribution measures. This lack of association was somewhat surprising given that one could logically assume that student-teacher interactions include feedback. However, whilst the course and teaching variables are highly positively associated, the NSS feedback scores shared considerably less variance with the other NSS variables. Possibly, the feedback students’ receive may be regarded as less closely associated with the individual teacher (and their gender) than teaching and course provisions. The standardised feedback methods often used in departments and institutions could for example reduce the perceived influence or control of individual teacher on the mode, type or level of feedback provided. Departments generally scored lower on feedback than course and teaching satisfaction. Thus alternatively, students could have been generally dissatisfied with the methods of feedback, and perceived less variation between teachers – for good or worse - who differ according to academic status or gender.

The RAE 2008

A total of six RAE 2008 variables were included in the analyses. Academics Submitted represented the proportion of full-time academic staff selected by the
institution for inclusion (academics whose contract lists research and/or teaching as their primary function, employed under a contract of employment with the HEI on the 31 October 2007 census date). A further five variables represented the percentage of research produced by each of the departments that was judged to fall within the following quality levels (in descending order), 1) 4-star research; 2) 3-star research; 3) 2-star research; 4) 1-star research and; 5) unclassified research. The RAE 2008 data was available for 62 departments.

Associations between the RAE 2008 variables and the distribution measures are shown in Table 10. Firstly, the proportion of staff entered into the exercise was assessed. Academics Submitted was negatively correlated with the proportion of academics that are women, $r_s(60) = -.27, p = .032$. Therefore, departments with more women entered fewer of their academics into the RAE 2008. The proportion of staff submitted in the exercise was positively correlated with the proportion of academics that were professors, $r_s(60) = .56, p < .001$ and accordingly with the proportion of men that were professors, $r_s(60) = .50, p < .001$, and the proportion of women that were professors, $r_s(60) = .41, p = .001$. Consistent with these correlates, the ratio of women to men professors was not significantly related to the proportion of academics included in the exercise, $r_s(60) = -.05, p = .739$. In sum, departments that employed more men relative to women and more professors entered more of their academics into the RAE 2008. Departments that employed more women relative to men employed fewer professors, thus the association between the proportion of academics that are women and the proportion of academics
entered into the exercise could be indicative of the fact those departments have fewer professors, and professors are most likely to be entered into the exercise.

The five quality measures were assessed next. The proportion of academics who were women was not significantly associated with any of the five research quality measures, all $p > .15$. Therefore, the overall ratio of women to men working as academics in the psychology departments appeared to be unrelated to the RAE research quality ratings. The quality measures were similarly unrelated to the proportion of professors that were women, all $p > .40$. There was an association of marginal significance between the proportion of doctors that were women and 1-star research, $r_s(60) = -.23, p = .068$, indicating that departments with more women than men doctors produced somewhat less low quality research. However, in general the RAE quality measures were not closely related to the representation of men academics relative to women.

The RAE measures were next assessed for relationships with the total numbers of 1) all academics, 2) professors; 3) doctors, 4) women professors, 5) men professors, 6) women doctors, 7) men doctors, and; 4) proportion of academics that were professors. There was a general pattern for all variables to be positively correlated with 3-star and 4-star research, and negatively correlated with 2-star, 1-star and unclassified research (see Table 4). As such, departments employing more academics, more professors and more doctors tended to be associated with a higher percentage of high quality research and a lower percentage of low quality research, but associations did not differ significantly between employee gender groups.
Finally, the proportion of men that were professors and the proportion of women that were professors were assessed. A higher proportion of men that were professors was positively associated with higher percentage production of 4* research, $r_s(60) = .28, p = .028$, and non significantly positively related to the production of 3* research, $r_s(60) = .21, p = .104$. The measures of lower quality research were all negatively correlated with the proportion of men that are professors; UC research: $r_s(60) = -.25, p = .048$; 1* research (ns), $r_s(60) = -.21, p = .102$, and; 2* research: $r_s(60) = -.28, p = .026$. The relationship between the proportion of women that are professors and the RAE measures were in the same direction as those observed for men (indicting a positive association with the production of 4* and 3* research, and a negative association with 2* and 1* research), but the associations were not statistically significant, all $p > .09$. However, there were no significant differences between the coefficients for the proportion of women that were professors and the proportion of men that were professors. This indicates that the direction and strength of the relationships between the RAE ratings and the appointment of women to professor and the RAE ratings and the appointment of men to professor were not significantly different. Therefore, departments that employed more of their men academics as professors recieved significantly higher research ratings, whilst quality ratings were less strongly related to whether or not departments employed women as either professors or doctors.
Discussion

Departments that had submitted a higher proportion of academics for inclusion in the RAE 2008 employed more academics, employed more women relative to men and employed fewer professors by 2013. Whether or not the professors employed within departments were women or were men was unrelated to the proportion of academics submitted for the exercise. As departments that employed more men relative to women were larger and employed more professors, the association between the proportion of academics that are women and the proportion of academics entered into the exercise could be indicative of the fact those departments had more professors, and that professors were most likely to be entered into the exercise. This interpretation is supported by the fact that the percentage of research deemed by the RAE 2008 to be of low or high quality was largely unrelated to the gender distribution of departments, and was instead associated with the overall numbers of academics and the number of professors employed.

There was some evidence to suggest that the RAE quality ratings were somewhat more closely related to the academic status of men employed within departments than to the academic status of women. Higher RAE 2008 scores had been given to departments who since hired more of their men employees as professors, whilst the RAE scores were not so strongly related to whether or not women were professors, although they showed relationships in the same direction. There was, however, greater variance in the proportion of men that were professors in departments than the proportion of women that were professors. This suggests that the effect whereby women appeared to be evaluated less positively than men at the same professional level may have occurred owing to differences in the RAE ratings in the departments that women and men professors were typically appointed in. This interpretation would marry with the finding that the overall numbers of women professors and men professors were similarly related to the RAE quality ratings, and that men were best
represented in departments with characteristics that were associated with higher RAE ratings. Specifically, departments that submitted more academics received higher quality ratings, departments with more professors submitted more academics and men were more likely than women to work in such departments. In addition, departments with higher proportions of women doctors produced more 1-star research suggesting that RAE ratings are unlikely to present barriers to women’s progression in these departments. In sum, the results offer limited evidence for an indirect advantage for men in terms of working in highly rated departments, and this did not appear to translate to any overall differences between the RAE scores associated with women and men academics at the same academic level.

Overall, the results suggest that RAE quality ratings are more closely related to the ranking of academics within departments and rather than to the gender of academics. As higher ranking women and men academics invest more working hours than lower ranking academics (Jacobs & Winslow, 2010) and tend to be more research focused (Park, 1996) the relationships with the employment of professors could relate to the research productivity of professors relative to doctors. Accordingly, research-focused departments are likely to receive good RAE evaluations. RAE results are used for the basis of allocating funding to departments. Therefore, departments that receive good RAE evaluations are likely to accrue more funding, and are more likely to attract high ranking academics in subsequent years. RAE results are often used as the basis for promotional decisions, therefore higher rating departments may be inclined to promote more of their academics to professor, may attract more high ranking academics owing to funding and prestige associated with the departments, and movement of academics may be more likely between similarly rated departments.

General Discussion

The study presented in this chapter aimed to assess vertical gender segregation in the appointment of academics to professor in UK and Irish psychology departments. The study
found examples of gender inequality that could not be explained by tokenistic, gender neutral accounts of inequality. Men were overrepresented as professors despite equal balance of women and men academics and glass escalator effects appeared to enhance their appointment to professor as the overall number of men working in a department relative to women decreased. The results offer insight into the processes that lead to inequality in academic psychology departments.

The results highlighted the importance of a conceptual distinction between privilege and discrimination. Inequality appeared to be amplified through processes that aided men’s appointment to professor. Specifically, men appeared to benefit from ‘Glass escalator’ type effects whereby they were more likely to be professors than doctors in departments that were represented by larger numbers of women relative to men. Contrastingly, women’s chance of being a professor versus a doctor in a given department, whilst being consistently lower than for men, was unaffected by the gender composition of a given department. This finding indicates a process leading to inequality that was distinct from a ‘glass ceiling effect’, which attributes inequality to barriers to women’s progression. In this case, the results did not suggest that the ratio of women and men academics in a department presented a barrier to the progression of women to professor, although the results did align with the hypothesis that the men’s progression to professor could be boosted when women are particularly well represented. Moreover, the attribution of both privilege and discrimination to the same, universal process – as found in tokenistic theorising - is clearly insufficient to account for the effect. Whilst the privileging of men appeared to relate to numerical representation, discrimination against women did not. This suggests that the privileging of men in academic psychology departments is likely to function as a process distinct from discrimination against women.
The results suggest that theories that attribute vertical gender segregation to discrimination may not give a complete picture of how women and men experience gender inequality in academic psychology. Previous research has found that gender inequality was less in academic settings that were represented by a larger proportion of academics that were women (Toren & Kraus, 1987). The authors suggested that, contrary to Tokenistic accounts, women may be at somewhat of an advantage when they work in domains with fewer women (or a disadvantage when they work in domains with more women). In contrast to this interpretation, the present research suggests that greater gender inequities in departments with more women could in part be accounted for by men’s accumulative privilege, as women’s professional attainment did not vary according to department gender composition.

Other inequalities were observed beyond the appointment of women and men to professor. The types of departments in which women and men typically worked differed. Departments that employed more women relative to men employed fewer academics, fewer professors (both women and men), fewer professors relative to doctors and were more likely to enter a higher proportion of their academics into the RAE 2008. Consequently, it appeared that men were more likely than women to be employed in departments that were more research active and/or produced more officially recognised research. This suggested that departments that employed more men relative to women were more prestigious and may grant men more opportunity to participate in funded research which could in turn enhance their career prospects or hinder the careers of women. That said, the percentage of research deemed by the RAE 2008 to be of low or high quality was largely unrelated to the gender distribution of departments, and was instead associated with the overall numbers of academics and the number of professors employed. Thus, the RAE results did not appear to translate to a direct advantage for men or disadvantage for women when it came to being appointed to professor. Accordingly, although the NSS 2012 results indicated a gendered
allocation of teaching work whereby women doctors could be penalised relative to women professors. However, it seems unlikely that such penalties presented barriers to women’s progression to professor as the proportion of women in professorial roles appeared to be constant.

Consequently, the RAE 2008 and NSS 2012 are insufficient to explain the gender inequalities in the appointment of women and men to professor. Depending on whether the academics documented in the data were employed in those positions at the time of the RAE 2008 and NSS 2012, the extent to which the results reflect the context of appointment versus the academics’ performance may vary. Nevertheless, the lack of association is surprising in contrast to rhetoric surrounding gender equality and meritocracy. Arguments that assume meritocratic structures defend against inequality, or those which argue they reflect and reproduce discursive practices of masculinity that present barriers to women (Knights & Richards, 2003) were not supported in this instance, and motivates the hypothesis that other processes could be at work.

Concerns that men are underrepresented in psychology and arguments that advocate encouraging them into the field suggest men may experience privileges when they are viewed as an underrepresented but valued group. Although people may hold the perception that men are underrepresented, the present research finds evidence to the contrary. Firstly, the academic gender balance was more or less equal overall. Secondly - and in line with research which finds mostly men to be located in high status academic roles (European Commission, 2013) - men were actually overrepresented as professors. What is more, glass escalator effects that enhanced men’s appointment to professor were observed in departments with a more or less equal gender balance, not only in departments that were underrepresented by men. Together, these findings suggest that arguments that support privileging men because they are underrepresented could actually justify privileging men in the absence of direct
evidence of their underrepresentation. Chapters 4 and 5 present five experimental studies designed to explore the potential social-cognitive basis for glass escalator effects that privilege men in academic psychology. These chapters directly assess how perceptions about whether or not researchers are typical of a given psychological domain relate to attention to their social group membership and the evaluation of their research.
Chapter 4: Gender-Focused Attention to Researchers and Participants of Single-Gender Research

Abstract

Chapter 4 explores research evaluation as a possible driver of inequality in academic psychology and the capacity of existing theories to explain it. Why do people think research about women is more objective or less ‘biased’ when conducted by men than when conducted by women? Social cognitive models suggest a direct relationship between the typicality of scientists with the marking of their social identities and attributions of research bias. However, the glass escalator effect suggests men professionals gain an implicit advantage in domains where men are the minority and can be presumed to be non-typical. Both theories were tested with experiments where participants reported their reactions to vignettes about single-gender research. Participants imagined that an author’s gender would typically match the gender of participants in these domains (Experiment 1). Participants focused equal attention on single-gender research about women or men, and rated it as equally biased (Experiment 2). However, when women and men psychologists were described as doing single gender research about women, participants focused on the gender of women psychologists and overlooked the gender of men psychologists, focusing instead on his women participants. Contrastingly, psychologist gender did not affect participant focus on the gender of men participants, or on the gender of the women or men psychologists described as studying them (Experiment 3). Jointly these studies show that the Othering of gender is not as dependent on cognitive processes pertaining to group typicality as previous models suggest.
Introduction

In 1992, Gannon, Luchetta, Rhodes, Pardie and Segrist published the article *Sex bias in psychological research: Progress or complacency?* The article consisted of a content analysis of psychology journal articles, published between 1970 and 1990. The analysis showed significant reductions in sexist research practices during that time, including fewer inappropriate generalisations across gender groups, increased transparency of participant gender and improved representation of women as research participants and authors. However, Gannon et al. (1992) warned that the trend for improvement was not indicative of a non-sexist discipline; over a third of articles published in 1990 continued to make inappropriate generalisations across gender groups and many single-gender studies failed to satisfactorily justify a single-gender design.

Although their procedure described the independent coding of the articles by the first four authors with agreement between 98-100%, initial reviewers at *American Psychologist* critiqued the methodology “on the grounds that all coders were women and were aware of the purpose of the study” p. 391. In response, Dan Segrist - a man - was added as a coder and included on the author list. The story of Gannon et al. suggests that the gender of a man researcher was a less salient source of author bias than the gender of women researchers when conducting gender-related research.

A variety of theories conceptualise attention to group attributes, such as gender, as disadvantageous for the group of focus. Accordingly, in the instance of Gannon et al., the gender of women authors was invoked to critique the reliability of their research. Social cognitive research has motivated a line of thinking which suggests that non-typical group members become the focus of attention and typical group members avoid attention. On the other hand, researchers have generated reasons to doubt the universality of processes of typicality, suggesting that attention to group members is selective and relates directly to
gender categorisations. The present chapter looks at the extent to which processes of typicality can explain attention to the gender of women and men researchers.

**Othering and Prototypicality**

The Othering of women is an oft cited route of gender inequality in science. Some feminist scholars have noted how scientific ideals pertaining to objectivity, rationality and autonomy correspond with cultural definitions of masculinity, which necessarily exclude women who are defined in terms of the subjective, irrational and dependent (Harding, 1986; Morawski & Agronick, 1991). From this view, science is an inherently ‘masculinist’ discipline that renders the gender of women as ‘other’ to appropriate scientific enquiry. As such men’s privilege and women’s discrimination is an inevitable consequence of scientific enquiry.

Some theories that suggest the Othering of women is governed by processes of group typicality. These theories suggest women will be disadvantaged in science when they are seen as non-prototypical. Bem’s (1993) feminist theory of androcentrism, for example, describes knowledge as being constructed in way that takes men as the default gender, rendering women particular by virtue of their gender, whilst working to men’s advantage. As such, women become the focus of attention with respect to how they deviate or converge from the ‘male’ prototype. Tokenism (Kanter, 1977) is a theory of occupational inequality which predicts that men are advantaged in any given work context because they form the numerical majority relative to women workers. From this perspective, women and men are likely to be advantaged in professions where they are prototypical employees, and disadvantaged in those where they are atypical (Jacobs, 1989). Finally, norm theory (Kahneham & Miller, 1987) is a social-cognitive model that argues that features of group members (such as gender) become linguistically marked as ‘other’ because they are perceived as atypical in contrast to the norm for the group. In contrast, features of a category member that fit the norm remain implicit and
go unremarked. In sum, these theories suggest that attention will be directed towards atypical group members.

In line with the norm theory hypothesis, people who are asked to explain statistical gender differences for categories that are typical of men have been found to focus their explanations on the behaviour of women. When asked to explain gender differences in voting behaviour, for instance, participants focused on how women’s behaviour differed from men’s behaviour (Miller, Taylor & Buck, 1991). In addition, the treatment of men as typical has been interpreted to work to the advantage of men and the disadvantage of women. For example, in the man-typical domain of leadership, the linguistic framing of men as the norm (i.e. describing how women differ from men) in explanations for gender differences was found to reify gendered stereotypes of women as communal, and men as agentic, whilst enhancing and legitimising beliefs about men’s higher status and power in society (Bruckmüller et al., 2012). Together, these findings motivate the hypothesis that attention to the gender of women authors who conduct gender-related research, such as was the case with Gannon et al. (1992), will result from the fact they are perceived as non typical.

**The Othering of Single-Gender Research**

Norm theory studies focus on how people compare two groups to explain group differences. However, scientific research is often designed to explain the behaviour of a single group. Asymmetries in attention to participant gender for single gender research about women and single gender research about men, suggest that direct or explicit comparisons to another gender group are not uniformly manifest in processes of Othering. Ader and Johnson’s (1994) extension of the study by Gannon et al. (1992), sampled from all APA journals publishing original human studies research in 1990. The authors found that article titles specified participant gender less often for research about men than for research about women. This disparity suggests that gender is regarded as less important for contextualising
results and those results are considered more universal when they represent the behaviour of men, rather than the behaviour of women (Ader & Johnson, 1994). Single gender research thus offers a sight for the study of Othering that reflects how research can assume a norm group in real-world research situations.

Conceptualisations of ‘Othering’ that attribute attention to the gender of women to processes of typicality, assume that men are the default comparison. In fact, many psychological constructs rely on the assumption that the behaviour of one social group provides a ‘baseline’ or control from which the other social group diverge or converge. For example, homogeneous groups (which are generally high status) often provide the control for socially diverse groups, on the grounds that homogenous groups are typical and thus presumed to be more ‘normal’ (Apfelbaum et al., 2014). Similarly, undue focus on the external validation of research about nominally oppressed groups has been reported, with White control groups being required for research with Chinese participants, but not vice versa (Sue, 1999). These asymmetries in comparisons seem to extend to single gender research. Prior to the 1980’s, psychological research with women participants was often interpreted by drawing comparisons to a ‘male’ baseline, whilst research was more often conducted with just men participants (Gannon et al., 1991) and findings were uncritically generalised to women. As Bernard observed in 1973:

A great deal of research focuses on men with no reference at all to women; but when research is focused on women, it is always with reference to men. If comparisons are not made with men, the research is viewed as incomplete. (p. 787).

Bernard’s observation suggests that the presumed typicality of men participants and women participants could also govern the perceived generalisability of single gender research findings.
Observations that research about women is regarded as more particular and less generalisable than research about men, suggests the existence of disparities in expectations about the validation of single gender research. Authors have indeed expressed concerns that research about women (and gender research that is conflated with the study of women) is less prestigious than ‘general’ research areas (Ferree, et al., 2007; Grant & Ward, 1991). Accordingly, it has been shown that gender articles take longer to reach peak citation rates than other types of research (Ward, Gast, & Grant 1992). Research about women may therefore be looked upon less favourably and viewed as less prestigious than research about men when it is evaluated.

One approach to explaining gender inequality in science suggests that women are disadvantaged because horizontal gender segregation locates them in low prestige, ‘Othered’ research fields. For example, disadvantages for women researchers have been interpreted as a direct consequence of their underrepresentation in ‘science’ journals, which have higher impact factors than social science journals where women were better represented (Tower, Plummer & Ridgewell, 2011). From this perspective, the segregation of women in domains such as gender research could account for their occupational disadvantages. Reviewers could have questioned the reliability of the gender-related research presented by Gannon et al. (1992) because gender research is an undervalued field of study.

The Othering of Researchers

Although women have been associated with gender research, the connections made between the presence of women and gender scholarship may reflect a social process, not direct relationship (Ferree et al., 2007). Indeed, Chapters 2 and 3 found extensive gender inequalities that favoured men throughout UK psychology departments. It seems unlikely that all the women in these studies were working in undervalued fields such as gender research. Contrary to the notion that women may be disadvantaged simply because of the type of
research they do, the accounts of some scholars suggest that that inequality in research evaluations could result from the Othering of the gender of women researchers themselves. Contrary to Norm theory, these accounts suggest women may be Othered when they present research about women, for which they are typical researchers. A number of authors who research oppressed social groups (see Kitzinger, 1997, for gay and lesbian psychology, and Avery, 2008; and Hendrix, 2002, for diversity and race research) have noted a propensity to conflate the identity of the researcher with the social group under study, which results in negative attention to the researcher’s identity when their participants are members of the same social group. At the same time, the marriage of author and participant identity goes unnoticed for researchers of ‘general’ topics. The conflation of women researchers with the study of women, and the existence of the ‘rest’ of research as an “invisibly gendered” domain occupied primarily by men, has been similarly observed (Ferree et al., 2007). Taken together, these accounts suggest that attention may be focused in particular on women researchers who study topics that are perceived to represent women-related issues. Moreover, the accounts suggest that men researchers are not Othered when they are typical researchers (i.e. researchers of ‘general’ research areas) and may even avoid being Othered when they are regarded as non-typical researchers (i.e. researchers of gender research). As such, the anecdotes present a challenge to the ideas that group typicality and salience of typical features are interdependent, and that being typical is always advantageous.

In fact, members of categories that are typical of historically oppressed groups do not become the focus of attention in the way that norm theory would predict. Instead, privileged and disadvantaged group members tend to become marked with equal frequency (See Pratto, Hegarty, & Korchmaros, 2007 for a review). This effect is evident for groups that are typical of women (Miller et al., 1991) gay men (Hegarty & Pratto, 2001) and Black Americans (Pratto, Hegarty, Lemieux, & Glasford, 2005). Moreover, the focus of attention on the
features of lower status groups and not higher status groups is not reproduced in all content domains (Bruckmüller et al., 2012; Hegarty, 2013). Together, these results suggest that attention may still be focused on women when they are taken to be typical of a category. Consequently, women who author gender research may still become a focus of attention when their research is evaluated.

There is research to suggest that attention to social group membership may be governed by processes beyond prototypicality. Research from the intergroup relations literature also shows that highly identified members of in-groups can assert their own distinctiveness rather than the distinctiveness of the lower status group when boundaries between in-groups and out-groups are indistinct (Jetten, et al., 2004). Findings from a study by Bruckmüller et al., (2012) suggest that perceptions of men as more powerful can extend to contexts in which women are framed as the default gender. Participants read about gender differences in the domain of leadership, for which men were found to be typical, and the domain of leisure, for which women and men were equally typical. Beliefs about men’s higher status and greater power in society were enhanced when men were described as the norm in the context of leadership (i.e. participants read about how women leaders differ from men leaders, rather than how men leaders differ from women leaders). In the domain of leisure however, participants perceived men to be relatively more powerful if women were described as the linguistic norm (i.e. participants read about how men leaders differ from women leaders, rather than how women leaders differ from men leaders). As such, being linguistically framed as the norm and being linguistically framed as the Other is not uniformly advantageous for women and men alike. These asymmetries in the attention to women and men in domains where they are typical appear to run counter to norm theory (Kahneman & Miller, 1987), which claims that typicality governs attention to group members in a universal fashion. Although this was not the main interpretation offered for the results,
the finding suggests the possibility that women can be Otered in domains where women are the norm and where men are not prototypical.

One possibility for why women may be unexpectedly Otered in domains where they are not atypical, may be that general gendered norms, that position men as typical overall, pervade lower status groups where women might otherwise be considered typical (Pratto, et al., 2007; Bruckmüller et al., 2012). In accord, theorising which suggests a man=scientist norm is inherent in scientific structures (Harding, 1986; Morawski & Argonick, 1991) suggests that men could be regarded as typical for all research endeavours. To summarise, men researchers may avoid attention to their gender in research domains associated with women researchers, because men are seen to be generally more typical scientists overall.

Although social cognitive researchers have argued that attention to group members who are otherwise typical of a category can be reconciled with norm theory, contemporary approaches to explaining occupational inequality oppose the idea that typicality is universally advantageous for both men and women, and suggest instead that being atypical may work selectively to men’s advantage. Contrary to traditional, tokenistic accounts of workplace inequality, advantages have been reported for men who work in women-typical professions (Grimm & Stern, 1974; Reskin, 1988; Ott, 1989; Williams, 1992). The glass escalator hypothesis suggests that men could avoid being negatively Otered for the study of women, precisely because they are non-typical researchers. Accordingly, the studies presented in Chapters 2 and 3 found that men were afforded especial privileges when they worked in departments well represented by women, which lead to their increased appointment to high status academic positions. The glass escalator hypothesis is further motivated by anecdotal accounts of psychologists who work in areas researching typically low status groups such as lesbian and gay psychology and diversity psychology. Researchers in these areas sometimes report negative attention to their identities in ways that converge with reviewers’ attention to
gender of the women who authored Gannon et al.’s (1992) content analysis. Here, researchers can be assumed to share an identity with the marginalised people they research, and are often accused of effects of in-group bias distorting their science (Avery, 2008; Hendrix, 2002; Kitzinger, 1997). Thus women might be deemed prototypical of some areas of science, such as the study of women. However women, who share the gender of their participants, may be vulnerable of charges of in-group bias that individual men who research women do not need to face.

The Present Research

The story of Gannon et al. (1992) was the primary motivation for the glass-escalator hypothesis which I tested across three studies in this chapter. It was predicted that women would be regarded as typical researchers for studies about issues pertaining to women, but that their gender would become the focus of attention that would be avoided by a man researcher who is not considered a typical researcher in this field. As patterns of the interpretation of single gender research suggests that research about women is Othered as particular and is evaluated less positively than research about men, negative evaluations and attention to single gender research about women relative to single gender research about men was assessed (H1). As the study of women has been described as visibly conflated with women researchers, whilst domains with which men are associated are invisibly gendered (Ferre et al., 2007) it was hypothesised that women who study women, and men who study men, would be presumed to be typical researchers (H2), that the gender of a woman researcher studying women would be a focus of greater attention than the gender of a man researcher studying women (H3) and that the gender of men studying men would not be a focus of attention (H4). Together, the studies provided a critical test of norm theory (Kahneman & Miller, 1986) by assessing the universality of the affects of typicality in processes of attention to gender.
Experiment 1: Single Gender Studies

A possible source of inequality for women and men researchers is their association with different areas of research. Women are often associated with research about women, which some scholars have regarded as an ‘Othered’, less universal and less prestigious field of research than other areas (Ader & Johnson, 1994; Ferree et al., 2007; Ward & Grant, 1991). Experiment 1 assessed how people attend to single gender research to test the hypothesis that participants would view research about men as more typical or ‘universal’ than research about women, and would focus more critical attention on research about women than research about men. A pre-test assessed whether people with a trauma disorder was presumed to be more typical of men or women. Next, participants were asked to list their thoughts or alternatively critiques for research about post-traumatic stress disorder, to rate how biased they felt the research was and how much funding they thought should be allocated to a programme based on the research findings.

Pretest

Method

Participants. An opportunity sample of 32 post-graduates (53.1% Women, 46.9% Men) from the University of Surrey completed the questionnaire anonymously.

Materials and procedure. The pretest adapted a procedure from Miller et al. (1991). Participants were given a questionnaire study titled “Post Traumatic Stress Disorder and Social Support”. Participants were asked to “imagine a typical person suffering from a trauma disorder” and to provide a first and last name for their imagined person.

Results

A chi-square test of goodness-of-fit was performed to determine whether respondents were more likely to think of a woman or man’s name when asked to imagine a typical person with a trauma disorder. Men’s names were given by 18 respondents, and women’s names
were given by 14 respondents. Preference for men’s names over women’s names was not significant, \( \chi^2 (1, N = 32) = 0.50, p = .480 \), hence a typical person suffering from a trauma disorder may be imagined to be either a woman or a man.

A Chi-square test of independence indicated a marginal significance of the relation between respondent gender and gender of the imagined person with a trauma disorder, \( \chi^2 (1, N = 32) = 3.35, p = .067 \). While the test did not reach significance, men appeared to choose men’s names \( (n = 11) \) more often than women’s names \( (n = 4) \), and to a lesser extent, women chose men’s names \( (n = 7) \) less frequently than women’s \( (n = 10) \).

**Main Study**

**Method**

**Participants.** A total of 86 prospective psychology degree students \( (M = 17.5 \text{ years}, SD = 0.59, \text{range} = 16 \text{ to} 19 \text{ years}, \text{Women} = 90.7 \%, \text{Men} = 9.3 \%) \) participated in the experiment as volunteers at University of Surrey open days. Of these participants, 65 identified as White British, five as Black-British, three as Indian British, three as White Welsh, two as Asian British, one as Caribbean British, one as Egyptian British, one as Filipino British, one as dual heritage British, and one as White Greek.

**Materials and procedure.** Participants were randomly assigned to one of four conditions of a questionnaire study titled “Post Traumatic Stress Disorder and Social Support”. The questionnaires contained a description of research which manipulated the gender of the pseudo-participants\(^1\) (Women versus Men) as follows:

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may

\(^1\) ‘Pseudo-participants’ denote the fictional participants described in the vignettes, whilst ‘participants’ refers to the actual participants for the present studies.
trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 [women/men] with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Participants were then prompted to list up to six thoughts or six critiques on the description (Thoughts versus Critiques).

After completing the open-ended measures, participants were asked “How biased or unbiased do you think the study was?” Participants indicated their response with an ‘X’ on a 10cm line ranging from “unbiased” to “biased”. Participants were then asked:

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

Participants indicated their response on a 10cm line ranging from “0%” to “100%”.

Participants then completed open ended demographic measures. Participants were fully debriefed as to the nature of the study.

**Results**

**Dependent variable calculation.** Open ended responses were coded for the total number of responses listed (which ranged from 0 to 7 responses), the proportion of responses that critiqued the research (values ranged between 0 and 1), and the mention of pseudo-participant gender to critique the value of the research (a dichotomous variable coded as ‘1’
when references were present and ‘0’ when references were absent). The bias and cut funding measure responses were both recorded in centimetres (ranging between 0 cm and 10 cm).

Continuous dependent variables were screened for normal distribution. Standardised skew and kurtosis scores were calculated (see Table 11.). Scores for the proportion of thoughts that were critiques was calculated for the Thoughts condition only, as 100% of responses in the Critiques condition were critical of the research. Scores for Critical Thoughts (n = 44) fell within the recommended cut off for +/- 2.58 for small samples (Field, 2006). Standardised skew and kurtosis scores fell outside normal ranges for Funding Cut and Research bias (+/- 1.96 for medium samples, Field, 2006). Inspection of the plotted data for the Funding Cut measure indicated a fairly normal distribution although the standardised kurtosis scores suggested that it was slightly leptokurtic. Research Bias was highly negatively skewed, indicating that participants generally gave high ratings of bias. As the distribution is consistent with the nature of the questions (which require participants to think critically about the research) transformations were not performed on the data. Non-parametric tests are used for analyses including Research Bias unless otherwise stated. Parametric tests are used for all other variables.

Firstly, correlations were assessed for continuous variables across pseudo-participant conditions (see Table 12). The proportion of thoughts that were critical and the amount of funding cut were significantly positively correlated in the women pseudo participant condition, \( r_s(44) = .48, p = .002 \). There was a non-significant positive correlation between the same variables from the men pseudo-participant condition, \( r_s(38) = .17, p = .294 \). The difference between the two coefficients was marginally significant, \( z = 1.58, p = .057 \) (one-tailed). As such, thinking critically of research was somewhat related to how much funding was cut for research about women, whilst thinking critically of research was not associated
with the amount of funding cut for research about men. There were no other significant associations, all $p \geq .19$.

A univariate ANOVA was used to check whether the number of responses listed was affected by participant gender (Women versus Men), pseudo-participant gender (Women versus Men) and the type of prompt (Thoughts versus Critiques). There were no significant main effects or interactions, all $F < 1$. Research about women and research about men was commented upon to a similar degree regardless of participant gender, pseudo-participant gender and prompt conditions.

Next, the hypothesis that research with women participants would be less positively evaluated than research with men participants was assessed in four ways by examining (a) the proportion of thoughts about the research that were critiques; (b) pseudo-participant gender offered as a basis for critique; (c) research bias ratings and; (d) funding cut ratings. Pseudo-participant gender (Women versus Men) and the prompts given (Thoughts versus Critiques) were used as independent variables in all cases. A 2x2 ranked univariate ANOVA according to Shirley’s (1981) distribution-free method of ranked data was used with Research Bias as the dependent variable. Gender as a Critique (0 = not mentioned, 1 = mentioned) was analysed with a Chi-square. In all other cases a 2x2 univariate ANOVAs was used.

The proportion of responses that were critiques was used to see if participants would be more critical of research with men than of research with women, depending on the type of prompt given. There was a main effect for the prompt (Critiques versus Thoughts) on the proportion of responses that were critical; participants in the critiques prompt condition critiqued the research all of the time ($M = 1.00$), whilst participants in the thoughts prompt condition were critical to a lesser extent ($M = .77$, 95% CI [.71, .85]), $F(1,79) = 37.50$, $p < .001$. There were no other significant main effects or interactions, all $F < 1$. In sum, participants thought more critically about research when prompted to do so.
A Chi Square test was performed to see if pseudo-participant gender would be invoked to critique research depending on pseudo-participant gender and the type of prompt. Overall, participants invoked gender to critique research about women slightly more often than for research about men (57.10% versus 42.90%), but this effect did not reach significance (42.9%), \( \chi^2(1, 86) = 1.27, p = .189 \). There were no significant differences in the invocation of gender when participants were asked for thoughts, \( \chi^2(1, 44) = .28, p = .238 \), or critiques, \( \chi^2(1, 42) = 1.16, p = .238 \). As before, gender was not invoked significantly more often for research about women than research about men when participants were prompted for critiques, (59.40 versus 40.60%), \( \chi^2(1, 42) = 1.16, p = .238 \) or when participants were prompted for thoughts, (54.80% versus 45.20%), \( \chi^2(1, 44) = .28, p = .238 \). Therefore, whether or not pseudo-participant gender was invoked to critique the research was not dependent on pseudo-participant gender or the type of prompt.

Next, Research Bias was examined via a 2x2 ranked univariate ANOVA to test the hypothesis. There were no significant main effects, all \( F < 0.4 \). The two-way interaction between pseudo-participant gender and the type of prompt did not reach significance, \( F(1,81) = 3.19, p = .079 \). Post hoc comparisons revealed no significant differences, all \( p \geq .25 \). Therefore research with men was not considered less biased than research with women, irrespective of whether participants were asked for critiques or thoughts.

Lastly, the funding cut measure examined as before. The main effect for pseudo-participant gender was not significant, although more funding was cut for research about men (\( M = 4.39, 95\% \text{ CI} [3.71, 5.08] \)) than research about women (\( M = 3.83, 95\% \text{ CI} [3.18, 4.47] \)), \( F(1,82) = 1.46, p = .233 \). There was a non-significant main effect for the type of prompt, with less funding being cut by participants who were prompted for thoughts (\( M = 3.75, 95\% \text{ CI} [3.09, 4.45] \)) than for critiques (\( M = 4.47, 95\% \text{ CI} [3.78, 5.15] \)), \( F(1,82) = 2.37, p = .128 \). As all responses in the critiques prompt condition were critical (M=1), a correlation analysis for
Critiques and Funding Cut measures from the thoughts prompt condition were used to assess whether being more generally critical of research was associated with greater funding cuts. The proportion of critiques and funding cut were significantly positively correlated, $r_s(44) = .31, p = .004$. In the thoughts prompt condition, participants who were more critical of research allocated less funding, suggesting that being prompted to think critically about research reduces its perceived value. However, pseudo-participant gender did not affect perceptions of the value of the research.

Discussion

This study shows no evidence of a bias against research conducted on women participants. Neither women nor men were regarded as more typical subjects of the research topic. Research about women was not a greater source of attention for participants than research about men. Research about men was not viewed more favourably than research about women; participants were not more critical of the research, did not view the research as more biased, nor did they cut more funding on the basis of the research findings. Irrespective of whether participants were prompted to be critical of the research or not, research on women and research on men was similarly attended to and evaluated similarly.

Given the findings reported by Ader and Johnson (1994), which suggests research about women is viewed as more particular than research about men, the results of Experiment 1 are surprising. However, participants who thought critically about research about women were marginally more likely to cut more funding than when they thought critically about research about men. As such, single gender research about women and men does not appear to be viewed differently, but thinking critically about research may be provided as rationale for cutting funding for research about women more readily than for research about men.

The results from experiment 1 thus provide partial support for the hypothesis that women researchers may be disadvantaged owing to their association with research about
women. However, the results do not support the hypothesis that greater attention is focused on research about women relative to research about men. A possible reason that the study did not detect such an effect, is that research about women is regarded as more particular than that about men, only when it is presumed to be about ‘women-related’ issues. At the same time, the anecdotes from scholars who research oppressed groups imply that women who research women may be disadvantaged owing to attention to their own gender when they conduct research for which they are typical. Experiment 2 assessed whether evaluations could discredit single gender research on the basis of the researcher’s presumed gender by assessing whether women or men researchers are taken to be typical of single gender research about women or men described in terms that are stereotypically ‘female’ and ‘male’ related.

Experiment 2: Typical Researchers

Are scientists always assumed to be men by default, or is the psychology of women an area where the assumption scientist=women prevails? Experiment 2 adapted the procedure from Miller et al. (1991) and examined whether participants spontaneously called to mind men or women when imagining a psychologist who had researched women or men. The glass escalator hypothesis assumes that the psychology of women is a research domain where women researchers are the expected default. It was predicted that participants would call to mind researchers’ whose genders tended to match those of the adult participants they studied.

Method

Participants. Forty women and 25 men at a British University participated as volunteers (M = 22.0 years, range = 18 to 47 years). Participants who identified as British formed 68.4% of the sample. Participants identified as White British (n = 28), Greek Cypriot (n = 9), Pakistani British (n = 5), and one participant each identified as Arabic British, Arabic Jordanian, Asian-Tumil British, Asian Malaysian, Asian Vietnamese, Bangladeshi British, Black British, Indian British, Kachin Burman, Portuguese Canadian, White German, White
Israeli, White South African, and White Welsh. One participant did not indicate an ethnicity or nationality.

**Materials and procedure.** Participants were asked to read the following description of psychological research, and to “try to form an impression of the study and the psychologist who carried it out”. Participants were randomly assigned to either the women participants or the men participants condition:

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 [women/men] with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

All participants were next asked to “Please write a short description of the psychologist you imagine carried out the research described above.” Participants were instructed to identify the psychologist’s first and second name and to imagine the psychologist’s hobby and their pet. The hobby and pet items were included as ‘distracters’ from the purpose of the study.

Demographic items followed.

**Results & Discussion**

The presumed gender of the researcher was coded as ‘1’ (Woman) or ‘2’ (Man) based on the use of gendered pronouns and the psychologist’s first name. One response in each condition that could not be coded by these methods was excluded from the analysis. A 2x2
chi-square test with condition (Women Pseudo-Participants versus Men Pseudo-Participants) and inferred researcher gender (Woman versus Man) tested the hypotheses. Overwhelmingly, participants called to mind a researcher whose gender matched that of the participants described, in 82% of cases where the participants were men, and 75% of cases where the participants were women, \( \chi^2(1, N = 60) = 19.93, p < .001 \) (see Table 13). These results confirm the hypothesis, including the crucial assumption underlying the glass escalator hypothesis, that research on the psychology of women is presumed to be done by women by default. In other words, the ‘category norms’ (Kahneman & Miller, 1986) prompted by the vignettes were scientists of the same gender as the participants in the studies. These findings form the basis of a critical test of norm theory and the glass elevator hypothesis in the next study.

**Experiment 3: Explaining Why Women or Men Study Women or Men**

Experiment 3 examined the extent to which the genders of women and men researchers and the genders of their pseudo-participants would attract unprompted attention in participants’ explanations for a researcher’s interest in single-gender psychological research. As noted earlier, calling attention to a scientist’s gender to explain their interests could be the grounds for accusing that scientist of ‘bias’ against the norm of the detached, objective scientific observer.

Experiment 3 tested two competing theories about when psychologists’ genders would be spontaneously referenced in explanations of their interests. Theories that link prototypicality to advantage, such as Tokenism (Kanter, 1977) norm theory (Kahneman & Miller, 1987), and androcentrism theory (Bem, 1993) suggest that the gender of researchers that differs from the expected norm will attract attention and will be mentioned more often in explanations of the researchers’ interests. Based on the findings of Experiment 1, these
theories suggest that the gender of the psychologist will be mentioned most often when men are described as studying women and when women are described as studying men.

In contrast, the glass escalator hypothesis suggests that even in domains where women are prototypical workers, that men remain advantaged. The accounts of researchers who conduct research on oppressed groups suggest that their identities are frequently marked as a source of in-group bias when they take an interest in members of their own in-group, even though they are typical authors for such research (Hendrix, 2002; Avery, 2007). Consequently, women who study members of their own gender might be particularly likely to become ‘the effect to be explained’.

In Experiment 3, participants read descriptions of a woman or a man researcher who studied PTSD among women or among men, and wrote explanations of the researcher’s interests. Participants’ explanations were coded for the presence of spontaneous reference to both the researcher’s gender and the participants’ gender. No specific hypothesis was made about references to the participants’ genders. Experiment 2 found that neither research about women or research about men with PTSD was typical or became the focus of attention, thus the data provided a check for whether attention to participant gender would relate to the presumed gender of the researcher.

Method

Participants. Sixty-two women and thirty men recruited from a British university campus participated (M = 27.20 years, range = 18 to 66 years). Seventy-five participants volunteered and 17 participants were paid a £5.00 incentive. The 92 participants identified as follows: 78.3% identified as White (n = 72), 9.8% Asian (n = 9), 4.3% Black (n = 4), 4.3% did not-specify race or ethnicity (n = 4), 3.3% identified as mixed race (n = 3).

Materials. Participants read about a researcher who studied PTSD in all conditions. The gender of the researcher was manipulated (Woman versus Man) as was the gender of the
participants studied by that researcher (Women Pseudo-Participants versus Men Pseudo-Participants). The study was introduced as the ‘Biography Study’ and the vignette read as follows:

Biography of Dr [Angela/Andrew] Murphy

Dr [Angela/Andrew] Murphy is an Associate Professor in Psychology with expertise in clinical and experimental psychopathology. [She/He] obtained [his/her] PhD in psychology from the University of Leicester, and a post-doctoral degree in clinical psychology and psychophysiology from the University of Manchester.

Dr [Angela/Andrew] Murphy grew up in Northern Ireland, and moved to England in 1986. [She/He] has travelled extensively, including a year’s charity work in Uganda where he met Dr M. Burton, who was to become [her/his] good friend and collaborator on numerous influential research projects. On [her/his] return to the UK, Dr [Angela/Andrew] Murphy married [her/his] long-term partner with whom [she/he] had two children.

Dr [Angela/Andrew] Murphy has since become one of the leading researchers in the psychological treatment of anxiety disorders. [Her/His] area of expertise addresses various topics in psychopathology, with particular focus on post traumatic stress disorder (PTSD) among [women as a result of childhood abuse/men as a result of combat].

PTSD is a mental illness resulting from child abuse, combat exposure, and other traumatic events. Approximately 60% of [women who are sexually abused as children / men who experience combat] develop some symptoms of PTSD. Symptoms include intrusive memories and flashbacks of the event, nightmares, guilt, shame, depression, being easily startled, anger, headaches, stomach problems and chest pain.

Dr [Angela/Andrew] Murphy has developed new models and therapies for [women who suffer PTSD as a result of childhood abuse / men who suffer PTSD as a result combat],
which have shown to be more effective than other therapies and/or drugs. Dr Murphy maintains that empathy and sensitivity is central to post-traumatic therapy. [She/He] is a prolific and effective writer, whose tireless persistence has been recognised in awards for excellence in research.

Participants were asked: “In the space below, please list some reasons why you think Dr [Andrew/Angela] Murphy might have chosen to specialise in [women/men] with PTSD.” Blank lines followed which were numbered 1-6 and participants were asked “Please write up to six explanations.” Open-ended demographic measures were presented last.

**Procedure.** Participants were recruited through snowball sampling techniques and the study was conducted within rooms in a psychology department. Participants were randomly assigned to condition and all were fully debriefed upon completion of the materials.

We calculated the total number of explanations generated by each participant (0-6, \( M = 4.33 \)), and within that set of explanations, the presence (1) or absence (2) of reference to the gender of (a) the researcher and; (b) the participant. A typical explanation that referenced the researcher’s gender was “The psychologist is a woman so…”. A typical explanation that referenced the participants’ gender was “Because women are easier to study than men” (see Appendix B for coding scheme). The first author and a second coder, who was unaware of the experimental hypotheses, coded the gender explanations independently. The second coder coded 52 of the 92 materials. An interrater reliability analysis using the Kappa statistic was performed to determine consistency. Agreement was very high for both variables. The raters agreed on all explanations referencing the psychologist’s gender, \( \kappa = 1.00 \). There was one disagreement for an explanation that referenced the pseudo-participants’ gender, \( \kappa = 0.96, p < .0001 \), which was resolved through discussion.
Results

The Total Thoughts variable was normally distributed (z Skew = 0.34, z Kurtosis = 0.11). Across the experiment as a whole, participants were somewhat more likely to comment on the gender of participants than on the gender of researchers, (43.5% versus 29.3%), $\chi^2(1, N = 92) = 3.51, p = .061$. The competing hypotheses were tested with a four-way log-linear regression with four variables; the two independent variables of researcher gender (Woman versus Man) and pseudo-participant gender (Women versus Men), and the two dependent variables of reference to researcher gender (Present versus Absent), and to pseudo-participants’ gender (Present versus Absent, see Table 14). The fully saturated model contained a four-way interaction that was not significant, $z = -.03, p > .90$. In the interest of parsimony a custom model that included only the 3-way interactions, 2-way interactions and main effects was calculated. The likelihood ratio indicated that this model was a poor fit to the data $\chi^2(4, N = 92) = 2.59, p = .629$. However, the model contained two significant 3-way interactions which were relevant to the hypotheses and which did not interact with each other. These were a 3-way interaction involving the two independent variables of researcher gender and participant gender, and the dependent variable of reference to the participants’ gender, $\chi^2(1, N = 92) = 4.55, p = .033$, and an interaction involving the two independent variables of researcher gender and participant gender, and the dependent variable of reference to the psychologist’s $\chi^2(1, N = 92) = 4.40, p = .036$. Both three-way interactions were analysed by calculating Chi-squares to examine two-way interactions further (Field, 2005, p. 716; Tabachnick & Fidell, 1982, p. 902).

The hypotheses referred to the frequency with which participants would mention researchers’ genders when explaining their interests. When the vignette described a study of men with PTSD, participants referenced the gender of women and men researchers at a similar rate, 26.1%, 30.4%, respectively, $\chi^2(1, N = 46), = 0.11, p = .743$. However, when the
vignette described a study of women with PTSD, only 13.0% of participants referenced the
gender of the man who studied women with PTSD whilst 47.8% of participants referenced
the gender of women who studied women with PTSD, $\chi^2(1, N = 46) = 6.57, p = .010)$. This
finding is inconsistent with the prototypicality hypothesis that researchers whose identities do
not fit normative expectations will become ‘the effect to be explained.’ Rather, together with
Experiment 1, these results are consistent with glass escalator hypothesis; although women
researchers were typical of the study of women, participants invoked gender to explain why
women - but not men - studied women with PTSD.

Next, the contingency involving reference to the participants’ gender was examined.
Participants were no more likely to reference the gender of men with PTSD described as
having been studied by either a woman or a man (47.8%, 39.1% respectively), $\chi^2(1, N = 46),
= .354, p = .552$. However, 26.1% of participants referenced the gender of women with PTSD
who were studied by a woman whilst 60.9% referenced the gender of women with PTSD who
were studied by a man, $\chi^2(1, N = 46), = 5.66, p = .017$.

In sum, the references to either the pseudo-participants or the researcher varied in the
conditions where women with PTSD had been studied. In these conditions, the attention to
gender shifted towards women pseudo-participants studied by men in one condition, and
away from pseudo-participants toward the woman researcher in the other.

**General Discussion**

The results of Studies 1, 2 and 3 jointly show that the genders of researchers and
pseudo-participants do not automatically become salient simply because they are atypical in a
given domain. The participants’ spontaneous attention to the gender of women who
researched women is consistent with the observations of researchers of oppressed groups,
who say that their identities are selectively evoked to construct accusations of bias (Avery,
2008; Hendrix, 2002; Kitzinger et al. 1998). In line with arguments that some areas of
research can be invisibly gendered (Ferree et al. 2007), men were typical researchers of behaviour about men, but attention paid to the gender of researchers who studied men, or the gender of the men being studied, was not related to researcher gender. In contrast, when women were studied, gender-related attention was directed towards the pseudo-participants said to be studied by a man, and shifted towards the researcher when that researcher was named as a woman. In other words, attention was shifted away from the man researcher when he was typical, but towards the woman researcher when she was typical. As such, it seems unlikely that gender-based advantage or disadvantage in the domain of the psychology of women can be attributed solely to automatic processes pertaining to group typicality.

Although participants generally assumed that a woman was a typical researcher of single gender research about women, the results run counter to the prediction that women will be positioned at a disadvantage because research about women is Othered. To the contrary, research about women was not evaluated less favourably than research about men, nor was it a focus of greater attention. In fact, the gender of women pseudo-participants was the primary focus of attention only when a man was described as studying them. Participants who were more critical of the research were, however, marginally more likely to cut funding when the research was about women. All the same, the results do not suggest that this disparity is attributable to an undue focus on research about women. A possible explanation for the effect whereby more funding was cut for research about women could be that research flaws were seen as greater cause for cutting funding for research about women than for men. However, as more funding was cut for research about men overall, participants may have simply felt a greater need to justify their withdrawal of funds for research about women than their withdrawal of funds for research about men.

The idea that women’s disadvantage is not directly attributable to the Othered nature of their research was supported by the result in Experiment 3, which found that the gender of
women pseudo-participants became the primary focus of attention, only when a *man* was described as studying them. The experimental manipulation for pseudo-participants did however change the gender of the pseudo-participants and the means through which they acquired PTSD. The PTSD aetiology manipulation introduced gender-stereotypical material about pseudo-participants, which could reasonably become the focus of attention. This manipulation makes it difficult to isolate whether shifts in attention were driven by the manipulation of gender or the PTSD aetiology. Nonetheless, the fact that the research about women was Othered only when presented by a man (be this related to the described PTSD or to the gender of the pseudo-participants) suggests that disadvantages experienced by women researchers cannot always be attributed to the Othered nature of their research.

The findings do not support the idea that the Othering of women researchers is governed by a male=scientist norm. Whilst this hypothesis suggests men may be taken to be more typical of research across the board, the gender of women researchers was the primary focus of attention only when they studied women, and not when they studied men. As such, the Othering of the woman researcher is unlikely to result from the universal positioning men as the typical ‘researcher’ norm from which women are seen to deviate.

Norm theory assumes that failure to mention a group attribute is due to the implicit nature of the attribute. If as the results suggest, a man who studied women would be perceived as surprising, it seems likely that participants could have perceived his gender, but chose or did not feel the need to mention it. However, whilst the results show that participants did not mark the gender of men, they do not directly tell us whether gender was implicit or salient (i.e. noticed but not mentioned). The central question here is whether the failure to mention a target’s gender is cognitively guided, or selectively avoided when the target belongs to a high status group.
The results are clearly consistent with the glass escalator hypothesis. They suggest that women researchers’ genders may be a salient prompt to attribute bias when they are typical in a given research context. The finding that the gender of women can be salient when they are typical of a given academic domain provides evidence for the kind of evaluations that could drive inequality in modern UK universities. In Chapter 3, psychology departments with more men academics tended to do better on the NSS 2012, although women typically take on more teaching responsibilities than men (Bellas & Toutkoushian, 1999; Park, 1996) and students expect that women should do as such (Bennett, 1982). Thus, whilst women may perform academic roles for which they are regarded as typical, their performance in these roles may be evaluated unfavourably compared to men who perform those roles. However, whilst Experiment 2 shows greater gender-related attention to women who research women, it does not demonstrate that these women researchers are evaluated more negatively. The researchers of oppressed groups suggest that their identities are selectively evoked in order to construct accusations of bias (Avery, 2008; Hendrix, 2002; Kitzinger et al. 1998). However, a second coding of the explanations for explicit mention of ‘gender bias’ found no such references within the data.

In summary, the results showed that Othering in scientific research is not universally governed by cognitive processes that follow directly from the prototypicality of researchers within social categories as previous models suggest. Instead, the Othering of both participants and researchers is related to the perceived gender of the researcher. The results supported the central premise of the glass escalator hypothesis, that attention to the gender of women researchers who are assumed typical of the study of women, would be greater than attention to men researchers. This attention to the gender of women researchers who study women motivates the hypothesis that the gender of women researchers is selectively invoked as a basis for accusations of author bias.
Some questions remain unanswered from the studies in this chapter. Firstly, it was not assessed whether attention to women researchers provides a basis for accusations of researcher bias. Secondly, although women researchers were found to be more typical of research about women and were the focus of greater attention, the relationship between perceptions of attribute surprise and the focus of attention as predicted by norm theory were not directly assessed. Additionally, researchers predict that women researchers are conflated with the study of gender issues, in addition to the study of women alone which was the focus of the present studies. Finally, although the failure for women to be the focus of attention when studying men ran counter to the male=scientist hypothesis, more conclusive evidence would be provided by assessing the application of the criterion of objectivity according to researcher gender and race. Chapter 5 presents two studies, the first focusing on women who study women, the second on Black men who study Black people. Both were designed to inform the remaining issues of interpretation.
Chapter 5: Are White Men Accused of In-Group Bias?

Taking the Glass Escalator to ‘Objective’ Research about Women and Race

Abstract

Chapter 5 presents two studies that assess how attention to a researcher’s inferred identity can translate to accusations of in-group bias. Anecdotal accounts suggest that attention to researchers’ identities could be selective and operate as a function of ‘glass escalator’ (Williams, 1992)-type effects. Here White men are assumed to be objective, whilst women and Black people are accused of the effects of in-group bias distorting their gender and race research. The studies directly tested whether attention the researcher’s gender or race is attributable to cognitive processes pertaining to prototypicality as predicted by norm theory (Kahneman & Miller, 1986) or selective processes that privilege White men. Experiment 4 presented participants with research on the representation of women and men in science, described as the work of a woman or man researcher. Experiment 5 presented descriptions of research about racial equality in the evaluation of professors, with a photo of a White or Black man described as the researcher. Measures of surprise, bias, and the accusation of authors as ‘gender’ or ‘race’ biased were used to test the hypotheses. White men were more likely than women and Black men to avoid accusations of in-group bias although their gender and race were highly surprising. In addition, the likelihood White men would avoid accusations of bias was enhanced when they were regarded as especially surprising. The implications of the results for theory that conceptualises privilege and disadvantage as interrelated outcomes of automatic cognitive processes pertaining to prototypicality and perceptibility are discussed.
Introduction

Initial reviewers questioned the methodology… on the grounds that all coders were women and were aware of the purpose of the study (Gannon et al., 1992, p. 391).

One question was continually asked of me… ‘Do you think that being Black introduced bias into your study?’, (Hendrix, 2002, p. 153).

In psychological science, ‘objective’ enquiry is commonly defined as that which is “not biased by someone’s point of view” (Judd, Smith, & Kidder, 1991, p. 5). Under the present peer-review system of journal submissions, and the meritocratic assessment of research outputs in academic institutions, traditional scientific evaluative criteria tend to be applied to all research. However, the anecdotal accounts of researchers who study issues relating to historically oppressed groups suggest the principle of objectivity is often invoked to evaluate their research more than in other fields (see Avery, 2008; Hendrix, 2002 on diversity and race related psychology, and Kitzinger, 1997 on lesbian and gay psychology). Here, researchers can be assumed to share an identity with the people they research, and are often accused of effects of in-group bias distorting their science.

Chapter 4 presented an account of four women researchers – Gannon, Rhodes, Luchetta and Pardie – who submitted for publication a content analysis of psychology journal articles published between 1970 and 1991 looking at scientific gender norms. Their article indicated reductions in sexist practices but warned that inequalities remained and needed addressing. Although agreement between coders was high, reviewers queried these results “on the grounds that all coders were women and were aware of the purpose of the study” (Gannon et al., 1992, p. 391). As a result, Dan Segrist - a man - was added as a coder and an author of the final published article. Their story suggests their gender as women made them
vulnerable to questions regarding their objectivity when researching gender related issues, whilst a man was implicitly regarded as unbiased by his own gender or point of view.

The experience of Gannon et al. (1992) may seem surprising in light of the universal systems of research evaluation currently employed in academia, but their experience is not exceptional. Similarly contradictory applications of the criterion of objectivity - apparently pertaining to researcher race - have been reported by an American researcher named Professor Katherine Hendrix. In 2002, Hendrix published an article on her experience of her doctoral studies, which attended to the contributions of professors of colour and the challenges they faced. Namely, her thesis addressed (a) how professors engage in communication to build classroom credibility, and; (b) how their race influences the establishment of credibility. Hendrix reported anticipating various reliability and validity issues fundamental to the investigative process. However, the predominant question asked of her by fellow academics was “do you think being Black introduced bias into your study?”.

Hendrix contended that her own research was certainly no more biased by her race than the research of a White person who studies White people. Race-related research is often visibly conflated with researchers belonging to racialised groups whilst there are other research areas that are not normally linked to authors belonging to any particular social group (see Avery, 2008). Topics outside race and diversity research are not usually conceptualised as being ‘about’ race, but it is well documented that White people overrepresent these fields both as participants (Gosling et al., 2004) and authors (e.g. HESA, 2013). The practical consequence is that White researchers will typically study other White people thus such research will often be (implicitly) about White people and interpreted from a White perspective. That said, the effect of the ‘Whiteness’ of these researchers on their ability to conduct objective studies about White people is rarely a raised as a research consideration.

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2 In the U.S. ‘professors’ occupy several levels of the educational system, and the term is often used to refer to any college or university teacher.
Consequently, Hendrix argued that the accusations of race bias she experienced can function as a “straw-person” argument that revokes the taken for granted objectivity typically enjoyed by White researchers.

In Chapter 4, women researchers were conflated with the study of women, yet their gender became a focus of attention that men otherwise avoided. Hendrix’s account suggests that attention to the identities of researchers belonging to historically oppressed groups, could function to discredit their work by revoking the taken for granted objectivity enjoyed by historically privileged group members. Taken together, this suggests that women and Black people working in research could be presented with a double edged sword; they are visibly conflated with the study of issues relating to their historically oppressed social group, yet are subject accusations of in-group bias which call into doubt their ability to perform objective research. Moreover, it suggests that White men could be granted the privilege of objectivity in research domains in which they are not typically associated.

**Inequality as a Consequence of a ‘Masculinist’ Science**

Some feminist theorising that acknowledges the vulnerability of science to bias argues that inequality is inherent within its ‘masculinist’ scientific structures (Blair, Brown, & Baxter, 1994; Harding, 1986; Morawski & Agronick, 1991). Theory that locates inequality within masculinist scientific structures suggests that women, regardless of their topic of study, will be evaluated as less objective than a man. This explanation is viable for explaining why the gender of women researchers could become a focus of greater negative attention than the gender of men researchers. Indeed, it could readily account for the story presented by Gannon et al., whereby a man but not women was presumed to be an objective researcher of gender-related research. However, the explanation of a ‘masculinist science’ sits less comfortably with negative attention to the race of a Black researcher as captured in Hendrix’s account. One possibility is that Hendrix’s gender as a woman meant that she was singled out
as ‘subjective’, thus indirectly rendering her skin colour a salient source of bias. Hendrix’s argument suggests that the accusations of bias pertain to race not gender. As such, Black men may also be subject to unfair accusations of researcher bias. Clearly, if Black men are accused of researcher bias and White men are not, then the unequal application of the criterion of objectivity is likely to be governed by processes beyond the masculinist structures inherent in science.

**Privilege as a Conscious, Selective Process**

The studies presented in chapter 4 revealed that women researchers were thought to be typical of the study of women. However, when a woman was described as studying women, their gender became the focus of greater attention than the gender of a man described as doing the same research. This finding ran counter to the norm theory hypothesis that attention is focused on atypical attributes: the gender of typical women, not the gender of atypical men, became linguistically marked. This suggested that people will not necessarily mark the gender of men when they are non-typical researchers. However, this result also called into doubt the assumption that attributes are not mentioned because are imperceptible. If, as norm theory (Kahneman & Miller, 1986) predicts, the attributes of non-typical group members are surprising, then people would have been surprised that a man was studying women. If this was the case, then his gender could have been perceptible, but for some reason, had not been marked. The results from Chapter 4 suggest that there could be some instances in which the identities of group members go unmarked either for reasons beyond group typicality, beyond the salience of group attributes, or beyond both.

Theorising by Derek Avery (2008) motivated my hypothesis that the race of White researchers can be salient when they are perceived as non-typical researchers. However, Avery suggests that the salience of their race could work to their disadvantage. Avery was prompted to question how and when inferred researcher identities became an important
research consideration following a discussion with a graduate student in industrial and organisational psychology. This student asked Avery “if belonging to a racioethnic majority (i.e., being White) would somehow obscure the development of the ability to conduct good diversity research” p. 55. As a result of this conversation, Avery (2008) questioned why the race of the researcher – White or Black - becomes important in diversity research whilst the identity of the researcher is rarely considered in other areas. For example, the personality researcher would not be expected to have a personality type equivalent to or divergent from to those she studies, nor would her personality type be seen to affect her ability to be objective. Certainly, rather than focusing on race, Hendrix’s objectivity could just as easily been questioned on the grounds that she was a professor studying the establishment of professor credibility. Avery’s theorizing suggests the race of non-typical White researchers can be salient, and that this might call into question their ability to conduct objective race-related research. In this case, processes of typicality do not govern whether or not the inferred identity of a researcher becomes salient and marked in accusations of bias. However, the marking of that identity - and any associated doubts regarding objectivity - is still compatible with the idea that salient group attributes become marked linguistically and that this is disadvantageous for the researcher.

On the other hand, Hendrix’s account suggests neither typicality nor salience govern how or when the inferred identities of researchers become invoked as a source of bias. Hendrix’s account of accusations of bias functioning as a “straw-person” argument to selectively discredit the work of Black people, and revoke the taken for granted objectivity enjoyed by White man, suggests that identities of typical researchers are selectively marked, not because they are uniquely salient, but for ideological reasons (Hendrix, 2002).

Some theories of racial bias suggest that in some instances, bias in favour of privileged groups can indeed occur when their group membership is a perceptible and salient
factor. For instance, juror decisions that favour White defendants over Black defendants can occur when race is a salient but unmentioned background factor (Sommers and Ellsworth, 2000). In-group projection researchers have often found that attention to group features can be motivated by group interests and ideologies (Mummendey & Wenzel, 1999) rather than the perceptibility of group attributes. Accordingly, Williams (1992) ‘glass escalator’ suggests that men experience occupational privileges in work domains that are typical of women and where the gender of men workers is likely to be salient. Moreover, arguments that promote the encouragement of men into psychology following the increased representation of women suggest that the careers of men may be assisted because they are perceived as members of a non-typical but valued group (see also Hultin, 2003). Arguably, knowledge that White men are less well represented in gender research fields (APA, 2012; Grant & Ward, 1991) and race-related fields (Hall & Maramba, 2001) could similarly provide rationale for granting White men the privilege of objectivity. In sum, it is plausible that the identities of researchers who belong to privileged groups can go unmentioned for ideological reasons rather than automatic cognitive responses pertaining to imperceptibility.

**The Self-Interest of Disadvantaged Groups**

Evidence from political psychology suggests that the political bent of individuals belonging to certain social groups is conflated with ideological positions that are viewed as self interested (e.g. Greitemeyer, Fischer, Frey & Schulz-Hardt, 2009; O’Brien & Crandal, 2005). From this view, researchers may be regarded as objective or biased, not because their identities are a more typical or more salient and therefore more readily invoked as a source of bias, but because people hold asymmetrical beliefs about the views of people belonging to different social groups.

The default ideological position is generally conservative and status quo maintaining (Skitka, Mullen, Griffin, Hutchinson & Chamberlin, 2002) and research indicates ideologies
that challenge this position are regarded as more biased. For example, challengers of the status quo are evaluated as less open, less reasonable, greater contributors to the conflict (Robinson & Kray, 2001), and more extreme than defenders (Keltner & Robinson, 1997). Moreover, it is more often the case that citizens will attribute studies with liberal findings to the liberalism of the researcher than conservative findings to the conservatism of the researcher (MacCoun & Paletz, 2009). As such, a researcher who supports the status quo may be seen as less self-interested and more objective than those who challenge it. Arguably, researchers belonging to historically oppressed groups may be accused of researcher bias when they present ideas that challenge the status quo.

On the other hand, research suggests that judgments about arguments are not always based on the actual ideological position of the source, but on the presumed ideological position of the source. Group characteristics have been shown to influence whether people discount behaviour of those group members as self interested, with those belonging to a small rather than a large group, a low rather than a high status group and a group that challenges rather than supports the status quo, being labelled self interested (O’Brien & Crandal, 2005). Greitemeyer, et al. (2009) asked German citizens to evaluate left-wing or right-wing arguments presented by a politician who was affiliated with a right-wing or left-wing party. The politician’s party affiliation was correctly labelled, incorrectly labelled or not labelled at all. Unsurprisingly, the politicians’ arguments were evaluated more favourably by their respective voters when party affiliation was correctly labelled. However, this effect diminished when arguments were unlabelled. In fact, when the arguments and their source were incorrectly labelled, participants actually favoured the arguments of the opposing party over the arguments of their preferred party. This finding suggests that judgments about research arguments could therefore be attached to the presumed source of the message, rather than the content of the research itself. As such, the vantage point of researchers presumed to
belong to small, low status groups, and assumed to challenge the status quo - such as Black people and women - may be labelled as biased irrespective of their actual ideological position or the content of their research. Likewise, if White men are presumed to hold a neutral political position, people may not choose to accuse them of bias for gender and race research even though they may hold beliefs about gender and race that colour the interpretations of their research.

**The Present Research**

Two studies assessed whether ‘glass escalator’ effects in research about gender and research about race issues could privilege White men in avoiding accusations of bias, although their gender and race are perceptible and viewed as non-typical for the study of those issues. The studies were chiefly motivated by anecdotal accounts from researchers in the fields of gender and race studies. These accounts suggest that whilst women and Black researchers are typical of these research areas, their identities become the focus of negative attention in accusations of in-group bias which White men avoid. Experiment 4 tested whether a man would be a surprising person for researching the representation of women and men in science, but would be less likely to be judged as biased than a woman counterpart who does the same. Experiment 5 then assessed whether a White man would be a surprising person for researching the influence of race on the establishment of professor credibility, but would be less likely to be judged as biased than a Black man who does the same.

These hypotheses run counter to a number of established theories which attribute group privilege to automatic behaviour directed by cognitive processes. It contends with claims inherent in several theories of Othering and privilege, including the assumptions that, 1) attention to group attributes (such as gender and race) occurs when group members are non-typical and failure to attend to group attributes occurs when group members are typical; 2) failure to attend to attributes of privileged groups is due to the irretrievability of
knowledge about those attributes and attention to discriminated groups occurs because their attributes are distinctively salient; 3) typical group members are at an advantage and atypical group members are at a disadvantage; 4) the perceptibility of social group attributes is universally disadvantageous for privileged and oppressed groups alike, and; 5) the effects of prototypicality are universal for privileged and oppressed groups alike. The predictions also offset arguments that attribute inequality to science, these being 1) that the privilege granted to White researchers is inherent to masculinist structures of science, and; 2) scientific structures guard against bias in research evaluation.

**Experiment 4: Gender Bias**

Experiment 4 built particularly upon the events surrounding the publication of Gannon et al. (1992) in which a man scientist raised the level of trust in research conclusions presented by women researchers on the changing patterns of gender representation in science.

In Experiment 4, participants read about a woman or a man researcher who studied the increase in the number of women in the profession of psychology in recent history. The hypotheses were tested by judgments of both surprise and bias. It was predicted that men would be more surprising authors of this research than women, but that research by men would be judged less biased than research by women, and that men researchers would be accused of ‘gender bias’ less often than women researchers. To explore whether such findings would be robust across a range of interpretations of the study findings, the study also manipulated whether the researchers interpreted their findings in a way that challenged the status quo or accepted that adequate progress had been made.

**Method**

**Participants.** Seventy-eight women, 11 men and three people who did not report their gender participated (M = 17.9 years, range = 17 to 34 years, 85 % women, 12 % men, 3 % indicated no gender). All were prospective psychology degree students who visited a British
university on an open day. Participants identified as White British (n = 60), British (n = 8), 3 as Asian Filipino (n = 3), Chinese (n = 2) or one each as Australian, White Eastern-European, Asian Indian, Turkish, Asian British, Indian, Black Caribbean, White non-British and Asian Sri Lankan. Eight participants did not report ethnicity (n = 8).

**Materials and procedure.** In classroom contexts, participants were presented with vignettes titled “Biography Study”. Two factors were manipulated to create four versions of the materials; researcher gender (Woman versus Man) and research interpretation (Progressive versus Status-Quo). The first three paragraphs of the materials read as follows:

Dr [Angela/Andrew] Murphy

Dr [Angela/Andrew] Murphy is an Associate Professor in Psychology with expertise in occupational psychology. Dr Murphy grew up in Northern Ireland, and moved to England in 1986. [She/He] has travelled extensively, including a year’s charity work in Uganda where [she/he] met Dr M. Burton, who was to become her good friend and collaborator on numerous influential research projects. On [her/his] return to the UK, Dr [Angela/Andrew] Murphy married [her/his] long-term partner with whom she had two children. Dr [Angela/Andrew] Murphy has since become one of the leading researchers in the study of the representation of women in occupational domains.

Dr [Angela/Andrew] Murphy’s most recent research focused on the representation of women in psychology. Historically, psychology was an occupation dominated by men, with very few women entering the domain. However, recent research indicates that more and more women are entering the field. Dr Murphy’s research has looked more closely at this trend to uncover the level of gender equality in psychology.

Looking at data collected by various psychological associations and psychology institutions, Dr Murphy found a global trend for women to form the majority of psychologists. Dr Murphy found women to be particularly well represented in domains
such as gender studies, developmental psychology and qualitative studies, whilst men were well represented in other fields.

The final paragraph either challenged or accepted the new status quo of gender segregation in psychology. In the challenge condition, the final paragraph read as follows:

Together, these findings led Dr Murphy to conclude that while women have made considerable inroads into psychology, stereotypes about women being ‘relational’, ‘moral’ and ‘sensitive’ lead to assumptions about the type of work women are most capable of performing. Consequently, women are deemed more suited to the study of areas such as developmental and gender research than to other research areas. Dr [Angela/Andrew] Murphy concluded that the overall number of women working in psychology does not necessarily reflect improvements to the general level of gender equality experienced by those working in the domain.

In the condition in which the status quo was accepted, the final paragraph read as follows:

Together, these findings led Dr Murphy to conclude that women have made considerable inroads into psychology and that the relational, moral and sensitive approaches women naturally adopt, privilege them to the study of areas such as developmental and gender research. Dr [Angela/Andrew] Murphy concluded that the number of women working in psychology reflects improvements to the general level of gender equality experienced by those working in the domain.

Participants were presented with the dependent measures next. An open-ended item was presented first. “What are your thoughts about what you have just read? Please write up to 6 thoughts”. Six blank lines followed. The next three items were presented using 10cm continuous lines. Participants were asked to “Please mark an ‘X’ on the line” to indicate their responses. The first question assessed researcher bias and was anchored by the terms biased and unbiased:
“How biased do you think the research described was?”

The second and third items assessed interpretation surprise and gender-related surprise respectively. Both were anchored by the terms surprising and unsurprising:

“How surprising was it that Dr [Angela/Andrew] Murphy interpreted the results as [she/he] did?”

“How surprising was it that Dr Murphy’s research was conducted by a [woman/man]?”

Participants then completed open-ended demographic measures and were debriefed.

Coding. Three variables were extracted from the open-ended measure. First, the total number of thoughts generated was calculated (0-6). Next, each thought was coded as a 1 if it critiqued the research and a 0 if it did not. The proportion of the total number of thoughts that were critical thoughts was calculated. Thirdly, each open-ended response was coded as 1 when the researcher was accused of ‘gender bias’ and 0 when the researcher was not accused.

The research bias, interpretation surprise, and researcher gender surprise items were scored on 100-point scales by locating participants’ responses on the 10cm lines. Thirty-six of the materials had line lengths of 9.65cm rather than 10cm owing to a photocopying error. To score these responses on a 100-point scale a percentage score was calculated\(^3\). All three items were reverse-coded so that higher numbers reflected greater perceived bias and greater perceived surprise.

Results

**Preliminary analysis.** Continuous variables were screened for normal distribution (see Table 1). The \(z\) scores for skew and kurtosis for *Thoughts* fell within normal ranges (recommended +/- 1.96, Field, 2006). Kurtosis scores fell within normal ranges for all variables but *Gender Identity Surprise*. *Critiques* and *Interpretation Surprise* were positively

\(^3\) Line length, originally included as a variable for the main analyses, did not influence the results.
skewed and *Research Bias* was negatively skewed (see Table 15). Transformations failed to appropriately normalise the data thus non-parametric tests were used unless otherwise stated.

**Main Analysis**

Correlations were assessed for variables across Target Gender conditions (see Table 2). Across Target Gender conditions, accusations of gender bias were associated with a greater proportion of thoughts that were critical, and surprise regarding the researcher’s gender was associated with surprise regarding their interpretation of the research. Two correlations differed significantly by target gender condition. First, for men targets only, high surprise regarding the researcher’s topic choice was associated with fewer thoughts being listed for the researcher. Second, for the woman target researcher only, low surprise regarding the researcher’s gender was associated with accusations of gender bias. These results were explored further using Fisher Exact tests to indicate whether associations between variables were significantly different across the gender conditions. There were three instances when differences reached significance. These were *Thoughts*\**Gender Surprise*, \( z = -2.04, p = .021 \); *Critiques*\**Research Bias*, \( z = 4.42, p < .001 \); and *Gender Bias*\**Gender Identity Surprise*, \( z = 1.91, p = .028 \). Participants who read about a man researcher produced fewer thoughts when they were more surprised that the researcher was a man and listed more critiques when they rated his research as more biased. These relationships were not present for participants who read about a woman researcher. Participants who read about a women researcher were more likely to accuse her of gender bias when they were not surprised that the researcher was a woman. This association was not evident for participants who read about a man researcher (See Table 16).

Means, t-tests and Mann-Whitney U tests for variables by Target Gender are displayed in Table 17. The tests indicated significant differences across the conditions; when the researcher was a man, significantly fewer thoughts were listed, he was less likely to be
accused of gender bias, his research was rated as less biased and his gender was more surprising than when the researcher was a woman. *Critiques* and *Interpretation Surprise* did not differ significantly across the Target Gender condition. These results support the hypothesis that the gender of a man would be marked in accusations of author bias less often than would the gender of a woman, and his research would be rated as less biased, despite being a surprising author for the study of women.

To see whether the effect whereby men were accused of gender bias less often than women was affected by whether or not the researcher provided a research interpretation that supported the status quo or challenged the status quo, a 2x2x2 Chi-square analysis was run with *Target Gender* (Woman = 0 versus Man = 1), *Status Quo* (Challenged = 0 versus Accepted = 1) and *Gender Bias* (Not-mentioned = 0 versus Mentioned = 1) as variables. In the condition where the status quo was supported, the man was accused of gender bias 22.7% of the time and the woman was accused 35.7% of the time. This difference did not reach significance, $\chi^2(1, N = 46) = 1.18, p = .222$. In contrast, the man was significantly less likely to be accused of gender bias than the woman in the condition where the status quo was challenged, with 9.1% of men and 45.8% of women being accused in those conditions, $\chi^2(1, N = 46) = 7.64, p = .006$. When data from both Status Quo conditions were grouped together, the man was less likely to be accused of gender bias than the woman, with the man being accused 15.9% of the time and the woman being accused 41.7% of the time, $\chi^2(1, N = 92) = 7.35, p = .006$. Based on the odds ratios, the woman was more likely to be accused of gender bias than not as compared to the man by 0.74 times in the Status Quo Supported condition, by 8.46 times in the Status Quo Challenged condition and by 3.78 times overall. These findings suggest that participants were quicker to identify women researchers as ‘gender biased’ and that this difference was greatest when the researcher voiced progressive interpretations of their findings. Unsurprisingly, participants who accused the researcher of gender bias
produced a greater proportion of critical thoughts about the study overall, \( r(90) = .36, p < .001. \)

To see whether the effects of researcher gender on the dependent variable were robust across the interpretation conditions, all continuous dependent variables were examined using 2x2 ranked univariate ANOVAs according to Shirley’s (1981) distribution-free method of ranked data, with researcher gender (Woman versus Man) and status quo (Challenged versus Accepted) as independent variables.

Firstly, the variables extracted from the open-ended responses were examined; these were the total number of thoughts listed and the proportion of thoughts that were critical. Firstly, Thoughts was examined to test the hypothesis that the woman researcher would be a greater focus of attention than the man researcher. Significantly fewer thoughts were listed in response to research by a man than to research by a woman (M = 3.70, 4.75 respectively), \( F(1, 88) = 13.96, p < .001, H = 8375.93, \chi^2 (1, N = 92) = 12.34, p < .001. \) Neither the main effect of the research interpretation nor the interaction between two independent variables reached significance, both \( F < 1, \) both \( \chi^2 < 1, \) all \( p > .3. \) The Critiques variable was assessed next. The proportion of the thoughts that were critical of the study did not vary by researcher gender, research interpretation or their interaction, all \( F < 1, \) all \( \chi^2 < 1, \) all \( p > .4. \) Thus, participants were not more critical of research of either interpretation, or more critical of research by women or men scientists. The woman researcher was, however, the focus of greater attention than the man researcher, which supports the hypothesis that attention to group members does not relate to group prototypicality.

The three rating measures of Research Bias, Gender Identity Surprise and Interpretation Surprise were assessed respectively. Research by men was rated as less biased than research by women (Ms = 56.58, 66.34 respectively), \( F(1, 84) = 8.51, p = .005, H = 8375.93, \chi^2 (1, n = 92) = 7.621, p = .006. \) Neither the research interpretation nor the
interaction between independent variables affected ratings of bias, both $F < 2.3$, both $\chi^2 < 2.1$, all $p > .13$. However, a non-significant trend was observed in the conditions in which the status quo was challenged for the woman researchers to be rated as more biased than the man.

Researcher gender, research interpretation and their interaction did not affect perceptions of the surprisingness of the research interpretation, all $F$ and $\chi^2 < 1.93$, all $p > .16$. Participants reported more surprise that the research was conducted by a man than conducted by a woman (Ms = 49.7, 30.7, respectively), $F(1, 85) = 16.89, p < .001$, $H = 9606.87, \chi^2(1, N = 92) = 14.39, p < .001$. Neither the research interpretation nor its interaction with author gender affected this measure of gender-related surprise, both $F$ and $\chi^2 < 1$.

In sum, perceptions of surprise regarding the researcher’s gender, research bias and general attention to the researcher and their research related to the gender of the researcher, but not to whether or not the researcher supported or challenged the status quo. As such, participants were more surprised that the research had been conducted by a man researcher, considered his research to be less biased than the woman researcher’s, and made fewer references to him or his research. The typical group member was therefore the focus of negative attention, which undermines the idea that the prototypicality of privileged groups is an “essential” resource for maintaining power and advantage.

Next, the hypothesis that researcher protoypicality is not directly related to attention to researcher gender was tested. A Mann-Whitney $U$ test was run treating Gender Bias ( Mentioned versus Not-mentioned) and Gender Identity Surprise as variables. There was a slight trend for participants to mention gender bias more often when they were surprised about the psychologist’s gender, however the mean rank for Gender Identity Surprise when gender bias was mentioned (n = 64, M = 48.02) was not significantly higher than when gender bias was not mentioned (n = 25, M = 37.28), $U (87) = 607.00$, $z = -1.76$, $p = .078$. In
other words, the presumed gender of surprising researchers was not significantly more likely to be marked in accusations of bias than the presumed gender of unsurprising researchers.

Finally, the glass escalator hypothesis that the man’s non-prototypical status would amplify his advantage was tested. A three-step hierarchical logistic regression was performed to assess whether gender surprise moderated the relationship between accusations of gender bias and presumed researcher gender. The continuous Topic Surprise predictor was grand-mean centred and categorical variables were coded as either 0 or 1. In the first step Gender Bias was entered as the DV and Target Gender as the IV. For step 2 Topic Surprise was added into model 1 as a predictor. In the final step, the interaction term for Target Gender and Topic Surprise was added to the model.

Model Fit. DFBeta values for the constant and Target Race were all less than 1. None of the expected leverage values for the cases exceeded the recommended value (calculated at three times the average [3 x 0.045] as recommended by Stevens, 1992). All Cooks Distance values < .56. Standardised residuals for 86 of the 89 cases included in the analysis were within +/- 1.96. One case was within +/- 2.58 (case 47 = 2.05) and a further two cases exceeded this parameter (case 12 = 2.76, case 16 = 3.84). In each instance, participants were in the condition where the researcher was a woman who supported the status quo, they each accused the researcher of gender bias and scores for Gender Identity Surprise were 37.4, 50.5, and 65.0 respectively. There was no methodological reason for removing the cases.

In step 1, a test of the model against a constant-only model was statistically significant, indicating that Target Gender reliably distinguished between the presence and absence of accusations of Gender Bias, $\chi^2(1, N = 89) = 6.57, p = .01$. Nagelkerke’s $R^2$ of .102 indicated a weak relationship between prediction and grouping. In step 2, Gender Identity Surprise was entered into the regression equation. The prediction of the grouping by the model was significant, $\chi^2(1, N = 89) = 7.71, p = .021$, but the improvement of the predictive
power of the model with the addition of *Gender Identity Surprise* as a predictor did not reach significance, $\chi^2(1, N = 89) = 1.14, p = .285$. In step 3, the interaction term for *Target Gender* and *Gender Identity Surprise* was included in the model. The model significantly predicted *Gender Bias* accusations, $\chi^2(1, N = 89) = 11.82, p = .008$. The interaction term significantly improved the predictive power of the model, $\chi^2(1, N = 89) = 4.11, p = .043$. A Nagelkerke’s $R^2$ of .18 indicated a weak relationship between prediction and grouping.

The standardised regression coefficient for the Product Term was calculated by performing the regression with standardised variables as suggested by Friedrich (1982)\(^4\). The interaction term for *Target Gender* and *Gender Identity Surprise* accounted for a marginally significant proportion of the variance in *Gender Bias*, $B = .05, \beta = 1.21, SE = .63, Wald = 3.68, df = 1, p = .055$. *Target Gender* continued to explain a significant amount of variance, $B = 1.20, SE = .56, Wald = 4.66, df = 1, p = .031$, indicating partial moderation by *Gender Identity Surprise*. The final model is summarised in Table 18. Examination of the interaction plot (Figure 5) showed that *Gender Identity Surprise* had a decreasing effect on accusations of bias for the man researcher. In other words, when the man’s gender was perceived as more surprising, the probability of his being accused of gender bias decreased.

\(^4\) SPSS takes the $z$-score of the product ($z_{\text{mod}}$) when calculating the standardized scores however $z_{\text{mod}}$ is the product of the two $z$-scores of interest for the moderation model. Friedrich (1982) suggested running a regression using standardized variables as a solution.
Figure 5. Plot showing ln(odds) for Target Gender (Woman versus Man) as a function of high (+1 SD) and low (-1 SD) values of Gender Identity Surprise.

Discussion

The results from Experiment 4 undermine the idea that the relative salience of gender can universally explain whether privileged and oppressed groups become the focus of attention or how they acquire power and advantage. Experiment 4 found that participants were less likely to refer to a man researcher’s gender in accusations of bias than when they read about a woman researcher, and rated his research as less biased, even though he was perceived as a highly surprising author for the research.

Participants tended to focus less on the gender of the man and on his research when he was perceived as more typical. Perceptions of author typicality partially moderated whether accusations of gender bias were levelled at the man such that being perceived as non-typical amplified his advantage, such that he was even less likely to be accused of gender bias. In contrast, the perception of the woman researcher as surprising did not increase or decrease the rate at which she was accused of gender bias. These results suggest that men experienced particular advantages when they were perceived as surprising, which was independent of the effects of discrimination against women. The results thus align with the glass escalator effect.
(Williams, 1992) which suggests that men can be afforded especial privileges in scientific professions where women typical researchers.

The Cook’s distance scores for three cases when the woman researcher was accused of gender bias are worth noting owing to their possible undue effect on the moderation model. As the Cook’s distance increased for these cases, so did the level of gender identity surprise, showing that the cases were more likely to have an undue effect as the woman accused of gender bias in these cases was perceived as more surprising. The removal of these cases would thus make the inodds line for the woman flatter, therefore the effect whereby protoypicality moderates accusations of bias for men only would be maintained.

The results suggested the mentioning of attributes is not driven by automatic cognitive responses pertaining to group prototypicality. The results showed that participants failed to mention the man researcher’s gender in bias accusations when they found his gender to be particularly surprising. This result indicates that the gender of the man went unmentioned even when it considered non typical and was highly salient. This result aligns with research which suggests that evaluations can favour privileged group members when social group membership is an unmentioned background (Sommers & Ellsworth, 2001). The results suggest that failure to mention the group attributes of the man researcher, and perceptions that his research is less biased than that by the woman, cannot be attributed to a failure to attend to his gender. Rather, attention to gender appeared to be selective.

Being accused of gender bias appeared to have general repercussions for the researchers, irrespective of gender. Participants rated the research as more biased and thought more critically about the research when they accused the researcher of gender bias. This result supports research that being the focus of attention can have negative consequences (Bruckmüller et al., 2012), although the attention could not be explained by processes of prototypicality.
The effect whereby participants were more likely identify women researchers as ‘gender biased’ was greatest when the researchers voiced progressive interpretations of their findings. Women challenging the status quo were seen as more biased than men who challenged the status quo. However men who supported the status quo (which can be considered a self-interested position) were not seen as more gender biased than women who supported the status quo. This effect was unrelated to whether or not the interpretation was deemed more or less surprising for a woman or a man researcher. Consequently, the results suggest that accusations of bias were related to assumptions that the woman researcher took a self-interested position rather than beliefs that those who challenge the status quo are less self-interested and more objective than those who challenge it.

Anecdotal accounts suggest similar processes could be at play in areas of research that are associated with Black researchers. The subsequent analysis assesses whether, as with accusations of gender bias, participant expectations about the researcher’s topic choice moderates accusations of race bias levelled against researchers.

**Experiment 5: Race Bias**

Anecdotal accounts suggest that ‘glass escalator’ type effects could privilege White men in the study of race issues. Experiment 5 presented participants with descriptions of race-related research which was accompanied with a photo of either a White or Black man who was described as the author of the research. It was predicted that White men would be more surprising authors of this research than Black men, but a White men would be judged less biased than a Black men, and would be accused of ‘race bias’ less often. Measures of surprise and bias were used to test the hypotheses and an additional measure of researcher likeability was included to check that effects whereby researcher perceptions about were related to their presumed race were not influenced by the likeability of the character depicted in the image.
Method

Participants. Forty-eight people participated as volunteers. Two participants missed the final page of the materials so 46 participants completed demographic measures: M = 23.8 years, SD = 6.4, range = 18 to 41 years, Women n = 25 (52.1 %), Men n = 21 (43.4%). Thirty-three participants (68.75%) described themselves as White, 18 of these additionally identified as British, another as European, another as Irish, another as Scandinavian, and another as Mediterranean. Three participants identified as Black, one additionally identified as British and another as African. Three participants did not indicate identification with a particular nationality/ethnicity/race. Two participants identified as Chinese, two as Indian and two as British. One participant identified as mixed-race White and Black Caribbean, one as White-Black mixed and one participant identified as mixed.

Twenty-two participants (45.8 %) had studied or were studying a degree in the social sciences, M = 24.14 years, SD = 7.77, range = 18-41, women N = 15 (71.4%), men N = 7 (28.6%). Participants had studied at either undergraduate level (N = 13, 59.1 %) or postgraduate level (N = 9, 40.9 %). Seventeen (77.3%) identified as White, 12 of these also identified as British, another as Irish and another as Scandinavian. Two participants identified as Chinese (9.1%), one as Black-White mixed (9.1%), one as mixed race White and Black Caribbean and one as Black (4.5%). Twenty-six participants (54.2%) had studied a degree in another discipline, M = 23.54 years, SD = 4.89, range = 18-39, women N = 10 (38.5%), men N = (53.8%). Two participants did not complete demographic measures. Degrees were undertaken at undergraduate level (N = 20, 41.7 %) or postgraduate level (N = 4, 15.4%). Sixteen participants were White (61.5%), 6 of which additionally identified as British, another as European and another as Mediterranean. Two participants identified as Black (7.7%), one who also identified as African and the other as British. Two participants
identified as Indian (7.7%), one as mixed (3.8%) and 3 participants did not specify identification with a particular race or ethnicity.

**Materials and Procedure.** Participants were randomly assigned to one of two conditions of a questionnaire study titled “Professor Joseph Gaines”. The questionnaire presented a photo of a Black man or a White man, labelled “Professor Gaines, University of Houston, USA”. Participants read the following description adapted from research described by Hendrix (2000) as eliciting accusations of race-bias:

Professor Joseph Gaines is a prolific Diversity Researcher and a senior lecturer at the University of Houston, America. In his latest research, he aimed to examine the perceptions held by professors and students regarding (a) how professors engage in communication to build their classroom credibility and (b) how professors’ race and ethnicity influence the establishment of their credibility. The study design included a combination of qualitative interviews and quantitative questionnaires collected at the University of Houston. Professor Gaines has completed data collection and is in the process of analysing the data.

After reading the description, participants were asked “Thinking specifically about the research described above, how biased do you think Professor Gaines was?” The question was followed by a 10cm continuous line with the anchors **Unbiased** and **Biased**, on which participants were instructed to “Mark your response by writing an ‘X’ on the line”. Participants were then asked “Please think of some possible sources of Professor Gaines’ bias. List up to 6 sources of bias.” followed by six blank, numbered lines. Two questions proceeded; “Was Professor Gaines’ topic choice surprising?” and “Does Professor Gaines look like a likeable person?”. Participants marked their responses on 10cm lines as before, with the anchors of **Unsurprising/ Surprising** and **Unlikeable/Likeable**, respectively. The following page presented a 15 item prejudice scale designed for a British context (Appendix
Participants were asked “Please give your response to the following questions by circling the relevant number”. Available responses ranged from 1 (strongly disagree) to 7 (strongly agree). The scale was followed by open ended demographic measures.

**Dependent variable calculation.** Two variables were coded from the open-ended responses. These were Total Biases representing the number of biases listed (ranging from 0 to 6), and Race-Bias representing the presence or absence of an accusation of race/ethnicity as a source of researcher bias (1 and 0 respectively)\(^5\). Three variables were coded from the ratings measures. Ratings of researcher bias, surprise about the researcher’s topic choice and researcher likeability, each indicted on 100mm lines, were measured to the nearest millimeter. Scores on the resultant variables of Bias Rating, Topic Surprise and Likeability ranged from 0 to 100, with larger numbers corresponding to higher ratings bias, surprise and likeability respectively.

The prejudice scale (Lepore & Brown, 1997) consists of 15 items and responses range from 1 (strongly disagree) to 7 (strongly agree). Items 1, 5, 6, 10, 11, 12, 14 were reversed items and scores for these items were reversed prior to analysis. The scale range is 15-105, with a midpoint of 60. A high score on the scale indicates greater tolerance (i.e., a lower prejudice level). Two participants did not complete items 12 to 15 inclusive, due to missing the last page of the questionnaire. An average scale score was calculated for each participant to include these participants in the scale analyses. The final scale range was 1-7, with a midpoint of 4. The variable Prejudice Score represented participants’ averaged scores which ranged between 2.71 and 6.71 (M = 4.98).

\(^5\)Accusation Order representing the order in which race/ethnicity bias was listed (coded from 1 to 5) was coded post-hoc. No interactions or relationships were evident with this variable and was thus excluded from the analysis.
Results

Preliminary analysis. Continuous variables were screened for normality (see Table 19). The \( z \) scores for skew and kurtosis for Prejudice Score, Total Biases and Bias Rating fell within normal ranges (recommended +/- 2.58 for small sample sizes by Field, 2006). Topic Surprise and Likeability fell outside these ranges. Transformations failed to normalise the data and non-parametric tests are used for Topic Surprise and Likeability unless otherwise stated.

Individual differences. First, relationships between demographic variables and responses to the main dependent measures were examined. Prejudice score\(^6\), participant gender (Woman versus Man), participant race (Black/Mixed Black versus White/Asian/Indian\(^7\)), and Degree (Social Science versus Other) were assessed for any relationship with the main variables in the analyses.

Participant race. Participant race was not significantly associated with any of the variables, all \( p > .33 \). The file was split to assess correlations between Prejudice Score and other variables for White respondents only. There were no significant associations, all \( p > .13 \).

Participant gender. A difference in the Prejudice Scale according to participant gender suggested that women (\( M = 5.20, SD = 0.99 \)) were less prejudiced than men (\( M = 4.599, SD = 0.95 \)), \( t(44) = 2.09, p = .043 \). Participant Gender and was not significantly related to other variables, all \( p > .12 \).

\(^6\) The prejudice scale was developed to assess prejudice towards Black people in a UK context. Implicitly, it assesses judgements made by White people about Black people. As such, items that advocate racial segregation and items that oppose Black progression are both interpreted as indicators of prejudice towards Black people. However, these items may not be equivalent for respondents who identify with a racialised social group (i.e. segregation may be advocated, as may Black progression). Similarly, the scale may not appropriately represent the perspective of respondents who identify with a racialised social category that is not Black (i.e. Asian or Indian). The relationship of this scale with other variables is thus interpreted with caution.

\(^7\) Usually participants are divided into “White” and “other”. However, as the present study asked people to make judgements about White or Black people, it would be inappropriate to categorise participants who identified as belonging to non-Black racialised groups in this way.
Participant degree. There was a significant difference between the Prejudice Scores of the social science participants (M = 5.24, SD = .95) and other participants (M = 4.60, SD = .95); \( t(46) = -2.32, p = .025 \). There was a significant difference in the Total Biases listed by social science participants (M = 4.09, SD = 1.54) and other participants (M = 2.81, SD = 1.54); \( t(46) = -2.51, p = .016 \). Whether or not race bias was listed as a source of researcher bias was not related to whether or not participants had a social science degree, \( p = .86 \).

Participant race, gender and degree did not relate to any other variables and did not significantly influence the main analyses thus will not be mentioned further.

Main Analysis

Correlations between variables were assessed for the Target Race conditions (see Table 20). Fisher Exact tests indicated four instances in which differences between correlations across the conditions reached significance. These were Topic Surprise by Race Bias, \( z = -2.65, p = .004 \); Bias Rating by Race Bias, \( z = -2.11, p = .017 \); Prejudice Score by Topic Surprise, \( z = 2.58, p = .005 \); and Prejudice Score by Total Biases, \( z = 1.94, p = .026 \). There was also a marginal difference for Topic Surprise by Total Biases, \( z = -1.41, p = .079 \).

The correlations indicated that when participants that read about a Black researcher scored highly on the prejudice score they were more likely to a) be surprised at his topic choice and b) list more biases. This effect was not evident for participants who read about a White researcher. Participants who accused the Black researcher of race bias were more likely to rate his topic choice as surprising. However, participants who read about the White man rated his topic choice as less surprising when he wasn’t accused of race bias. Finally, Black researchers accused of race bias were more likely to be rated as biased researchers, whilst White researchers were more likely to be rated as biased when they were not accused of race bias.
Means, t-tests and Mann-Whitney U tests for continuous variables by target race condition are displayed in Table 21. The tests indicated that the White researcher was significantly less likeable than the Black researcher\(^8\). There were no other significant differences across conditions.

Hendrix (2002) suggests that the presumed race of a researcher will be evoked as a source of bias in research about race issues less often in regard to White researchers than Black researchers. A 2x2 Chi-square analysis was run with Target Race (Black = 1 versus White = 2) and Race-Bias (Mentioned = 1, Not-mentioned = 0) as variables, to see whether accusations of race bias were levelled at the White researcher less often than a Black researcher. Researcher race bias was listed less often in the White researcher condition (44\% of the time) than in the Black researcher condition (78\% of the time), \(\chi^2(1, N = 48) = 5.88, p = .015\). Based on the odds ratio, participants in the Black researcher condition were 4.6 times more likely to accuse the researcher of race bias than not versus the participants in the White researcher condition.

To see whether surprising researchers were accused of race bias, a Mann-Whitney U test was run treating Race-Bias Accusation (Mentioned versus Not-mentioned) and Topic-Choice Surprise as variables. The mean rank for Topic-Choice Surprise when race bias was mentioned (n = 29, M = 22.21) was not significantly different from when race bias was not mentioned (n = 19, M = 28.00), \(U(46) = 209.00, z = -1.40, p = .161\). In other words, the presumed race of surprising researchers was not more likely to be marked in accusations of bias than the presumed race of unsurprising researchers. At the same time, although the race of Black researchers was more likely to be marked in accusations of bias, participants were not significantly more surprised that the Black researcher chose to study the topic than the White researcher. Instead, White researchers not accused of race bias were marginally more

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\(^8\) Likeability was not significantly related to any other variables, nor did it influence any of the analyses testing the main hypotheses.
surprising than Black researchers not accused of race bias (see Table 22). These results run counter to predictions by norm theory, which assumes that non-typical, surprising group members become the focus of attention and typical, unsurprising group members avoid attention.

Hendrix (2002) and Avery (2008) suggest that there are repercussions for researchers whose presumed race or ethnicity is perceived to influence their research. The following analysis looks at whether accusations of race bias could affect perceptions of researcher bias. Two 2x2 univariate ANOVAs with Target Race (Black versus White) and accusation of race bias (Mentioned versus Not-mentioned) as factors were performed respectively with Bias Rating and Total Biases as DVs

**Bias rating.** The main effect of Target Race did not reach significance, $F(3, 43) = 2.935, p = .094$. The mean Bias Rating for the White researcher ($M = 53.37, SD = 4.49$) was marginally higher than the bias rating for the Black researcher ($M = 41.15, SD = 5.55$). The main effect for Race Bias Accusations was not statistically significant, $F(3, 43) = .18, p = .673$. There was a significant interaction between Target Race and Race-Bias Accusation, $F(3, 43) = 6.40, p = .015$. T-tests were performed to ascertain the direction of the interaction. The mean bias ratings for White researchers accused of race bias ($n = 11, M = 45.86, SD = 25.52$) and Black researchers accused of race bias ($n = 18, M = 60.88, SD = 21.25$) were not significantly different, $t(27) = 0.67, p = .512$. However, when researchers were *not* accused of race bias, White researchers ($n = 13, M = 60.88, SD = 19.77$) were rated as significantly more biased than Black researchers ($n = 5, M = 30.60, SD = 19.77$), $t(16) = -2.86, p = .011$. Ratings of bias did not differ significantly for White researchers that were and were not accused of race bias, $t(22) = 1.63, p = .118$. However, the difference between the mean ratings of Researcher Bias for Black researchers approached significance, with Black researchers being rated as more biased when accused of race bias ($n = 18, M = 51.69, SD = 21.25$) than Black
researchers not accused of race bias (n = 5, M = 30.60, SD = 21.29), \( t(21) = -1.96, p = .063 \).

See Figure 6 for interaction. In sum, researchers not accused of race bias were rated as more biased when they were White than when they were Black, whilst bias ratings for White and Black researchers accused of race bias were equivalent. Although ratings of bias were equivalent for White researchers irrespective of whether they were accused of race bias, Black researchers accused of race bias were rated as more biased than Black researchers who were not accused of race bias.

\[ \text{Figure 6. Research bias ratings by target race and race bias accusation.} \]

\textbf{Total biases.} There was a significant main effect for \textit{Race-Bias Accusation}, with more biases listed for researchers accused of race bias (M = 3.91, 95% CI [3.20, 4.61]) than for researchers not accused of race bias (M = 2.66, 95% CI [1.70, 3.62]), \( F(3, 44) = 4.49, p = .040 \). There were no other significant main effects or interactions, all \( p > .68 \). More biases were therefore listed for researchers who were accused of race bias, irrespective of the presumed race of the researcher.
**Surprise as a moderator of attention to researcher race.** To examine the moderating effect of research topic expectation on the relationship between accusations of race bias and presumed researcher race, a three-step hierarchical logistic regression was performed. Predictor variables were grand-mean centred. In the first step *Bias Accusation* was entered as the DV and *Target Race* as the IV. For step 2 *Topic-Choice Surprise* was added into model 1 as a predictor. In the final step, the interaction term for Target Race and *Topic-Choice Surprise* was added to the model.

**Model Fit.** DFBeta values for the constant and *Target Race* were all less than 1. None of the expected leverage values for the cases exceeded the recommended value (calculated at three times the average (3 x 0.0625) as recommended by Stevens, 1992). Standardised residuals for 45 cases were within +/- 1.96, 1 case was within +/- 2.58 (Case 30 = 2.37). One case exceeded +/-3 (Case 37 = -3.51). The Cooks Distance value for the same case exceeded the recommended cut off of 1, all other values < 1. The case was examined further. For this case, Experimental Condition = Black researcher, *Race Bias* = not mentioned, *Topic Choice Surprise* = 49. There was no methodological reason for removing the case.

In step 1, a test of the model against a constant-only model was statistically significant, indicating that *Target Race* reliably distinguished between the presence and absence of accusations of race bias, \( \chi^2(1, N = 48) = 6.06, p = .014 \). Nagelkerke’s \( R^2 \) of .16 indicated a weak relationship between prediction and grouping. In step 2, *Topic Surprise* was entered into the regression equation. The model significantly predicted grouping, \( \chi^2 (1, N = 48) = 7.774, p = .021 \) but the improvement of the predictive power of the model with the addition of *Topic Surprise* as a predictor did not reach significance, \( \chi^2(1, N = 48) = 1.71, p = .191 \). In step 3, the interaction term for *Target Race* and *Topic Surprise* was included in the model. The model significantly predicted *Race Bias* accusations, \( \chi^2 (1, N = 48) = 13.403, p = .004 \). Nagelkerke’s \( R^2 \) of .33 indicated a moderate relationship between prediction and
grouping. The standardised regression coefficient for the Product Term was calculated by performing the regression with standardised variables (as suggested by Friedrich, 1982). The interaction term for Target Race and Topic Surprise accounted for a significant proportion of the variance in Race Bias, $B = .089$, $\beta = 2.174$, $SE = 1.106$, $Wald = 3.862$ $df = 1$, $p = .049$. Target Race also continued to explain a significant amount of variance, $B = 1.905$, $SE = .853$, $Wald = 5.005$ $df = 1$, $p = .025$, indicating partial moderation by Topic Surprise. The final model is summarised in Table 23. Examination of the interaction plot (Figure 7) showed that when the researcher’s topic choice was rated as more surprising, the probability of being accused of Race bias increased for Black Researchers and decreased for White researchers.

![Figure 7](image.png)

*Figure 7.* Plot showing ln(odds) for Target Race (Black versus White) as a function of high (+1 SD) and low (-1 SD) values of Topic Surprise.

**Discussion**

The findings from Experiment 5 replicated asymmetries in accusations of bias and ratings of surprise as revealed in Experiment 4. The Black man was subject to accusations of race bias that the White man avoided when they were both perceived as surprising authors for their topic. When the topic choice was rated as unsurprising the likelihood that the Black and White men were to be accused of bias converged. Consequently, the results indicated that
accusations of race bias were not levelled at researchers simply because they were surprising authors or that the identities of researchers who avoided accusations went unnoticed. As such, the results did not support predictions by norm theory (Kahneman & Miller, 1986). Instead, they indicated that that negative attention to researchers’ identities was selective rather than the result of automatic, universal cognitive processes that render race salient for typical researchers and implicit for non-typical researchers. The likelihood that a White man would avoid accusations of race bias was amplified when he was perceived as more surprising, whilst the likelihood that the Black man would avoid bias was reduced when he was perceived as less surprising. This result broadly supports the glass escalator hypothesis that Black researchers, regarded as typical, would be accused of race bias more than White researchers regarded as non-typical.

High scores on the prejudice scale were associated with the mentioning of more biases for Black researchers than for White researchers. This suggests that the attribution of sources of bias to Black researchers had an ideological basis. High scores on the prejudice scale were also associated with greater surprise about the Black researcher than the White researcher. This suggests that people who perceived a Black researcher as a non-typical researcher were more prejudiced towards Black people. This result was interesting, because it suggests that those who perceived the researcher as typical were not prejudiced, yet these participants generally accused the Black researcher of race bias. Accordingly, the accusations of race bias levelled at either White or Black researchers were unrelated to the prejudice measure. There were some limitations to the prejudice scale which are worth considering. The scale was developed to assess prejudice towards Black people in a UK context and implicitly, it was designed to assess judgments made by White people about Black people. As such, items that advocate racial segregation and items that oppose Black progression are both interpreted as indicators of prejudice towards Black people. However, these items may not be
equivalent for respondents who identify with a racialised social group (i.e. a Black person could advocate both racial segregation and Black progression). Similarly, the scale may not appropriately represent the perspective of respondents who identify with a racialised social category that is not Black (i.e. Asian or Indian). The relationship of this scale with other variables is thus interpreted with caution. Nevertheless, as accusations of race bias went undetected as the behaviour of prejudiced people, the study may have picked up on discrimination that (a) is undetected by a standard prejudice measure; (b) people do not feel they need to compensate for or cover up; (c) is exhibited by people who are generally considered unprejudiced; (d) is not regarded as a discriminatory practice. Therefore, although the criterion of objectivity was applied more often to a Black researcher than a White researcher, the failure for the prejudice measure to pick up on this discriminatory practice corresponds with rhetoric which suggests scientific structures are immune to bias. This illustrates how certain scientific practices may appear neutral on the surface when they are in fact discriminatory.

Unsurprisingly, higher bias ratings scores were associated with accusations of race bias for the Black researcher. However, higher bias ratings for the White researcher were associated with an absence of race bias accusations. This was not consistent with the hypotheses. It was expected that Black researchers accused of race bias would be rated as the most biased researchers. However, White researchers who were not accused of race bias were rated as most biased. Nevertheless, the fact that Black researchers were less likely than White researchers to avoid race bias accusations suggests there would be less chance for a White men to be rated as bias. Indeed, the researcher bias ratings did not significantly differ across the target race conditions. Although the bias rating appeared somewhat inconsistent, people listed more sources of bias for researchers accused of race bias, suggesting that perceiving a
researcher as race biased made participants either more critical of the researcher in general, or more openly critical of the researcher.

There are some alternative explanations for why the bias ratings did not relate to researcher race as hypothesized. Participants may have considered the White man’s research to be biased but avoided mentioning his race so not to appear ‘biased’ themselves. This interpretation suggests that participants were genuinely critical of research about race when presented by a White man. This is supported by the fact that the prejudice scores were unrelated to ratings of researcher bias. However, this explanation is not supported by the fact that people did not generally avoid mentioning the race of the Black researcher. Another explanation can be found in theorising by Hendrix (2002). Outsider-within arguments suggest that Black people may have greater objectivity with respect to race issues. However, Hendrix suggests that accusations of race bias are levelled at Black researchers to discredit their work and avoid attending to methodological issues. According to Hendrix, accusations of race bias may be less easily defended than general, non-specific ratings of researcher bias that do not invoke the researcher’s membership to an historically oppressed group. This suggests that people who accused the Black researcher of race bias may have regarded him as objective, but used the race bias accusation as a means to discredit his work. By extension, people may have considered research by the White researcher to be subjective but wished to avoid further discrediting it with accusations of race bias.

A further effect that was not predicted, was that participants who read about a Black researcher listed more sources of researcher biases when they were surprised about his topic choice. This is somewhat surprising given that participants who read about a Black researcher accused him of race bias when they were unsurprised by his topic choice. The prejudice scores were highly associated with both the surprise measure and the total number of biases listed. Thus it would appear that the Black man researcher was discriminated against – albeit
in different ways - regardless of whether or not he was considered surprising. Possibly, participants who were more surprised that the researcher was Black conflated scientific enquiry with White researchers, thus saw the Black researcher as having more potential sources of bias. Alternatively, participants who listed more biases for Black researcher rated the Black researcher as surprising to indicate they were not conflating the researcher’s race with the topic under study, but still evaluated him harshly.

**General Discussion**

The results from Experiments 4 and 5 supported the hypothesis that non-typical researchers belonging to privileged social groups would enjoy ‘glass escalator’-type effects, whereby they would avoid the accusations of in-group bias that typical researchers belonging to historically oppressed groups were subject to. Principally, the results showed that failure to focus negative attention on the race of a White man and the gender of a man (whose race was unspecified) could not be explained by the implicit, imperceptible nature of those group attributes. Instead, these men were most likely to avoid negative attention when they were highly surprising authors of gender and race related research, and their inferred gender and race were particularly salient.

A significant finding from the two studies was that the White researcher’s race was salient, and the man’s gender was salient, but gender and race were invoked in accusations of author bias only for the Black man and the woman. This finding runs counter to the conceptualisation of privilege as a solely implicit and unconscious process, and that discrimination occurs because the group characteristics of discriminated groups are distinctive. Instead, both privilege and discrimination appeared to occur when gender and race were salient factors.

Studies 1 & 2 showed that (White) men were privileged when their race and gender went unmentioned. The results therefore corresponded with research which suggests that
people can resort to stereotypic responses that favour the dominant group when race is an unmentioned background factor (Sommers and Ellsworth, 2000). By extension, the results suggested that that people can resort to stereotypic responses that favour the dominant group when gender is an unmentioned background factor too. The findings ran counter to the ideology that motivates ‘colour blind’ policy that does not acknowledge racial differences, which suggests that privilege occurs because group attributes are imperceptible and unmentioned. To the contrary, the present research showed that failure to mention social group membership does not mean it has not been perceived.

The studies jointly showed that the criterion of objectivity can be selectively invoked to privilege and discriminate researchers belonging to racialised and gendered categories. As such, the studies indicated that the principle of objectivity could be applied unevenly, despite its design as a universal measure of scientific conduct. However, the studies ran counter to the hypothesis that inequality such as this can be attributed to inherently masculinist scientific structures. In Experiment 4, the criterion of objectivity was invoked to accuse men researchers of bias less often than women researchers. However, the results from Experiment 5 replicated this effect with a White man and a Black man. Here, the Black researcher was accused of race bias less often than the White researcher. Therefore, the criterion of objectivity was applied to discriminate against a man. Clearly, masculinist scientific structures cannot be held accountable for the application of the criterion of objectivity to discredit the work of a man. Although the Black researcher was rated as more likeable than the White researcher, the likeability measure was not related to whether White of Black researchers were accused of bias. It seems unlikely therefore that any potential conflation of Black researchers with feminine, relational characterises influenced attributions of bias. The results thus appear to support theorising which suggests the view that discriminated groups
are self-interested when discussing issues relating to their social group is present in day-to-day ideology (e.g. McIntosh, 1988) and not unique to science.

Whilst there were similarities in the ways in which accusations of race bias and accusations of gender bias were levelled at researchers, there were several differences in the way participants perceived researchers with respect to race and gender. Overall, the woman researcher was perceived as significantly less surprising than the man researcher. Although ratings of surprise were also higher for the black researcher than the White researcher, they did not significantly differ across the race target conditions. Participants tended to focus more attention in general on the woman than on the man, and rated her research as more biased than that of the man. In comparison, the White researcher was less liked than the Black researcher, but other dependent variables did not differ significantly across the target race conditions. Therefore, the Black man appeared to be of a greater focus than the White man only in respect to accusations of Race bias. Finally, when the researcher’s topic choice was rated as more surprising, the probability of being accused of race bias increased for the Black researcher and decreased for the White researcher. In contrast, the probability of being accused of gender bias increased when a man (whose race was unspecified) was particularly surprising, but remained consistent for woman. This suggests that whilst the inequity in accusations of gender bias were attributable to ‘glass escalator’ type processes that privileged men, the inequities in accusations of race bias pertained both to the privileging of the White man and discrimination against the Black man.

There were some methodological variations between studies that could explain some of the differences between the results. In the gender study, participants were asked to list their thoughts about the research, and listed more for research authored by a woman than that authored by a man. In contrast, participants in the race study were asked to list possible sources of researcher bias. In fact, the variable representing possible sources of researcher
bias did not differ significantly across conditions and it thus appeared to be more comparable with the variable that measured how many critiques were offered for research about women. This provides an alternative explanation for the interpretation that the woman was of greater general focus of attention compared to the man, whilst the Black man was only of greater focus with respect to accusations of race bias. Instead, people may not focus more critical thoughts on researchers according to their gender or perceived race, although attention that is neither negative nor positive may vary. The placement of the bias measure could also have influenced the listed thoughts and sources of bias. In the gender study participants listed their thoughts about the study before giving a bias rating, but in the race study participants gave ratings of bias before listing sources of bias. Getting participants to think about the degree of bias beforehand could arguably have ‘levelled the playing field’, so that the white researcher became the focus of negative attention that he may have avoided had participants rated bias after listing bias sources.

A methodological basis for the differences between the measures of surprise in the two studies is less compelling. Whilst participants in the gender study were asked …“How surprising was it that Dr Murphy’s research was conducted by a [woman/man]?”’, participants in the race study were asked “Was Professor Gaines’ topic choice surprising?”. The research in the gender study was described mostly in terms of gender related issues, but the research in the race study was described as being about race issues and professors. Arguably, people may not have been surprised that a professor, irrespective of his presumed race, would choose to study professors. However, this explanation is inconsistent with the fact that in both studies, the researcher surprise measures were related to whether or not the researchers were accused of in-group bias invoking gender or race as hypothesised. Therefore, discrimination and privilege in the form of the presence and absence of accusations of in-group bias could not be accounted for by universal processes of typicality or the salience of race and gender.
The differences across the two studies are significant for several of reasons. Firstly, they show that typicality does not operate in a universal manner for all social groups as norm theory (Kahneman & Miller, 1986) would suggest. Secondly, the processes that led to privilege and discrimination differed according to gender and race, thus did not appear to be the same for all social groups. This highlights the importance of an intersectional approach to research which does not generalize effects across different social groups. Finally, the results showed that inequality can be maintained through processes that discriminate against some people, and/or processes that privilege against others. As such, the privilege and discrimination that the researchers in these studies were subject to can be conceptualized as different effects.

In summary, the studies presented in this chapter found that the selective attention to the gender and race of academics drove evaluations of knowledge work that privileged White men and worked to the disadvantage of women and Black men. In modern academic institutions, the knowledge work of academics is subject to routine evaluation and the findings presented here could help to understand inequality of the sort seen in academic psychology departments in Chapters 2 and 3.
Chapter 6: Main Discussion

Abstract
This chapter begins by restating the initial aims of the thesis. A summary of the key findings from each of the research chapters is presented. This is followed with a synthesis of how the results can inform the prevalent theoretical conceptualisation of privilege and disadvantage as the automatic consequence of a universal process or condition, and the alternative view that privilege and disadvantage can be driven by independent processes that result from selective and ideologically motivated behaviour. The implications for the way in which inequality in academic psychology can be conceptualised and addressed are discussed.
Main Discussion

This thesis aimed to assess the extent to which theories of inequality that hold to two prevalent conceptual themes could be applied to explain inequality in domains of UK academic psychology that are well represented by – and typical of – scholars belonging to oppressed social groups, namely women and Black men. The two themes explored were the treatment of group privilege and group disadvantage as having the same origin, or being “two sides of the same coin”, and the attribution of inequality to automatic or passive processes. Chapters 2 through to 5 presented critical tests for a number of theories based on these conceptual models to assess whether inequality in academic psychology could be usefully conceptualised as the result of the independent influences of privilege and discrimination, and active or selective behaviour. The key findings from of these chapters will first be summarised, followed by a synthesis of the results and their implications for the ways in which inequality is conceptualised and addressed.

Research Chapter Summaries

Chapter 2

Chapter 2 explored vertical gender segregation in the appointment of women and men academics to the managerial Head of Department (HoD) role in UK and Irish academic psychology departments. The studies assessed the extent to which gender inequality in the appointment of HoDs could be explained by horizontal gender segregation, the NSS 2012 and RAE 2008 meritocratic evaluation systems, and the gendered allocation of knowledge work. The results showed that men were overrepresented in the HoD role. Women and men were more likely to be employed as HoDs in departments with greater proportions of academics belonging to their gender category. However, although the ratio of women to men in a given department went some way to explain whether women or men would be appointed to HoD, it was unable to explain gender inequality relating to context of appointment. Specifically, men
HoDs were more likely than women HoDs to have professorial titles and manage larger departments with more professors, higher ratings on the NSS, and more academics whose research activity was recognised by the RAE 2008. The results highlighted a problematic implicit assumption in many accounts of inequality, that the roles to which women and men are appointed are comparably ‘advantageous’. The study also highlighted the importance of the conceptual distinction between privilege and discrimination. Certain departments were particularly likely to appoint their men to high status managerial and academic professorial posts, but the professorial status of women was unrelated to the gender of the HoD. Consequently, there appeared to be processes at play whereby men academics were particularly privileged in departments managed by men, although women were no more or less disadvantaged in those departments compared to departments managed by women.

**Chapter 3**

Chapter 3 explored vertical gender segregation in the appointment of women and men to professor in the traditional academic career track. Overall, men academics were considerably more likely to be professors than women academics, despite a more or less equal gender balance across the departments. The gender-neutral, universal effects of numerical representation as described by Tokenism (Kanter, 1977) were insufficient to explain this effect. Men appeared to benefit from ‘glass escalator’ (Williams, 1992) effects, whereby their appointment to professor was enhanced in departments that were well represented by women. The discovery of a glass escalator effect for men academics reiterated the finding in Chapter 2, that gender inequality in academic status could in part be maintained by distinct processes that privilege men, as opposed to processes that directly disadvantage women. Finally, the NSS 2012 and RAE 2008 results were not clearly related to vertical gender segregation. Consequently, the results did not offer support for arguments that suggest meritocratic evaluation measures either defend against or cause gender inequality.
Chapter 4

The aim of Chapter 4 was to assess the social cognitive basis for glass escalator effects in domains of psychology where men are numerically rare and may be presumed to be atypical. Theories of typicality and Othering were tested to see how attention to the gender of researchers was related to whether or not they were typical of a given psychological domain. Arguments that claim women are disadvantaged by virtue of gender segregation that locates women in Othered research fields – such as research about women – were not supported. Although women researchers were the focus of attention when described as authoring research about women, men described as the author of the same research were not focused on to the same degree. At the same time, research about women was Othered only when a man was described as the author. These results indicated that professional disadvantages women researchers may experience as a result of becoming the focus of attention is not solely related to the Othered nature of their research. The universal, automatic processes of typicality as described by norm theory were insufficient to explain attention to researcher’s genders, as the gender of typical women researchers became a focus of attention that the gender of non-typical men researchers escaped. The findings also ran counter to the theory that women are automatically disadvantaged in science because science is structured according to an overarching ‘masculinist’ norm that necessarily results in the Othering of women researchers. In fact, the gender of women researchers was not universally Othered, rather they became the focus of attention only when they presented research about women. Together, the results suggested that attention to gender of women and men researchers is not an automatic consequence of domain of study, their status as typical or non-typical researchers, or masculinist scientific norms.
Chapter 5

Chapter 5 aimed to see if attention to the race and gender of researchers belonging to disadvantaged social groups could provide a basis for glass escalator effects, whereby white men avoid accusations of author bias that typical researchers belonging to disadvantaged groups are subject to. The studies provided a direct test of the causal model proposed by norm theory, which suggests attention to group attributes is governed by universal processes of typicality that render non-typical attributes surprising and therefore salient, whilst typical attributes remain implicit. Women and Black men were accused of gender and race bias when they were unsurprising researchers of gender and race issues respectively, whilst highly surprising White men researchers were not accused of gender or race bias. White men appeared to benefit from a ‘glass escalator’ effect, whereby they were even less likely to be accused of bias the more surprising they were. A significant finding from the research in this chapter was that failure to accuse White men of race and gender bias did not occur because his gender was imperceptible. Participant ratings indicated that they found his ‘Whiteness’ and ‘maleness’ surprising, yet did not call attention to it in accusations of bias. As such, negative attention to the gender and race of researchers appeared to be selective rather than an automatic consequence of perceptibility. The results also suggested that the processes leading to privilege and discrimination worked somewhat differently according to the gender and race of researchers. The likelihood that a Black man was accused of race bias increased when he was rated as less surprising, whilst ratings of surprise did not influence whether or not a woman was accused of gender bias. Thus inequality in accusations of gender bias appeared to be enhanced by an independent process that privileged men, but inequity in accusations of race bias was enhanced by processes that privileged White men and disadvantaged Black men. Finally, the finding that a Black man was selectively accused of race bias suggested that equality resulting from the uneven application of the criterion of
objectivity could not be explained with reference to ‘masculinist’ scientific structures that privilege men.

**Synthesis of Findings**

The main aim of this thesis was to assess the extent to which inequality in academic psychology can be explained by theories that assume group disadvantage and group privilege are the result of the same, automatic processes, or whether inequality could be (a) influenced by independent processes that respectively privilege some groups and disadvantage others and, (b) whether these processes could be the consequence of active or selective behaviour. The following describes key insights gained from the studies, the implications for existing theories and points of entry for challenging inequality in academic psychology.

**Privilege is a Phenomenon Independent from Disadvantage**

The research that formed this thesis indicated that a conceptual differentiation between privilege and discrimination was central for understanding how inequality in academic psychology operates in domains that are typical and well represented by women and Black scholars.

In particular, the studies established conditions when the driving force of inequality could be conceptualised in terms of privilege, but not in terms of disadvantage. Specifically, privilege exerted its own independent effect on inequality in domains that were typical of women and Black people. ‘Glass escalator’ (Williams, 1992) -type effects enhanced men’s appointment to professor when they worked in departments where women were better represented as academics (Chapter 2), and reduced the probability that White men would be accused of gender and race bias when they were perceived as non-typical psychologists (Chapter 3). These effects occurred independently from effects that disadvantaged women. Women’s professional disadvantage in academic departments, and the unfavourable evaluations of their research remained unaffected by whether or not they were well
represented, or whether they were perceived as typical research authors. Consequently, the processes that privileged men exerted effects on inequality that were independent from the effects that disadvantaged women.

The finding that privilege could have an independent influence on inequality runs counter to theories that assume group disadvantage and group privilege have the same origin, including Tokenism (Kanter, 1977), the glass ceiling (Cotter et al., 2001) and norm theory (Kahneman & Miller, 1986). Contrary to this conceptualisation, the observed glass escalator effects signify a unique process that afforded privilege to White men.

The finding that privilege exerted an independent influence on inequality was significant for interpreting the basis of the ‘glass escalator’ effects. Specifically, the finding indicated that men were unlikely to be privileged as a direct consequence of their numerical underrepresentation or the perception that they were non-typical. If the knowledge or belief that a social group is non typical or underrepresented motivates privilege, then women and Black people should also benefit when they are perceived to be typical academics. However, horizontal gender segregation in academic departments did not influence whether or not they were appointed to high status professorial posts. Accordingly, men’s privilege was enhanced in departments with a more or less equal gender balance, thus this effect occurred in the absence of direct evidence of their underrepresentation. The perception that women were typical also failed to influence whether or not women researchers were negatively evaluated. Moreover, being perceived as a typical researcher worked to the disadvantage of Back researchers. In sum, the independent influence of privilege experienced by White men academics was not directly attributable to their poorly represented or non-typical status.

One possibility for why White men can experience especial privileges in psychological research domains typical of women and Black scholars is that the belief that white men are non-typical may serve to qualify privileging them ‘post-hoc’, rather than
providing a reasoned, a priori rationale for supporting numerically underrepresented academics. For example, the connections drawn between specialised scholarship and social group membership can reflect a dynamic social process rather than a direct relationship (Ferree et al., 2007). Scholars have accordingly expressed concerns that women are conflated with gender research (Ferree et al., 2007) and Black people are conflated with race research (Avery, 2008; Hendrix; 2002) and that this works to their disadvantage. Indeed, concerns regarding women’s presumed overrepresentation in psychology have provided the foundation for arguments that advocate supporting improved access for men to the field (e.g. Willyard, 2011). The belief that women and Black people are well represented in a given department or research domain may thus serve to justify behaviour that privileges White men.

This interpretation runs counter to a number of theories that equate inequality with the horizontal racial and gender segregation of employees, either by virtue of their numerical status (Tokenism, Kanter, 1977), their typical status (norm theory, Kahaneman & Miller, 1986) or by association with undervalued research domains (e.g. Tower et al., 2011). Contrary to the idea that horizontal segregation establishes conditions that lead to gender and racial inequality, the results suggested that the underrepresentation of men – or indeed the knowledge or belief that men are non-typical - could function as a ‘post-hoc’ explanation for privilege.

It is perhaps unsurprising that processes that lead to privilege can exert independent effects on inequality modern academic psychology. UK academic institutions prohibit overt discrimination, and liberal discourse imbues a culture of fairness. In addition, egalitarian norms render overt discrimination against disadvantaged groups socially unacceptable in many modern contexts (Moskowitz, et al., 2000; Plant & Devine, 1998; Dovidio & Gaertner, 2004). People are also able to appear to uphold egalitarian norms at the same time as enacting subtle forms of discrimination (Dovidio and Gaertner, 2004; Swim, et al. 1995). With this in
mind, privilege could even provide a *socially acceptable* means of maintaining the status quo in modern UK psychology.

**Implications.** Theories that assume inequality is driven by a single process do not predict the independent effects of processes that can privilege White men. Many theories of inequality conceptualise disadvantage as the driving force for both group-based disadvantage and group-based privilege (Powell, 2005). The tendency for theory to describe inequality as the result of disadvantage has been critiqued as a valid, yet problematic framing that can avert the guilt experienced by privileged group members, which could otherwise prompt intervention (Powell, 2005). Indeed, applications of norm theory (Kahneman & Miller, 1986) suggest that attention to disadvantaged groups rather than privileged groups can reify inequality and reinforce dominant power relations (Bruckmüller et al., 2012). Consequently, failure to detect a mechanism of privilege may be a missed opportunity as far as prompting social change goes.

Secondly, and perhaps more significantly, theories that assume group disadvantage and group privilege have the same origin preclude the study of any mechanism of inequality that can only be correctly explained in terms of privilege. Whilst theories that frame inequality in terms of disadvantage have been conceptualised as problematic (Powell, 2005) they are not seen to be ‘wrong’ in doing so. However, the theoretical framing of disadvantage and privilege as equivalent could in some instances result in the incorrect attribution of inequality to processes that lead to group-based disadvantage. Moreover, research based on theories that frame inequality as result of disadvantage may fail to detect processes that privilege White men. In Chapter 5 of this thesis for example, the unequal evaluation of White men and Black men who authored race-related research was not associated with participant scores on the Black prejudice scale included in the study (Lepore & Brown, 1997). Because the scale measures prejudice *against* Black people, rather than prejudice in favour of White
people, it is possible that the scale was unable to pick up on the thinking that privileged White men.

The assumption that privilege and disadvantage are equivalent may be misleading in theoretical terms, but it may also obscure some effective means of challenging inequality. In assuming that inequality can be correctly framed the result of disadvantage or privilege, a single intervention that targets either disadvantage or privilege should hypothetically reduce inequality. For example, equality strategies often target gender differences at all levels of the hierarchy under the assumption that numerical underrepresentation is a universal indicator of inequality. However, the results from the present research suggest that men can be overrepresented in high status positions in domains where they are underrepresented at lower end of the hierarchy. As such, university gender equality schemes that address gender differences both in senior management and in the recruitment of students may inadvertently conflate these issues and provide a rationale for the unfair promotion of men in fields where they are underrepresented as students. Equality schemes can instead address gender differences in senior management and the recruitment of students as distinct issues, and clearly differentiate strategies that are able to effectively target gender inequities at different levels of the hierarchy.

The assumption that a single intervention can address both privilege and disadvantage is particularly significant when it is considered that discrimination against disadvantaged groups is usually conceptualised as the driving force of inequality. UK Higher Education policy, for example, prohibits the formal exclusion and overt discrimination against people belonging to different social groups. Consequently, whilst existing critiques suggest that framing inequality as disadvantage is problematic because it averts concern about inequality, the present findings suggest that policy that attributes inequality to disadvantage could be problematic because it is ill suited to defend against the independent effects of privilege. The
conceptualisation of privilege as a driving force of inequality could thus provide a useful point of entry for inequality interventions in academic psychology. For example, rather than simply setting procedures to avoid or challenge discrimination against social groups, policy can also require that organisations proactively afford opportunities, evaluate work and allocate resources in a fair and equal manner.

**Processes that underlie privilege and discrimination can be selective**

The results suggest that inequality in domains of academic psychology that are typical of women and Black people may not be automatic or passive in the ways many contemporary theories predict. The studies presented in this thesis provided critical tests for theories that construct inequality as the automatic consequence of horizontal segregation (Tokenism, Kanter, 1977), new managerial structures (e.g. Deem, 1998), masculinist scientific structures (e.g. Harding, 1986), and cognition (norm theory, Kahneman & Miller, 1986). The findings indicate that these theories underestimate the extent to which the processes that privilege White men and disadvantage women and Black men can be driven by active and selective behaviour.

The studies in Chapters 4 and 5 provided evidence for some of the ways in which knowledge work can be evaluated in psychology. The findings in these chapters suggested that negative evaluations of researchers can be driven by selective attention to the gender and race of women and Black men when they are taken to be typical of a psychological research domain. This finding ran counter to norm theory (Kahneman & Miller, 1986) which suggests that failure to attend to the gender and race of privileged group members occurs because they are typical and those attributes remain implicit. Contrary to this prediction, the gender and race of women and Black researchers was invoked in accusations of in-group bias even though they were typical researchers. On the other hand, White men who presented research about gender and race avoided accusations of bias although participants found them to be
highly surprising researchers. In other words, it was the failure to draw attention to the race and gender of White men that placed them in a position of privilege, not the failure to perceive their group membership in the first place. Consequently, evaluations of knowledge work that favoured White men over women and Black researchers called out the gender and race of academics in a selective manner, rather than being governed by automatic processes pertaining to perceptibility.

In modern UK academic institutions, the knowledge work of academics is subject to routine evaluation using universally applied meritocratic systems (Deem, 2004). Scholars have argued that the systems of evaluation employed in academic institutions inherently favour men (Deem, 1998; Deem & Johnson, 2003; Knights and Richards, 2000). Vertical gender segregation in the appointment of women and men to professor was neither defended by nor directly attributable to meritocratic measures of department performance. “Comparable worth” measures can be circumvented by attempts to maintain existing power relations (Reskin, 1988). The meritocratic measures of performance provided only indirect measures of privilege and disadvantage, but from this view, the tendency to evaluate academics selectively on the basis of social group membership could be responsible for inequality in the departments, rather than the meritocratic systems themselves.

The finding that students can evaluate knowledge work selectively on the basis of an academic’s gender is significant for the ways in which modern academic departments are evaluated. The NSS is a survey of student satisfaction that is conducted across the UK. The evaluations as captured by the NSS 2012 indicated that students were more satisfied in departments led by men than in departments led by women. On one level, this effect could reflect a bias in the NSS towards men. However, the results from Chapters 4 and 5 indicate that NSS evaluations may reflect the tendency for students to evaluate academics on the basis of social group membership. Gendered definitions of management, for example, can associate
men with managerial success and women with managerial failure (Ryan et al., 2011). As such, student evaluations could be motivated by ideals about the types of roles women and men academics perform.

The findings similarly suggested that universal scientific principles could be applied selectively to discredit the work of typical women and Black scholars. Participants were able to invoke the criterion of objectivity to construct accusations race bias against Black men, suggesting that men are not always in a position of privilege when they do science. This finding contrasts with the argument that ‘masculinist’ scientific structures necessarily privilege men (Harding, 1986; Morawski & Argonick, 1991). Consequently, it appeared that the universal principle of objectivity could be invoked selectively on the basis of the race of academics. The evaluation of psychological research in academic departments could be similarly influenced by the social membership of academics.

The participants in the experimental studies were predominantly undergraduate and prospective psychology students. It is not unreasonable to question whether the research evaluations provided by these students would be representative of the more senior academics who make judgments about research in their day-to-day activities. It is nonetheless significant to note that psychology students can evaluate knowledge work in a selective way that privileges white men. Some of these students will become psychology academics whose role it will be to evaluate the research of others. Indeed, the research experiences of scholars belonging to historically oppressed groups suggest that senior academics do unfairly accuse them of in-group bias (Gannon et al., 1992; Hendrix, 2002). In fact, the perception that oppressed groups are biased in favour of their ingroup can reflect day-today-ideology (McIntosh, 1988). In sum, the selective application of the criterion of objectivity could be indicative of ideology about oppressed and privileged groups, rather than a reflection of scientific knowledge or training.
Attention to social group membership may be selective in the sense that it is not governed by universal rules, but ideology that invokes group membership need not be carefully considered or well thought out. Ideologies can be learned, recycled and defaulted on without clear deliberation as to the logic or function of the argument (see Billig, 1991). For example, accusations of in-group bias against women and Black scholars may be learned as a standard or acceptable form of critique when evaluating gender or race-related research, or the assumption that meritocracy and scientific systems eliminate the evaluator’s own bias may discourage active consideration of the foundations of their critiques. Equality schemes that require academics to attend ‘bias training’ could encourage those who evaluate knowledge work to consider the basis of their decisions carefully, to avoid defaulting on ideological thinking, and discourage reliance on either meritocratic or scientific evaluation systems to eliminate bias.

Importantly, the present findings do not disqualify the possibility that inequality is an automatic consequence of the perceptibility of group attributes in some contexts. The domains of psychology that were explored in this thesis were carefully selected on the basis that they would be likely to render the social group membership of academics a salient factor. One can imagine some domains where people would not use the research subjects’ gender or race as a cue to the authors’ research. For example, the social group membership of researchers who work in domains not typically associated with oppressed social groups does not appear to factor into research considerations (Avery, 2008). People can also have trouble identifying non-typical members of a category when their distinctive attributes are not made salient (Pratto, et al., 2007). Additionally, meritocratic systems of evaluation could have a ubiquitous impact on inequality in academic psychology that was not detected in the present research. Women did indeed appear to be at a general disadvantage relative to men irrespective of glass escalator effects that enhanced men’s privilege. A longitudinal study that
explores the vertical segregation of academics in departments across consecutive RAE and NSS evaluations could go some way towards disentangling inequality and the impact of meritocracy. However, what the present results can tell us, is that theories based on the assumption that inequality is automatic do not provide universal theoretical models that are relevant to all contexts. As such, it is important that inequality researchers take context into consideration.

**Implications.** The findings described above indicate that theories that conceptualise inequality as the result of passive and automatic processes could underestimate the motivated and selective basis of inequality. This could be problematic for a few reasons. Firstly, theory that assumes inequality is automatic and passive will necessarily obscure the potential for ideologically motivated forms of inequality to occur. Additionally, if theories incorrectly attribute inequality to automatic processes rather than ideologically motivated processes, the solutions they suggest will be largely ineffective (Reskin, 1988). Theories that that equate inequality with horizontal segregation suggest that equalising the representation of women and men in a given occupational domain, and equalising opportunity, should solve inequality (Reskin, 1988). In line with the argument that these interventions may be ineffective, the results presented in this thesis found inequality in academic psychology persisted despite the fact that women and men were equally represented overall, and departments employed meritocratic systems of evaluation. Theory based on the assumption that inequality is automatic may prompt interventions that are implemented on the basis of false causal models.

Theories that assume inequality is automatic largely construct people as passive agents of inequality. By virtue of numerical representation, organisational structures, or processes of cognition, these theories suggest that people are either ignorant of inequality or are unable to affect it. Given that people can capitalise on social norms to enact inequality in subtle ways (Dovidio and Gaertner, 2004; Swim, et al. 1995) the construction of people as
passive agents of inequality may not only disguise active forms of discrimination, but could hypothetically perpetuate ‘wilful ignorance’.

On the other hand, and by the same reasoning, theories that give primacy to the automatic bases of inequality underestimate the active role people can take to engender equality. For instance, a workplace intervention that focuses primarily on developing a fair system of evaluation could miss opportunities for the practical participation of organisation members and groups, and could even inadvertently disempower those who may wish to create social change. The capacity for individuals to make decisions that can transform outcomes could provide a valuable gateway for inequality interventions.

**Conclusion**

The theoretical assumptions that privilege and disadvantage are equivalent mechanisms, and that inequality is automatic, precluded a view of inequality that could aid intervention in domains of psychology that are typical of historically oppressed groups. Specifically, these theories concealed the potential for an ideological basis of privilege. Whilst the theories may aim to redress inequality, they also obscured potential points of entry for enacting change; namely the capacity for people to actively privilege social groups. In addition, their construction of people and groups as passive agents of inequality can perpetuate subtle forms of motivated discriminatory behaviours. Consequently, the assumptions that connected these theories appeared to reflect ideology that can reify existing power relations.

If the problems I have noted lie in prevalent assumptions in inequality theory, then the remedy would require an approach to the study of equality that is less narrow and more contextually aware. Specifically, researchers should attend to the flexible and creative ways in which inequality can be maintained in different contexts. This is may not be a simple undertaking; to be consistent, theory has not emphasised singular and automatic mechanisms
because they are the only means of conceptualising inequality; instead, their affirmation implicitly advances existing power arrangements.

The research presented in this thesis provides a critical perspective of inequality theory and the extent to which it is useful for conceptualising inequality in the context of academic psychology. I hope to have opened up some alternative ways of approaching the study of privilege and disadvantage, and some points of entry for challenging inequality in modern UK academic psychology. Principally, the findings indicate that the conceptualisation of privilege and disadvantage as independent and ideologically motivated processes should to be included in models of inequality. This requires acknowledging that people can act in ways that privilege as well as disadvantage. Importantly, to do so means that people are not just passive agents of inequality. They are active agents of social change.
References


Table 1

Descriptive Statistics for Continuous Department Variables

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<tr>
<th>N</th>
<th>Mean</th>
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<th>Upper</th>
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<th>Kurtosis z</th>
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<tr>
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<td>Men</td>
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<td>13.36</td>
<td>11.82</td>
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<tr>
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<td>.48</td>
<td>.54</td>
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<td>4.78</td>
<td>7.05</td>
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<td>18.48</td>
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<td>.31</td>
<td>.26</td>
<td>.37</td>
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*Note. *p < .05, **p < .01, ***p < .001.
Table 2

Tests of Difference for Staff Distribution Variables by HoD Gender

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<td>(.13)</td>
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<td>(.14)</td>
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</table>

*Note. N = 83, Proportion of Professors that are women N = 73 (excludes departments with no professors). *p < .05, **p < .01. Standard deviations appear in parentheses below means.
Table 3

Correlations for Staff Distribution Measures

<table>
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<th>Measure</th>
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<th>Men</th>
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<th>Professors</th>
<th>Doctors</th>
<th>Proportion of Academics =</th>
<th>Professors</th>
<th>Women</th>
<th>Men</th>
<th>Professors</th>
<th>Doctors</th>
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<th>Women</th>
<th>Men</th>
<th>Professors</th>
<th>Doctors</th>
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</table>

Note. Results for Spearman’s $\rho_s$ (n = 85). Proportion of Professors that are women (n = 73) excludes departments with no professors.*$p < .05$, **$p < .01$, ***$p < .001$
Table 4

Correlations for NSS 2012 Measures of Student Satisfaction and RAE 2008 Research Quality Measures

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<tr>
<th></th>
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<th>Teaching Satisfaction</th>
<th>Feedback Satisfaction</th>
<th>RAE Four-Star</th>
<th>RAE Three-Star</th>
<th>RAE Two-Star</th>
<th>RAE One-Star</th>
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<th>RAE Academics Submitted</th>
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<td>-.03</td>
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<td>-.26*</td>
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<td>.42**</td>
<td>-.23</td>
<td>.34**</td>
<td>-.43**</td>
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Note. Results for Spearman’s $\rho$ for NSS (n = 73), RAE (n = 62) and NSS and RAE (n = 58). *p < .05, **p < .01, ***p < .001.

Table 5

Descriptive Statistics for the Model for the Proportion of Men who were Professors

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<tr>
<th>Variable</th>
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<th>Standard Deviation</th>
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<td>Proportion of academics that</td>
<td>.20</td>
<td>.13</td>
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<tr>
<td>were professors</td>
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<td></td>
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<tr>
<td>Proportion of academics that</td>
<td>.51</td>
<td>.14</td>
</tr>
<tr>
<td>were women</td>
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<td></td>
</tr>
<tr>
<td>Proportion of men that were</td>
<td>.27</td>
<td>.19</td>
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<tr>
<td>professors</td>
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Table 6

*Model Summary for the Proportion of Men that were Professors*

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<th>Model Term</th>
<th>B (SE)</th>
<th>( \beta )</th>
<th>Lower</th>
<th>Upper</th>
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<tr>
<td>Constant</td>
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<td>-0.14</td>
<td>0.29</td>
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<tr>
<td>Proportion of academics that were professors x Proportion of academics that were women</td>
<td>1.23* (.393)</td>
<td>.12*</td>
<td>-0.45</td>
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</table>

Note. *p < .05, ***p < .001.

Table 7

*Descriptive Statistics for the Model for the Proportion of Women Who were Professors*

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<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<td>Proportion of academics that were professors</td>
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<td>.13</td>
</tr>
<tr>
<td>Proportion of academics that were women</td>
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<td>.14</td>
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<tr>
<td>Proportion of women that were professors</td>
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Table 8

*Model Summary for the Proportion of Women that were Professors*

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<th>B (SE)</th>
<th>β</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.03 (.06)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of academics that were women</td>
<td>.05 (.11)</td>
<td>.03</td>
<td>-.16</td>
<td>0.27</td>
</tr>
<tr>
<td>Proportion of academics that were professors</td>
<td>.74*** (.12)</td>
<td>.72***</td>
<td>0.34</td>
<td>1.14</td>
</tr>
<tr>
<td>Proportion of academics that were women X Proportion of academics that were professors</td>
<td>-.16 (.39)</td>
<td>-.03</td>
<td>-.94</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Note. ***p < .001.
Table 9

*Correlations for NSS 2012 and Department Distribution Measures*

<table>
<thead>
<tr>
<th></th>
<th>Total Academics</th>
<th>Women</th>
<th>Men</th>
<th>Proportion of Academics = Women</th>
<th>Professors</th>
<th>Doctors</th>
<th>Proportion of Academics = Professors</th>
<th>Women Professors</th>
<th>Men Professors</th>
<th>Proportion of Professors = Women</th>
<th>Men Doctors</th>
<th>Women Doctors</th>
<th>Men Doctors = Professors</th>
<th>Women Doctors = Professors</th>
<th>Men Doctors = Doctors = Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSS Course Satisfaction</td>
<td>.04</td>
<td>-.03</td>
<td>.14</td>
<td>-.23</td>
<td>.22</td>
<td>-.09</td>
<td>.21</td>
<td>.22</td>
<td>.19</td>
<td>.10</td>
<td>-.12</td>
<td>.03</td>
<td>.22</td>
<td>.08</td>
<td>-.24*</td>
</tr>
<tr>
<td>NSS Teaching Satisfaction</td>
<td>-.04</td>
<td>-.04</td>
<td>.00</td>
<td>-.09</td>
<td>.20</td>
<td>-.17</td>
<td>.23</td>
<td>.27*</td>
<td>.13</td>
<td>.20</td>
<td>-.15</td>
<td>-.12</td>
<td>.26*</td>
<td>.09</td>
<td>-.07</td>
</tr>
<tr>
<td>NSS Feedback Satisfaction</td>
<td>-.13</td>
<td>-.06</td>
<td>-.16</td>
<td>.14</td>
<td>-.16</td>
<td>-.13</td>
<td>-.14</td>
<td>-.05</td>
<td>-.19</td>
<td>.08</td>
<td>-.07</td>
<td>-.13</td>
<td>-.11</td>
<td>-.19</td>
<td>.08</td>
</tr>
</tbody>
</table>

*Note.* Results for Spearman’s $r_s$, $N = 73$. *$p < .05.$
Table 10

Correlations for RAE 2008 and Department Distribution Measures

<table>
<thead>
<tr>
<th></th>
<th>Total Academics</th>
<th>Women</th>
<th>Men</th>
<th>Proportion of Academics = Women</th>
<th>Professors</th>
<th>Doctors</th>
<th>Proportion of Academics = Professors</th>
<th>Professors</th>
<th>Women Professors</th>
<th>Men Professors</th>
<th>Proportion of Professors = Women</th>
<th>Men Doctors</th>
<th>Proportion of Professors = Doctors</th>
<th>Professors</th>
<th>Proportion of Doctors = Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAE Four-Star</td>
<td>.26*</td>
<td>.29*</td>
<td>.14</td>
<td>.05</td>
<td>.27*</td>
<td>.21</td>
<td>.22</td>
<td>.23</td>
<td>.28*</td>
<td>.00</td>
<td>.26</td>
<td>.07</td>
<td>.13</td>
<td>.28*</td>
<td>.22</td>
</tr>
<tr>
<td>RAE Three-Star</td>
<td>.45***</td>
<td>.44***</td>
<td>.32*</td>
<td>-.02</td>
<td>.34**</td>
<td>.41**</td>
<td>.19</td>
<td>.33**</td>
<td>.32*</td>
<td>.05</td>
<td>.38**</td>
<td>.32*</td>
<td>.16</td>
<td>.21</td>
<td>.10</td>
</tr>
<tr>
<td>RAE Two-Star</td>
<td>-.12</td>
<td>-.13</td>
<td>-.16</td>
<td>.03</td>
<td>-.25</td>
<td>-.07</td>
<td>-.24</td>
<td>-.10</td>
<td>-.29*</td>
<td>.10</td>
<td>-.15</td>
<td>.01</td>
<td>-.09</td>
<td>-.28*</td>
<td>-.07</td>
</tr>
<tr>
<td>RAE One-Star</td>
<td>-.39**</td>
<td>-.42**</td>
<td>-.22</td>
<td>-.11</td>
<td>-.28*</td>
<td>-.37**</td>
<td>-.15</td>
<td>-.27*</td>
<td>-.26*</td>
<td>-.02</td>
<td>-.38**</td>
<td>-.20</td>
<td>-.12</td>
<td>-.21</td>
<td>-.23</td>
</tr>
<tr>
<td>RAE Unclassified</td>
<td>-.32*</td>
<td>-.24</td>
<td>-.28*</td>
<td>.19</td>
<td>-.33**</td>
<td>-.24</td>
<td>-.22</td>
<td>-.18</td>
<td>-.37**</td>
<td>.11</td>
<td>-.21</td>
<td>-.20</td>
<td>-.05</td>
<td>-.25*</td>
<td>-.01</td>
</tr>
<tr>
<td>RAE Academics Submitted</td>
<td>.61***</td>
<td>.38**</td>
<td>.63***</td>
<td>-.27*</td>
<td>.74***</td>
<td>.39**</td>
<td>.56***</td>
<td>.55***</td>
<td>.71***</td>
<td>-.05</td>
<td>.25</td>
<td>.43**</td>
<td>.41**</td>
<td>.50***</td>
<td>-.10</td>
</tr>
</tbody>
</table>

*Note. Results for Spearman’s rs. N = 62. *p < .05, **p < .01, ***p < .001*
**Table 1**

*Standardised Skew and Kurtosis Scores for Study 1: Single Gender Studies*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Skew z</th>
<th>Kurtosis z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts</td>
<td>86</td>
<td>-0.07</td>
<td>-1.88</td>
</tr>
<tr>
<td>Critical Thoughts</td>
<td>44</td>
<td>-2.43*</td>
<td>0.71</td>
</tr>
<tr>
<td>Research Bias</td>
<td>85</td>
<td>-3.81***</td>
<td>1.89</td>
</tr>
<tr>
<td>Funding Cut</td>
<td>86</td>
<td>0.33</td>
<td>-2.04*</td>
</tr>
</tbody>
</table>

*Note.* Scores for Critiques include scores from the Thoughts condition. *p < .05, **p < .01, ***p < .001.

**Table 12**

*Correlations for Dependent Variables for Study 1: Single Gender Studies*

<table>
<thead>
<tr>
<th></th>
<th>Thoughts</th>
<th>Critical thoughts</th>
<th>Research Bias</th>
<th>Funding Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts</td>
<td>-</td>
<td>.001</td>
<td>.056</td>
<td>-.054</td>
</tr>
<tr>
<td>Critical Thoughts</td>
<td>-.016</td>
<td>-</td>
<td>-.146</td>
<td>.484**</td>
</tr>
<tr>
<td>Research Bias</td>
<td>.211</td>
<td>.034</td>
<td>-</td>
<td>-.071</td>
</tr>
<tr>
<td>Funding Cut</td>
<td>.013</td>
<td>.172</td>
<td>-.029</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Results for Spearman’s *r* for conditions with Women Pseudo-Participants above the diagonal (n = 46) and conditions with Men Pseudo-Participants below the diagonal (n = 40). *p < .05, **p < .01.

**Table 13**

*Crosstabulation of Pseudo-Participant Gender and Imagined Researcher Gender*

<table>
<thead>
<tr>
<th>Imagined Researcher Gender</th>
<th>Pseudo-Participant Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>21</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4.4)</td>
<td>(-4.4)</td>
<td>19.93***</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-4.4)</td>
<td>(4.4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* ***= p < .001. Adjusted standardized residuals appear in parentheses below group frequencies.
Table 14

*Crosstabulation of Gender References by Pseudo-Participant Gender and Imagined Researcher Gender*

<table>
<thead>
<tr>
<th>Researcher Gender Reference</th>
<th>Pseudo-Participant Gender</th>
<th>Pseudo-Participant Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Man</td>
</tr>
<tr>
<td>None</td>
<td>Researcher Gender Woman</td>
<td>Researcher Gender Woman</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>(0.5)</td>
<td>(-0.5)</td>
</tr>
<tr>
<td></td>
<td>(-0.5)</td>
<td>(0.5)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Present</td>
<td>(-2.4)</td>
<td>(2.4)</td>
</tr>
<tr>
<td></td>
<td>(2.4)</td>
<td>(-2.4)</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Present</td>
<td>None</td>
<td>Researcher Gender Man</td>
</tr>
<tr>
<td></td>
<td>(2.1)</td>
<td>(-2.1)</td>
</tr>
<tr>
<td></td>
<td>(-2.1)</td>
<td>(2.1)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Present</td>
<td>(0.4)</td>
<td>(-0.4)</td>
</tr>
<tr>
<td></td>
<td>(-0.4)</td>
<td>(0.4)</td>
</tr>
</tbody>
</table>

*Note.* Adjusted standardized residuals appear in parentheses below group frequencies.

Table 15

*Standardised Skew and Kurtosis Scores for Study 1: Gender Bias*

<table>
<thead>
<tr>
<th></th>
<th>Skew z</th>
<th>Kurtosis z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts</td>
<td>-1.34</td>
<td>-1.05</td>
</tr>
<tr>
<td>Critiques</td>
<td>3.12**</td>
<td>0.00</td>
</tr>
<tr>
<td>Research bias</td>
<td>-2.92**</td>
<td>-0.32</td>
</tr>
<tr>
<td>Gender Identity Surprise</td>
<td>1.55</td>
<td>-2.17*</td>
</tr>
<tr>
<td>Interpretation Surprise</td>
<td>2.79**</td>
<td>-0.50</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p <.01.
Table 16

**Correlations for Dependent Variables for Study 1: Gender Bias**

<table>
<thead>
<tr>
<th></th>
<th>Thoughts</th>
<th>Critiques</th>
<th>Gender Bias</th>
<th>Research Bias</th>
<th>Gender Identity</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts</td>
<td>-</td>
<td>.22</td>
<td>-.16</td>
<td>-.07</td>
<td>-.37*</td>
<td>-.08</td>
</tr>
<tr>
<td>Critiques</td>
<td>-.02</td>
<td>-</td>
<td>.40**</td>
<td>.72***</td>
<td>.13</td>
<td>.13</td>
</tr>
<tr>
<td>Gender Bias</td>
<td>.06</td>
<td>.39**</td>
<td>-</td>
<td>.20</td>
<td>.09b</td>
<td>-.06</td>
</tr>
<tr>
<td>Research Bias</td>
<td>-.09</td>
<td>-.04a</td>
<td>.15</td>
<td>-</td>
<td>-.12</td>
<td>.09</td>
</tr>
<tr>
<td>Gender Identity</td>
<td>.05a</td>
<td>-.13</td>
<td>-.31*</td>
<td>-.07</td>
<td>-</td>
<td>.39**</td>
</tr>
<tr>
<td>Surprise</td>
<td>-.08</td>
<td>-.12</td>
<td>-.10</td>
<td>.09</td>
<td>.44**</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Results for Spearman’s $r$ for conditions with Woman Researcher above the diagonal ($n = 48$) and conditions with Man Researcher below the diagonal ($n = 45$). Corresponding coefficients with differing subscripts across the diagonal are significantly different at the $p < .05$ based on the Fisher $r$-to-$z$ transformation. *$p < .05$, **$p < .01$, ***$p < .001$. 

Table 17

**Tests of Difference by Target Gender**

<table>
<thead>
<tr>
<th>Target Gender</th>
<th>Woman</th>
<th>Man</th>
<th>$t$</th>
<th>$U$</th>
<th>$z$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts</td>
<td>4.75</td>
<td>3.70</td>
<td>3.85**</td>
<td>617.5</td>
<td>-3.51**</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>(1.17)</td>
<td>(1.42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critiques</td>
<td>1.85</td>
<td>1.43</td>
<td>1.29</td>
<td>904.0</td>
<td>-1.22</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>(1.66)</td>
<td>(1.47)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Bias</td>
<td>66.63</td>
<td>56.59</td>
<td>2.64*</td>
<td>625.5</td>
<td>-2.86**</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(16.85)</td>
<td>(18.82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Identity</td>
<td>30.68</td>
<td>49.71</td>
<td>-4.07**</td>
<td>525.0</td>
<td>-3.82**</td>
<td>87</td>
</tr>
<tr>
<td>Surprise</td>
<td>(21.48)</td>
<td>(22.58)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td>35.73</td>
<td>38.47</td>
<td>-0.69</td>
<td>839.5</td>
<td>-1.07</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>(19.44)</td>
<td>(17.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *$p < .05$, **$p < .01$. Standard deviations appear in parentheses below means.
Table 18

Model Summary for Accusations of Gender Bias

<table>
<thead>
<tr>
<th>Included</th>
<th>B (SE)</th>
<th>Lower</th>
<th>exp b</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.958 (.279)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target Gender</td>
<td>1.204* (.558)</td>
<td>1.27</td>
<td>3.33</td>
<td>1.17</td>
<td>9.95</td>
</tr>
<tr>
<td>Topic Surprise</td>
<td>-0.020 (.013)</td>
<td>0.96</td>
<td>0.98</td>
<td>.955</td>
<td>1.01</td>
</tr>
<tr>
<td>Target Gender x Topic Surprise</td>
<td>0.051 (.026)</td>
<td>1.00</td>
<td>1.21</td>
<td>0.99</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Note. Hosmer & Lemeshow p = .73, $R^2 = .12$ (Cox & Snell), .18 (Nagelkerke). Model $\chi^2(1,3) = 11.82, p = .008$. *p < .05.

Table 19

Standardised Skew and Kurtosis Scores for Study 2: Race Bias

<table>
<thead>
<tr>
<th></th>
<th>Skew z</th>
<th>Kurtosis z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prejudice Score</td>
<td>-0.379</td>
<td>-1.102</td>
</tr>
<tr>
<td>Total Biases</td>
<td>0.315*</td>
<td>-1.578</td>
</tr>
<tr>
<td>Bias Rating</td>
<td>-1.995*</td>
<td>0.106</td>
</tr>
<tr>
<td>Topic Surprise</td>
<td>3.239**</td>
<td>3.288**</td>
</tr>
<tr>
<td>Likeability</td>
<td>-2.290*</td>
<td>2.607**</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01.
Table 20

*Correlation Coefficients by Target Race*

<table>
<thead>
<tr>
<th></th>
<th>Total Biases</th>
<th>Race Bias</th>
<th>Bias Rating</th>
<th>Topic Surprise</th>
<th>Likeability</th>
<th>Prejudice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Biases</td>
<td>-</td>
<td>.26</td>
<td>.03</td>
<td>.45*&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-.24</td>
<td>.50*&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>Race Bias</td>
<td>.35</td>
<td>-</td>
<td>.35&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.31&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-.24</td>
<td>.05</td>
</tr>
<tr>
<td>Bias Rating</td>
<td>-.08</td>
<td>-.28&lt;sub&gt;a&lt;/sub&gt;</td>
<td>-</td>
<td>.07</td>
<td>.20</td>
<td>.19</td>
</tr>
<tr>
<td>Topic Surprise</td>
<td>.05&lt;sub&gt;a&lt;/sub&gt;</td>
<td>-.46*&lt;sub&gt;a&lt;/sub&gt;</td>
<td>.29</td>
<td>-</td>
<td>.11</td>
<td>.51*&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>Prejudice Score</td>
<td>-.05&lt;sub&gt;a&lt;/sub&gt;</td>
<td>.00</td>
<td>-.01</td>
<td>-.23&lt;sub&gt;a&lt;/sub&gt;</td>
<td>.06</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Results for conditions with Black Researcher above the diagonal (n = 23) and conditions with White Researcher below the diagonal (n = 25). *<sup>p</sup> < .05, **<sup>p</sup> < .01, ***<sup>p</sup> < .001. Corresponding coefficients with differing subscripts across the diagonal are significantly different at the <sup>p</sup> < .05 based on the Fisher *r*-to-*z* transformation.

Table 21

*Tests of Difference by Target Race*

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>White</th>
<th>t</th>
<th>U</th>
<th>z</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Biases</td>
<td>3.48</td>
<td>3.32</td>
<td>0.29</td>
<td>270.5</td>
<td>-.36</td>
<td>46</td>
</tr>
<tr>
<td>(1.53)</td>
<td>(2.15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bias Rating</td>
<td>47.11</td>
<td>54.00</td>
<td>1.07</td>
<td>229.5</td>
<td>-.99</td>
<td>45</td>
</tr>
<tr>
<td>(22.60)</td>
<td>(23.36)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topic Surprise</td>
<td>28.50</td>
<td>36.60</td>
<td>1.16</td>
<td>253.0</td>
<td>-.71</td>
<td>46</td>
</tr>
<tr>
<td>(19.41)</td>
<td>(27.91)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likeability</td>
<td>77.46</td>
<td>63.64</td>
<td>2.67*&lt;sup&gt;**&lt;/sup&gt;</td>
<td>162.5</td>
<td>-2.58*&lt;sup&gt;**&lt;/sup&gt;</td>
<td>46</td>
</tr>
<tr>
<td>(14.90)</td>
<td>(20.26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prejudice Score</td>
<td>4.70</td>
<td>5.07</td>
<td>-1.33</td>
<td>225.0</td>
<td>-1.29</td>
<td>46</td>
</tr>
<tr>
<td>(1.02)</td>
<td>(0.96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Conditions with Black Researcher n = 23 and conditions with White Researcher n = 25. Standard deviations appear in parentheses below means. *<sup>p</sup> < .05, **<sup>p</sup> < .01.
Table 22

*Tests of difference for Topic-Choice Surprise by Target Race and Accusations of Race Bias*

Bias

<table>
<thead>
<tr>
<th>Race Bias</th>
<th>Target Race</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
<td>t</td>
<td>U</td>
</tr>
<tr>
<td>Not mentioned</td>
<td>19.00</td>
<td>47.21</td>
<td>-2.03</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>(18.21)</td>
<td>(28.89)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n = 5</td>
<td>n = 14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned</td>
<td>31.13</td>
<td>23.09</td>
<td>1.06</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>(19.39)</td>
<td>(20.71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n = 13</td>
<td>n = 11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Standard deviations appear in parentheses below means.

Table 23

*Model Summary for Accusations of Race Bias*

<table>
<thead>
<tr>
<th>Included</th>
<th>B (SE)</th>
<th>Lower</th>
<th>exp b</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.755 (.426)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target Race</td>
<td>1.905* (.852)</td>
<td>1.27</td>
<td>6.72</td>
<td>1.27</td>
<td>35.70</td>
</tr>
<tr>
<td>Topic Surprise</td>
<td>0.005 (.023)</td>
<td>0.96</td>
<td>1.00</td>
<td>.961</td>
<td>1.05</td>
</tr>
<tr>
<td>Target Race x Topic</td>
<td>0.089* (.046)</td>
<td>1.00</td>
<td>1.91</td>
<td>1.00</td>
<td>1.20</td>
</tr>
</tbody>
</table>

*Note.* Hosmer & Lemeshow $p = .29$, $R^2 = .24$ (Cox & Snell), .33 (Nagelkerke). Model $\chi^2 (1, N = 48) = 13.403, p = .004$. *$p < .05$. 
Appendix A: List of Academic Institutions

Abertay University
Anglia Ruskin University
Aston University
Bangor University
Birkbeck University of London
Birmingham City University
Bristol University, School of exp psych
Brunel University London
Buckinghamshire New University
Cardiff University
Cardiff Metropolitan University
De Montfort University
Dundee University
Durham University
Edge Hill University
Glyndwr University
Goldsmiths, University of London
Institute of Education, University of London
Keele University
Kingston University, London
Lancaster University
Leeds Metropolitan University
Leeds Trinity University
Liverpool Hope University
London Metropolitan University
Manchester Metropolitan University
Middlesex University
National University of Ireland, Galway
Newcastle University
Northumbria University
Nottingham Trent University
Oxford Brookes University
Plymouth University
Queens University, Belfast
Royal Holloway University of London
South Bank London University
Swansea University
Trinity College Dublin
University College Cork
University of Aberdeen
University of Aberystwyth
University of Bath
University of Bedfordshire
University of Birmingham
University of Bolton
University of Buckingham
University of Cambridge
University of Central Lancashire
University of Chester
University of Derby
University of East Anglia
University of East London
University of Edinburgh
University of Essex
University of Exeter
University of Glasgow
University of Hertfordshire
University of Hull
University of Kent
University of Leeds
University of Leicester
University of Lincoln
University of Liverpool
University of Manchester
University of Nottingham
University of Oxford
University of Portsmouth
University of Roehampton
University of Sheffield
University of Southampton
University of St Andrews
University of Stirling
University of Strathclyde Glasgow
University of Sunderland
University of Surrey
University of Sussex
University of the West of England
University of Ulster
University of Warwick
University of West London
University of Westminster
University of Winchester
University of Wolverhampton
University of York
York St John University
Appendix B: Materials for Study 1, Chapter 4: Single Gender Research

Information Sheet

Study of thoughts about scientific research

This study is being carried out as part of my psychology PhD. I am interested in your thoughts about research findings.

In the experiment you will be given a questionnaire booklet. At the front of this booklet is a description of a study. Your task will be to read the description carefully, and answer the questions that follow. There are no right or wrong answers; we are interested in your thoughts and ideas. We estimate the task will take around 15 minutes to complete.

Your personal data will be treated with the strictest confidence and your involvement in the study will be kept anonymous. You are free to withdraw from the study at any stage.

If you have read and understood the above information, and agree to take part, please read and sign the consent form. If you do not feel happy continuing, or have any additional questions concerning the study please notify the experimenter.

Thank you

Freyja Quick

PhD Social Psychology
Debrief

Thank you for taking part in the study. You participated in one of two conditions investigating norms about the ways people talk about scientific research.

The studies described were fictional. They were presented to see how people talk about scientific research depending upon the gender of the research participants presented in the description. The study is looking at the different types of explanations that are offered under different conditions so will not be perceived as reflecting personal attitudes.

If you have any other questions, or wish to withdraw your data from the study please do not hesitate to contact me by e-mail at ps51fq@surrey.ac.uk.

If you wish to make a complaint regarding your participation in this experiment, please contact Dr Peter Hegarty at p.hegarty@surrey.ac.uk.

Thank you for your participation,

Freyja Quick

PhD Social Psychology
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 men with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your thoughts about this study (Please write up to six thoughts)

1. 

2. 

3. 

4. 

5. 

6. 

How biased or unbiased do you think the study was? (Please mark an ‘X’ on the line to indicate what you think)

Unbiased ____________________________________________________________________________ Biased

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% ____________________________________________________________________________ 100%

Your age _______________ Gender _______________
Race/Ethnicity _______________ Nationality _______________

251
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 women with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your thoughts about this study (Please write up to six thoughts)

1. ________________________________________________________
   ________________________________________________________
2. ________________________________________________________
   ________________________________________________________
3. ________________________________________________________
4. ________________________________________________________
5. ________________________________________________________
6. ________________________________________________________

How biased or unbiased do you think the study was?
(Please mark an 'X' on the line to indicate what you think)

Unbiased ___________________ Biased ___________________

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an 'X' on the line to indicate the percentage of funding that should be cut)

0% ___________________________________ 100%

Your age ___________________ Gender ___________________
Race/Ethnicity _______________ Nationality _______________
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 men with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your criticisms of this study (Please write up to six criticisms)

1.________________________________________________________________________

2.________________________________________________________________________

3.________________________________________________________________________

4.________________________________________________________________________

5.________________________________________________________________________

6.________________________________________________________________________

How biased or unbiased do you think the study was?
(Please mark an ‘X’ on the line to indicate what you think)

Unbiased ____________________________ Biased __________________________

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(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% ___________________________________________ 100%

Your age _______________ Gender _______________
Race/Ethnicity _______________ Nationality _______________
Post Traumatic Stress Disorder and Social Support

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Please list your criticisms of this study (Please write up to six criticisms)

1. 

2. 

3. 

4. 

5. 

6. 

How biased or unbiased do you think the study was? (Please mark an ‘X’ on the line to indicate what you think)

Unbiased __________________________________________________________________________ Biased

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% __________________________________________________________________________ 100%

Your age ___________________ Gender ___________________

Race/Ethnicity _______________ Nationality _______________
Appendix C: Materials for Experiment 1, Chapter 4: Single Gender Research

Information Sheet

Study of thoughts about scientific research

This study is being carried out as part of my psychology PhD. I am interested in your thoughts about research findings.

In the experiment you will be given a questionnaire booklet. At the front of this booklet is a description of a study. Your task will be to read the description carefully, and answer the questions that follow. There are no right or wrong answers; we are interested in your thoughts and ideas. We estimate the task will take around 15 minutes to complete.

Your personal data will be treated with the strictest confidence and your involvement in the study will be kept anonymous. You are free to withdraw from the study at any stage.

If you have read and understood the above information, and agree to take part, please read and sign the consent from. If you do not feel happy continuing, or have any additional questions concerning the study please notify the experimenter.

Thank you

Freyja Quick

PhD Social Psychology
Debrief

Thank you for taking part in the study. You participated in one of two conditions investigating norms about the ways people talk about scientific research.

The studies described were fictional. They were presented to see how people talk about scientific research depending upon the gender of the research participants presented in the description. The study is looking at the different types of explanations that are offered under different conditions so will not be perceived as reflecting personal attitudes.

If you have any other questions, or wish to withdraw your data from the study please do not hesitate to contact me by e-mail at ps51fq@surrey.ac.uk.

If you wish to make a complaint regarding your participation in this experiment, please contact Dr Peter Hegarty at p.hegarty@surrey.ac.uk.

Thank you for your participation,

Freyja Quick

PhD Social Psychology
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 83 men with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your thoughts about this study (Please write up to six thoughts)

1. ......................................................................................................................
2. ......................................................................................................................
3. ......................................................................................................................
4. ......................................................................................................................
5. ......................................................................................................................
6. ......................................................................................................................

How biased or unbiased do you think the study was?
(Please mark an 'X' on the line to indicate what you think)

Unbiased................................................................................................ Biased

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an 'X' on the line to indicate the percentage of funding that should be cut)

0%................................................................................................................. 100%

Your age__________________ Gender_________________
Race/Ethnicity____________ Nationality____________
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 women with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your thoughts about this study (Please write up to six thoughts)

1. 

2. 

3. 

4. 

5. 

6. 

How biased or unbiased do you think the study was? (Please mark an ‘X’ on the line to indicate what you think)

Unbiased _____________ Biased ______________

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% _______________ 100%

Your age _______________ Gender __________________
Race/Ethnicity _______________ Nationality _______________
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 men with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your criticisms of this study (Please write up to six criticisms)

1. 

2. 

3. 

4. 

5. 

6. 

How biased or unbiased do you think the study was?
(Please mark an ‘X’ on the line to indicate what you think)

Unbiased ___________________________ Biased

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?
(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% ___________________________ 100%

Your age ___________________________ Gender ___________________________
Race/Ethnicity ___________________________ Nationality ___________________________
Post Traumatic Stress Disorder and Social Support

Post Traumatic Stress Disorder (PTSD) is a mental illness that results from traumatic experiences. Symptoms include intrusive memories and flashbacks, nightmares, shame, depression, emotional numbness, anger, headaches, pessimism, stomach problems, chest pain, and avoidance of places, people and activities which may trigger memories of trauma. PTSD places a large annual burden on the UK economy, with an estimated 10% of people developing PTSD at some point in their life. In a recent government funded study, 63 women with PTSD were found to report particularly low levels of social support. The researchers concluded that to improve recovery rates of PTSD, the UK government should invest in initiatives aimed at encouraging family support for PTSD sufferers.

Please list your criticisms of this study (Please write up to six criticisms)

1. 

2. 

3. 

4. 

5. 

6. 

How biased or unbiased do you think the study was? (Please mark an ‘X’ on the line to indicate what you think)

Unbiased  Biased

As a result of the findings of the study, it was decided that £5 million pounds of government funds would be invested into improving family support for PTSD sufferers. However, in light of the spending review, it was decided that the funding allocated should be cut. What percentage of the £5 million pounds of funding do you think should be cut?

(Please mark an ‘X’ on the line to indicate the percentage of funding that should be cut)

0% 100%

Your age Gender
Race/Ethnicity Nationality
Information Sheet

Study of thoughts about scientist biographies

I am interested in your thoughts about a particular psychologist and their specialist topic.

In the experiment you will be given a questionnaire booklet. At the front of this booklet is a biography of psychologist. Your task will be to read the description carefully, and answer the questions that follow. Please do not use google or other resources when answering the questions. There are no right or wrong answers; we are interested only in your thoughts and ideas. We estimate the task will take approximately 15 minutes to complete.

Your personal data will be treated with the strictest confidence and your involvement in the study will be kept completely anonymous. You are free to withdraw from the study at any stage.

If you have read and understood the above information and agree to take part, please read and fill out the consent form and complete the questionnaire. If you do not feel happy continuing, or have any additional questions concerning the study please notify the experimenter. Once complete please send both saved files to ps51fq@surrey.ac.uk.

Thank you

Freyja Quick

MSc Social Psychology
Debrief

Thank you for taking part in the study. You participated in one of four conditions investigating norms about the ways people talk about scientific researchers.

The characters presented in the biographies are fictional. They were presented to see when people find the researcher’s gender and the gender of their research participants relevant. The study is looking at the different types of explanations that are offered under different conditions so will not be perceived as reflecting personal attitudes.

If you have any other questions, or wish to withdraw your data from the study please do not hesitate to contact me by e-mail at ps51fq@surrey.ac.uk.

If you wish to make a complaint regarding your participation in this experiment, please contact Dr Peter Hegarty at p.hegarty@surrey.ac.uk.

Thank you for your participation,

Freyja Quick

MSc Social Psychology
Biography Study

Biography of Dr Andrew Murphy

Dr Andrew Murphy is an Associate Professor in Psychology with expertise in clinical and experimental psychopathology. He obtained his PhD in psychology from the University of Leicester, and a post-doctoral degree in clinical psychology and psychophysiology from the University of Manchester.

Dr Andrew Murphy grew up in Northern Ireland, and moved to England in 1986. He has travelled extensively, including a year's charity work in Uganda where he met Dr M. Burton, who was to become his good friend and collaborator on numerous influential research projects. On his return to the UK, Dr Andrew Murphy married his long-term partner with whom he had two children.

Dr Andrew Murphy has since become one of the leading researchers in the psychological treatment of anxiety disorders. His area of expertise addresses various topics in psychopathology, with particular focus on post traumatic stress disorder (PTSD) among men as a result of combat.

PTSD is a mental illness resulting from child abuse, combat exposure, and other traumatic events. Approximately 60% of men who experience combat develop some symptoms of PTSD. Symptoms include intrusive memories and flashbacks of the event, nightmares, guilt, shame, depression, being easily startled, anger, headaches, stomach problems and chest pain.

Dr Andrew Murphy has developed new models and therapies for men who suffer PTSD as a result combat, which have shown to be more effective than other therapies and/or drugs. Dr Murphy maintains that empathy and sensitivity is central to post-traumatic therapy. He is a prolific and effective writer, whose tireless persistence has been recognised in awards for excellence in research.
In the space below, please list some reasons why you think Dr Andrew Murphy might have chosen to specialise in men with PTSD.

(Please write up to six explanations)

1. 

2. 

3. 

4. 

5. 

6. 

Demographic Information

Your age __________________________  Ethnicity __________________________

Gender __________________________  Occupation __________________________

Race ____________________________  Degree course ________________________

Thank you. You have now completed the questionnaire.
Biography Study

Biography of Dr Andrew Murphy

Dr Andrew Murphy is an Associate Professor in Psychology with expertise in clinical and experimental psychopathology. He obtained his PhD in psychology from the University of Leicester, and a post-doctoral degree in clinical psychology and psychophysiology from the University of Manchester.

Dr Andrew Murphy grew up in Northern Ireland, and moved to England in 1986. He has travelled extensively, including a year’s charity work in Uganda where he met Dr M. Burton, who was to become his good friend and collaborator on numerous influential research projects. On his return to the UK, Dr Andrew Murphy married his long-term partner with whom he had two children.

Dr Andrew Murphy has since become one of the leading researchers in the psychological treatment of anxiety disorders. His area of expertise addresses various topics in psychopathology, with particular focus on post traumatic stress disorder (PTSD) among women as a result of childhood abuse.

PTSD is a mental illness resulting from child abuse, combat exposure, and other traumatic events. Approximately 60% of women who are sexually abused as children develop some symptoms of PTSD. Symptoms include intrusive memories and flashbacks of the event, nightmares, guilt, shame, depression, being easily startled, anger, headaches, stomach problems and chest pain.

Dr Andrew Murphy has developed new models and therapies for women who suffer PTSD as a result of childhood abuse, which have shown to be more effective than other therapies and/or drugs. Dr Murphy maintains that empathy and sensitivity is central to post-traumatic therapy. He is a prolific and effective writer, whose tireless persistence has been recognised in awards for excellence in research.

Please answer the questions on the following pages
In the space below, please list some reasons why you think Dr Andrew Murphy might have chosen to specialise in women with PTSD.

(Please write up to six explanations)

1. __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________

2. __________________________________________
   __________________________________________
   __________________________________________

3. __________________________________________
   __________________________________________
   __________________________________________

4. __________________________________________
   __________________________________________
   __________________________________________

5. __________________________________________
   __________________________________________
   __________________________________________

6. __________________________________________
   __________________________________________
   __________________________________________

Demographic Information

Your age ___________________  Ethnicity ___________________
Gender ___________________  Occupation _______________
Race ___________________  Degree course _______________

Thank you. You have now completed the questionnaire.
Biography of Dr Angela Murphy

Dr Angela Murphy is an Associate Professor in Psychology with expertise in clinical and experimental psychopathology. She obtained her PhD in psychology from the University of Leicester, and a post-doctoral degree in clinical psychology and psychophysiology from the University of Manchester.

Dr Angela Murphy grew up in Northern Ireland, and moved to England in 1986. She has travelled extensively, including a year’s charity work in Uganda where she met Dr M. Burton, who was to become her good friend and collaborator on numerous influential research projects. On her return to the UK, Dr Angela Murphy married her long-term partner with whom she had two children.

Dr Angela Murphy has since become one of the leading researchers in the psychological treatment of anxiety disorders. Her area of expertise addresses various topics in psychopathology, with particular focus on post traumatic stress disorder (PTSD) among women as a result of childhood abuse.

PTSD is a mental illness resulting from child abuse, combat exposure, and other traumatic events. Approximately 60% of women who are sexually abused as children develop some symptoms of PTSD. Symptoms include intrusive memories and flashbacks of the event, nightmares, guilt, shame, depression, being easily startled, anger, headaches, stomach problems and chest pain.

Dr Angela Murphy has developed new models and therapies for women who suffer PTSD as a result of childhood abuse, which have shown to be more effective than other therapies and/or drugs. Dr Murphy maintains that empathy and sensitivity is central to post-traumatic therapy. She is a prolific and effective writer, whose tireless persistence has been recognised in awards for excellence in research.
In the space below, please list some reasons why you think Dr Angela Murphy might have chosen to specialise in women with PTSD.

(Please write up to six explanations)

1. 

2. 

3. 

4. 

5. 

6. 

Demographic Information

Your age ____________  Ethnicity ____________

Gender ____________  Occupation ____________

Race ____________  Degree course ____________

Thank you. You have now completed the questionnaire.
Biography Study

Biography of Dr Angela Murphy

Dr Angela Murphy is an Associate Professor in Psychology with expertise in clinical and experimental psychopathology. She obtained her PhD in psychology from the University of Leicester, and a post-doctoral degree in clinical psychology and psychophysiology from the University of Manchester.

Dr Angela Murphy grew up in Northern Ireland, and moved to England in 1986. She has travelled extensively, including a year's charity work in Uganda where she met Dr M. Burton, who was to become her good friend and collaborator on numerous influential research projects. On her return to the UK, Dr Angela Murphy married her long-term partner with whom she had two children.

Dr Angela Murphy has since become one of the leading researchers in the psychological treatment of anxiety disorders. Her area of expertise addresses various topics in psychopathology, with particular focus on post traumatic stress disorder (PTSD) among men as a result of combat.

PTSD is a mental illness resulting from child abuse, combat exposure, and other traumatic events. Approximately 60% of men who experience combat develop some symptoms of PTSD. Symptoms include intrusive memories and flashbacks of the event, nightmares, guilt, shame, depression, being easily startled, anger, headaches, stomach problems and chest pain.

Dr Angela Murphy has developed new models and therapies for men who suffer PTSD as a result combat, which have shown to be more effective than other therapies and/or drugs. Dr Murphy maintains that empathy and sensitivity is central to post-traumatic therapy. She is a prolific and effective writer, whose tireless persistence has been recognised in awards for excellence in research.
In the space below, please list some reasons why you think Dr Angela Murphy might have chosen to specialise in men with PTSD.

(Please write up to six explanations)

1. 
2. 
3. 
4. 
5. 
6. 

Demographic Information

Your age ________________  Ethnicity ________________
Gender ________________  Occupation ________________
Race ________________  Degree course ________________

Thank you. You have now completed the questionnaire.
Appendix E: Coding Scheme for Explanations Referencing Researcher and Pseudo-Participant Gender

Code for the presence (1) or absence (0) of explanations that reference the gender of a) the researcher; and b) the pseudo-participants.

E.g. When coding gender references to pseudo-participants:
Code as ‘0’ for ‘gender references’ when there are no references to pseudo-participants.
Code as ‘1’ for ‘gender references’ when there are one or more gender references to pseudo-participants.

Apply the same logic for gender references to the researcher.

Gender References to Researcher

Code references that treat the psychologist’s gender as a means of explanation
e.g. She is a woman so she can empathise with women
(Gender reference to the psychologist)
e.g. Dr Murphy studied women because she herself is a woman
(Gender reference to psychologist)

Do not code use of gendered pronouns as gender references.
e.g. She is charitable and applied herself to a good cause

Gender References to Pseudo-Participants

Code for gender references to pseudo-participants when explanations rely on descriptions of the gender membership of people who can belong to the psychologist’s target population.
e.g. Someone she knows suffers from PTSD (husband/brother/father).
(Gender reference to pseudo-participants)
e.g. Dr Murphy’s wife/daughter may have suffered from PTSD
(Gender reference to pseudo-participants)
e.g. Men are easier to study than women
(Gender reference to pseudo-participants)

Do not code gender when simply stating the participant group
e.g. He chose to study men with PTSD because he found it interesting
Appendix F: Materials for Chapter 5, Experiment 4: Gender Bias

Biography Study

Dr Angela Murphy

Dr Angela Murphy is an Associate Professor in Psychology with expertise in occupational psychology. Dr Murphy grew up in Northern Ireland, and moved to England in 1986. She has travelled extensively, including a year’s charity work in Uganda where she met Dr M. Burton, who was to become her good friend and collaborator on numerous influential research projects. On her return to the UK, Dr Angela Murphy married her long-term partner with whom she had two children. Dr Angela Murphy has since become one of the leading researchers in the study of the representation of women in occupational domains.

Dr Angela Murphy’s most recent research focused on the representation of women in psychology. Historically, psychology was an occupation dominated by men, with very few women entering the domain. However, recent research indicates that more and more women are entering the field. Dr Murphy’s research has looked more closely at this trend to uncover the level of gender equality in psychology.

Looking at data collected by various psychological associations and psychology institutions, Dr Murphy found a global trend for women to form the majority of psychologists. Dr Murphy found women to be particularly well represented in domains such as gender studies, developmental psychology and qualitative studies, whilst men were well represented in other fields.

Together, these findings led Dr Murphy to conclude that while women have made considerable inroads into psychology, stereotypes about women being ‘relational’, ‘moral’ and ‘sensitive’ lead to assumptions about the type of work women are most capable of performing. Consequently, women are deemed more suited to the study of areas such as developmental and gender research than to other research areas. Dr Angela Murphy concluded that the overall number of women working in psychology does not necessarily reflect improvements to the general level of gender equality experienced by those working in the domain.

What are your thoughts about what you have just read? Please write up to 6 thoughts.

1. 

2. 

3. 

4. 

5. 

6. 

PTO
How biased do you think the research described was?  
(Please mark an 'X' on the line to indicate how biased you think the research was)  

Biased __________________________ Unbiased ______________________

How surprising was it that Dr Angela Murphy interpreted the results as she did?  
(Please mark an 'X' on the line to indicate how surprising it was)  

Surprising ______________________ Unsurprising __________________

How surprising was it that Dr Murphy's research was conducted by a woman?  
(Please mark an 'X' on the line to indicate how surprising it was)  

Surprising ______________________ Unsurprising __________________

Demographic Information
Your age __________
Gender ______________
Race _______________
Ethnicity ___________

You have completed the questionnaire.
Dr Angela Murphy

Dr Angela Murphy is an Associate Professor in Psychology with expertise in occupational psychology. Dr Murphy grew up in Northern Ireland, and moved to England in 1986. She has travelled extensively, including a year's charity work in Uganda where she met Dr M. Burton, who was to become her good friend and collaborator on numerous influential research projects. On her return to the UK, Dr Angela Murphy married her long-term partner with whom she had two children. Dr Angela Murphy has since become one of the leading researchers in the study of the representation of women in occupational domains.

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Together, these findings led Dr Murphy to conclude that women have made considerable inroads into psychology and that the relational, moral and sensitive approaches women naturally adopt, privilege them to the study of areas such as developmental and gender research. Dr Angela Murphy concluded that the number of women working in psychology reflects improvements to the general level of gender equality experienced by those working in the domain.

What are your thoughts about what you have just read? Please write up to 6 thoughts.

1. 

2. 

3. 

4. 

5. 

6. 

PTO
How biased do you think the research described was?
(Please mark an 'X' on the line to indicate how biased you think the research was)

<table>
<thead>
<tr>
<th>Biased</th>
<th>Unbiased</th>
</tr>
</thead>
</table>

How surprising was it that Dr Angela Murphy interpreted the results as she did?
(Please mark an 'X' on the line to indicate how surprising it was)

<table>
<thead>
<tr>
<th>Surprising</th>
<th>Unsurprising</th>
</tr>
</thead>
</table>

How surprising was it that Dr Murphy's research was conducted by a woman?
(Please mark an 'X' on the line to indicate how surprising it was)

<table>
<thead>
<tr>
<th>Surprising</th>
<th>Unsurprising</th>
</tr>
</thead>
</table>

Demographic Information

Your age
Gender
Race
Ethnicity

You have completed the questionnaire.
Dr Andrew Murphy

Dr Andrew Murphy is an Associate Professor in Psychology with expertise in occupational psychology. Dr Murphy grew up in Northern Ireland, and moved to England in 1966. He has travelled extensively, including a year’s charity work in Uganda where he met Dr M. Burton, who was to become his good friend and collaborator on numerous influential research projects. On his return to the UK, Dr Andrew Murphy married his long-term partner with whom he had two children. Dr Andrew Murphy has since become one of the leading researchers in the study of the representation of women in occupational domains.

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What are your thoughts about what you have just read? Please write up to 6 thoughts.

1. _____________________________________________________________
2. _____________________________________________________________
3. _____________________________________________________________
4. _____________________________________________________________
5. _____________________________________________________________
6. _____________________________________________________________
How biased do you think the research described was?
(Please mark an ‘X’ on the line to indicate how biased you think the research was)

Biased ____________________________ Unbiased

How surprising was it that Dr Andrew Murphy interpreted the results as he did?
(Please mark an ‘X’ on the line to indicate how surprising it was)

Surprising ____________________________ Unsurprising

How surprising was it that Dr Murphy’s research was conducted by a man?
(Please mark an ‘X’ on the line to indicate how surprising it was)

Surprising ____________________________ Unsurprising

Demographic Information

Your age __________
Gender ______________
Race ________________
Ethnicity ________________

You have completed the questionnaire.
Dr Andrew Murphy

Dr Andrew Murphy is an Associate Professor in Psychology with expertise in occupational psychology. Dr Murphy grew up in Northern Ireland, and moved to England in 1986. He has travelled extensively, including a year’s charity work in Uganda where he met Dr M. Burton, who was to become his good friend and collaborator on numerous influential research projects. On his return to the UK, Dr Andrew Murphy married his long-term partner with whom he had two children. Dr Andrew Murphy has since become one of the leading researchers in the study of the representation of women in occupational domains.

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What are your thoughts about what you have just read? Please write up to 6 thoughts.

1. __________________________________________

2. __________________________________________

3. __________________________________________

4. __________________________________________

5. __________________________________________

6. __________________________________________
How biased do you think the research described was?
(Please mark an 'X' on the line to indicate how biased you think the research was)

Biased ____________________________ Unbiased

How surprising was it that Dr Andrew Murphy interpreted the results as he did?
(Please mark an 'X' on the line to indicate how surprising it was)

Surprising ____________________________ Unsurprising

How surprising was it that Dr Murphy's research was conducted by a man?
(Please mark an 'X' on the line to indicate how surprising it was)

Surprising ____________________________ Unsurprising

Demographic Information
Your age _________
Gender ______________
Race ________________
Ethnicity ____________

You have completed the questionnaire.
Appendix G: Prejudice Scale (Lepore & Brown, 1997)

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It makes sense for minority groups to live in their own neighbourhoods because they share more and get along better than when mixing with Whites.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I consider our society to be unfair to Black people.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>It should be made easier to acquire British citizenship.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The number of Black Members of Parliament (MPs) is too low, and political parties should take active steps to increase it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Minority groups are more likely to make progress in the future by being patient and not pushing so hard for change.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Given the present high level of unemployment, foreigners should go back to their countries.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The rights of immigrants should be restricted.</td>
<td>Restricted</td>
<td>Extended</td>
</tr>
<tr>
<td>8</td>
<td>If many Black persons moved to my neighbourhood in a short period of time, thus changing its ethnic composition, it would not bother me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>If people move to another country, they should be allowed to maintain their own traditions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Once minority groups start getting jobs because of their colour, the result is bound to be fewer jobs for Whites.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Those immigrants who do not have immigration documents should be sent back to their countries.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>12</td>
<td>Some Black people living here who receive support from the state could get along without it if they tried.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Suppose that a child of yours had children with a person of very different colour and physical characteristics than your own. If your grandchildren did not physically resemble the people on your side of the family, you would be</td>
<td>Very Bothered 1 2 3 4 5 6 7</td>
<td>Not Bothered At All</td>
</tr>
<tr>
<td>14</td>
<td>It is unfair to the people of one country if the immigrants take jobs and resources.</td>
<td>Strongly Disagree 1 2 3 4 5 6 7</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>15</td>
<td>I would not be concerned if most of my peers at the university were Black.</td>
<td>Strongly Disagree 1 2 3 4 5 6 7</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

REVERSED ITEMS – 1, 5, 6, 10, 11, 12, 14
Appendix H: Materials for Experiment 5, Chapter 5: Race Bias

Information Sheet – Understanding Research

You have been invited to participate in a study called “Understanding Research”. Before deciding, please read this information sheet carefully.

This study is looking at the process of understanding research. You will be given a description of a psychological study to read. You will be asked answer four short questions about the description. Answer these questions with what you think, as there are no right or wrong answers. You will then complete a short questionnaire and some demographic measures. The study will take up to 30 minutes to complete.

Your personal data and involvement in the study will be kept completely anonymous. Your data will be stored in accordance with the 1998 Data Protection Act and will be retained for a minimum of 10 years. You are free to withdraw your data from the study at any time. It is not anticipated that you will be subject to any adverse effects as a consequence of your involvement in this study. The study has been granted favourable ethical opinion by the University of Surrey Ethics Committee. If you would like further information please contact the experimenter, Freyja Quick at f.l.quick@surrey.ac.uk. Should you wish to make a complaint or have any concerns regarding your participation in this experiment, please contact Peter Hegarty at p.hegarty@surrey.ac.uk.

If you have read and understood the above information and agree to take part, please read and sign the consent form. If you do not feel happy continuing, or have any additional questions concerning the study please let the experimenter know.

Thank you.
Debrief – Understanding Research

Thank you for taking part in the study. You participated in one of two conditions investigating the role of race and ethnicity norms in research interpretation. The findings and Researcher in the description were fictional, but the issues you read about are like those actually studied by psychologists.

The study is aiming to see whether people have expectations about the ethnicity and race of authors of race-related research, and how this relates to thinking about experimenter bias. We are interested in looking at how scientific norms affect interpretations of scientific research, thus your data will not be perceived as reflecting personal attitudes. Your data will be kept completely anonymous and confidential and will be stored and processed according to the 1998 Data Protection Act. Your data will be retained for a minimum of 10 years.

If you have any other questions, wish to withdraw your data from the study, or would like further information on the subject, please do not hesitate to contact me by e-mail at f.l.quick@surrey.ac.uk. If you wish to make a complaint regarding your participation in this experiment, please contact Dr Peter Hegarty at p.hegarty@surrey.ac.uk.

Thank you for your participation

Freyja Quick

PhD Social Psychology
Professor Joseph Gaines

Professor Joseph Gaines is a prolific Diversity Researcher and a senior lecturer at the University of Houston, America. In his latest research, he aimed to examine the perceptions held by professors and students regarding (a) how professors engage in communication to build their classroom credibility and (b) how professors' race and ethnicity influence the establishment of their credibility. The study design included a combination of qualitative interviews and quantitative questionnaires collected at the University of Houston. Professor Gaines has completed data collection and is in the process of analysing the data.

Please answer the following questions

Thinking specifically about the research described above, how biased do you think Professor Gaines was? (Mark your response by writing an 'X' on the line)

- Unbiased
- Biased

Please think of some possible sources of Professor Gaines' bias. List up to 6 sources of bias.

1) 
2) 
3) 
4) 
5) 
6) 

Was Professor Gaines' topic choice surprising?

- Unsurprising
- Surprising

Does Professor Gaines look like a likeable person?

- Unlikeable
- Likeable
Professor Joseph Gaines

Professor Joseph Gaines is a prolific Diversity Researcher and a senior lecturer at the University of Houston, America. In his latest research, he aimed to examine the perceptions held by professors and students regarding (a) how professors engage in communication to build their classroom credibility and (b) how perceptions of the professors’ race and ethnicity influence the establishment of their credibility. The study design included a combination of qualitative interviews and quantitative questionnaires collected at the University of Houston. Professor Gaines has completed data collection and is in the process of analysing the data.

Please answer the following questions

Thinking specifically about the research described above, how biased do you think Professor Gaines was? (Mark your response by writing an ‘X’ on the line)

Unbiased __________________________ Biased

Please think of some possible sources of Professor Gaines’ bias. List up to 6 sources of bias.

1) ___________________________________________________________________
2) ___________________________________________________________________
3) ___________________________________________________________________
4) ___________________________________________________________________
5) ___________________________________________________________________
6) ___________________________________________________________________

Was Professor Gaines’ topic choice surprising?

Unsurprising __________________________ Surprising

Does Professor Gaines look like a likeable person?

Unlikeable __________________________ Likeable

PTO
Appendix I: Sample Consent Form

Consent Form

I the undersigned voluntarily agree to take part in the “Understanding Research” study

- I have read and understood the Information Sheet provided. I have been given an explanation by the investigators as to the nature, location and likely duration of the study, and of what I will be expected to do. I have been advised about any discomfort and possible ill-effects on my health and well-being which may result. I have been given the opportunity to ask questions on all aspects of the study and have understood the advice and information given as a result.

- I agree to comply with any instruction given to me during the study and to co-operate fully with the investigators. I shall inform them immediately if I suffer any deterioration of any kind in my health or well-being, or experience any unexpected or unusual symptoms.

- I understand that all personal data relating to volunteers is held and processed in the strictest confidence, and in accordance with the Data Protection Act (1998). Your data will be retained for a minimum of 10 years. I agree that I will not seek to restrict the use of the results of the study on the understanding that my anonymity is preserved.

- I understand that I am free to withdraw from the study at any time without needing to justify my decision and without prejudice.

- I acknowledge that in consideration for completing the study I shall receive the sum of one lab token. I recognise that the sum would be less, and at the discretion of the Principal Investigator, if I withdraw before completion of the study.

- I confirm that I have read and understood the above and freely consent to participating in this study. I have been given adequate time to consider my participation and agree to comply with the instructions and restrictions of the study.

Name of volunteer (BLOCK CAPITALS) ........................................................
Signed .................................................................................................
Date ........................................................

Name of researcher/person taking consent (BLOCK CAPITALS) ........................................................
Signed .................................................................................................
Date ........................................................