Facial Masculinity as a Predictor of Positional Preference in Gay Men

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Abstract

Men who have sex with men self-identify using labels which identify preferences for sexual behaviours. The most basic of these relate to favoured role in anal sex: top, versatile, bottom. These roles have social and cultural associations with gendered behaviour on a feminine-masculine binary. What drives identification with these heteronormative associations is poorly understood. Some studies have suggested that non-heterosexual faces can be distinguished from heterosexual faces with a degree of accuracy higher than chance would allow for. This study sought to present a further question as to whether gay men can identify positional preference among other gay men from facial photographs, testing how concordant self-reported positional preference is with anonymous ratings. Study 1 (n=114) showed that gay men cannot accurately predict positional preference among other gay men. Perceived facial masculinity/femininity was the most reliable predictor of perceived positional preference. Older men, or those with facial hair, were more likely to be rated as tops, and younger participants being rated more as bottoms. Study 2 (n=90) showed that the jawline, eyes, and presence of facial hair were the most cited features used to judge positional preference. Based on these findings, more research should be done into the association of projected and perceived masculinity and its concordance with actual reported positional preference behaviours.

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Masters by Research Thesis

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2024

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1. Introduction

So which one of you is the woman?

This vapid, vacuous question has plagued the sex lives of gay men. Sometimes directed maliciously, sometimes with misguided understanding, always loaded with unspoken assumptions. The question is properly; *When you have anal sex which one of you is receptive?*

So why the association with femininity? Are we still in the classical world where there is nothing feminine about gay sex, but everything gay about bottoming (Allen, 2006). In the classical world of Ancient Greece, the link between homosexual sex, age, and masculinity, was of utmost importance (K J Dover et al., 2016). As Henry and Steiger observe, “male citizens who continued the practice of receptive same-gender intercourse into adulthood were ridiculed, and were called *kinaidos*, a deeply stigmatizing insult that presupposed the traditional gender-role-violating characteristics of womanliness or effeminacy, along with character deficiencies in militarism and ethics” (Henry and Steiger, 2022, p. 120)

A large US sample showed that gay men (*n* = 26,032) have been shown to have more sex on average than any other coupled demographic (Frederick et al., 2018). This reputation has arguably been used as a tool to stigmatize gay men, having them be cast as adulterous and oversexed, being used to bolster opposition to gay marriage (Sirin et al., 2004), to be seen as vectors for venereal disease (Kurzban and Leary, 2001), and even to blame them for holding a strange power to cause straight men to fear for their lives as part of the legal *Gay Panic Defence* (Chuang and Addington, 1988).

The root of these social baises and aversion may lie in the fact that homosexuality, among any demographic, represents deviation from the norm. Gay identities violate tradition, and gay sex, with no possibility of conception has an implicit link with promiscuity and incidence of STDs (Rice et al., 2022).

There are a number of approaches that have been used to assess whether gay stereotypes conform to assumptions about homosexual behaviours and perceived femininity. The first, somewhat indirect approach is to present individual male and female targets of unspecified sexual orientation who vary in terms of their gender-role characteristics; participants’ perceptions of the sexual orientation of such targets are then assessed. Such studies, which have typically involved North American college student participants, have found that males (McCreary 1994), and females (Deaux and Lewis 1984) described as gender atypical (i.e.,

feminine males, masculine females) are viewed as more likely to be (or to become) gay than their gender typical counterparts.

More recently, Shiramizu et al. conducted a larger scale online study in which both MSM (n=623) and straight men (n=3163) of multiple ethnicities rated faces for preferences based on masculinity/femininity. Gay men were found to show stronger preferences for masculinised male faces, conversely straight men showed preferences for feminized female faces (Shiramizu et. al., 2020).

Empirical research into LGBT themes has changed even over its relatively modern history. Three distinct stages are recognised wherein homosexuality is categorised as a disease, then from the mid-20th century the diagnosis of disease was reversed, and homophobia became the disease, finally from the early 1990s research began to be characterised by an institutional drive to understand and change attitudes toward alternative sexualities. This is the current era of LGBT research (Maher et al., 2009).

1.1 Top, Vers, Bottom – Understanding Positional Preference

Many men who have sex with men self-identify by their Positional Preference. Wegesin & Meyer-Bahlburg (2000) found that almost half of 84 participants in New York City identified with a Positional Preference label and used this label when seeking sex. During sexual intercourse between men, the top assumes an insertive and penetrative role whereas the bottom is penetrated. Versatile men report equal enjoyment of both roles.

Wegesin & Meyer-Bahlburg reported that most men in their study (56%) self-identified as versatile.(Wegesin & Meyer-Bahlburg, 2000). Johns et al. found differing statistics on Positional Preference in their study of 34 young (18–24-year-old) men in Detroit; just under 1/3 of men identified with either top or bottom roles, compared to the 26% of men who identified as versatile (labelled as 'both' in this study) (Johns et al., 2012).

In my own data collected in Study 1 below, I found that 42.86% of participants self-identified as top, 35.71% as bottom, and 14.29% as versatile. Study 2 identified specific facial features that were more likely to be used to guess the Positional Preference of other men, but whether these features were deliberate signals of Positional Preference (such as beardedness) is not known. Whilst measures were taken to control elements of personal appearance choices (e.g. participants were asked to remove makeup and cover up their own clothes), beardedness was something I was unable to control, and could be considered a deliberate signal of masculinity. As the data will show, beardedness was not a useful predictor of positional preference, only ratings of masculinity.

Unlike Johns et al, I did not limit participation to a particular age group, which may explain the greater proportion of particular positional preferences. Indeed, Wegesin & Meyer-Bahlburg found upon repeating their study 5 years later that most participants no longer identified with their previous Positional Preference, suggesting that Positional Preference may be fluid and susceptible to change with age.

Male and female penetrative roles during heterosexual sexual intercourse are theorized to have developed evolutionarily to facilitate human reproduction (Symons, 1981). Roles are correlated with physiological and psychological expressions of gender (Campbell, 1995). Much less is known regarding penetrative roles during same-sex sexual intercourse (Hart, Wolitski, Purcell, Gómez, & Halkitis, 2003; Moskowitz, Rieger, & Roloff, 2008), particularly given that cisgender men have the physiological capacity to both penetrate and be penetrated (through anal intercourse) and lack the ability to become pregnant. It is still

unknown why men who have sex with men should show exclusively insertive, exclusively receptive, or flexible preferences in male-male penetrative sex (Tskhay et al., 2014). A decade has passed since this study, and little has changed in our understanding of these preferences.

The goal of the current research was to explore how gay men's beliefs about masculinity were associated with their beliefs about the gendered nature of sexual self-labels and their behaviour in anal intercourse. Research has shown that we make very quick judgements when assessing our attraction to other people. As an evolutionary strategy, this helps avoid wasting precious time and resources on an unsuitable partner. However, these judgements are grounded in an assumption of mating potential, making applying standard mating preferences to research on gay men very difficult, or even impossible.

1.2 "Tribes" – Gay Sexual Attraction as Cultural Conformity

Age in among gay men can be used to further stratify an individual as belonging to one of several groups or "tribes" of men. Topping and bottoming are behaviours that exist across the entire spectrum of gay sexualities but can be particularly associated with one or more of these particular tribes.

(Prestage et al., 2015) summarised these tribes in their overview of gay male subcultures:

- Bears – generally older gay men defined by their larger bodies, either in size or frame, and in particular an abundance of body hair. Bears may further divide into muscle bears – those defined by the presence of more muscle than fat. Bears are usually held to be more sexually dominant, and thus, more likely to be tops. Younger bears are called "cubs" or "otters" and are more associated with bottoming than older bears.
- Twinks – young, slender gay men or boys defined by their youth. Generally with no or very little body hair. Twinks are generally considered to be bottoms and are often paired with bears or daddies in an older/younger dominant/submissive dichotomy.
- Twunks – a more modern term, a combination of "twink" and "hunk." These men are still youthful but less explicitly boyish due to their more muscular bodies. They are not necessarily associated with daddies/bears. In a relationship between a twink and a twunk – the latter would be the assumed top.
- Daddies – Older men generally seeking younger men. These men may be an amalgam of other tribes. They will almost always be sexually dominant, with younger partners, and may be socially/fiscally dominant in the relationship as well. Associated with topping.
- Discreet/DL – DL meaning "down low" describes a man looking for gay sex who may once have been called "closeted" or otherwise not "out". They will not exhibit stereotypically gay social behaviours and may not think of themselves as homosexual. They are often in heterosexual relationships and may think of themselves as straight. They may have any Positional Preference.
- Jock – Defined by their physical fitness and musculature. These men are athletic and associated with topping.

- Wolves – Hairy like bears, but slim and athletic like jocks, these men straddle the line between tribes but are otherwise characterised by sexual confidence and dominance. There is an association with topping.

It is of course important to note at this point that these tribes, deeply ingrained and homogenous as they may be within the gay social scene, are also simply stereotypes. Not all twinks are bottoms who prefer older men. Not all daddies are sexually dominant. Not all fit men who have sex with men are jocks. The nature of these tribal stereotypes, however, serves to demonstrate a pattern where more masculine types or tribes are explicitly associated with topping as a Positional Preference in gay male culture. Those tribes (Bears, Jocks, Wolves, Daddies) are all associated with maturity, physical fitness, and body/facial hair. Conversely, if we look at those tribes associated explicitly with bottoming, we find only twinks with a stereotype of youth, slender body types, hairlessness, and sexual submission. It is thus difficult to miss the line drawn between topping as a masculine behaviour and bottoming as a feminine one.

In summary, gay men have developed cultural stereotypes to divide themselves into different tribes. These tribes are associated with sexual Positional Preferences for bottoming or topping. Both these tribe delineations and Positional Preference are correlated with stereotypes of masculinity and femininity. Therefore, we have to ask why would heteronormative sexual stereotypes be used to construct homosexual stereotypes?

1.3 The Applications of Gender Stereotypes

The intersection of gender stereotypes and sexual roles among gay men represents a nuanced domain particularly in the study of identity and behaviour. Gender stereotypes, broadly defined, are culturally and socially constructed roles and expectations attributed to individuals based on their perceived gender. These stereotypes often delineate binary categories of masculinity and femininity, which are deeply entrenched in societal norms and expectations (Bem, 1981).

The objective fact of the mechanism of anal sex between two people is simply that one must be receptive, and the other penetrative. To draw masculine and feminine parallels to this behaviour occurring between two masculine figures is to echo the cultural taboo of the classical world and the perceived diminishment of manhood implied by bottoming.

It is arguably due to this repeated stigmatisation across history of the behaviours of gay men that the tribal system may act as a codification of social cues as a concealment system to avoid detection (Vytniorgu, 2024). These languages have developed in the presence of intolerance and danger. However, these are cultural pressures, not evolutionary ones. If social pressure has evolved to supress and codify gay behaviour, could evolutionary pressures be at play to offset this suppression and provide other cues, physical and phenotypical, to allow men who have sex with men to distinguish one another in a world where selecting the wrong partner could not only lead to a failure of mate choice, but also to potential danger? (Underhill, 2020)

This danger does not necessarily come from outside of the experience of gay men, but sometimes from within, in the most intrusive way, from from other sexual minority men who express contempt and hostility toward effeminate men (Taywaditep, 2002). In addition to desiring masculinity in others, sexual minority men also strive to appear masculine to other sexual minority men (e.g., Sánchez & Vilain, 2012) and in their performances of gender in relationships (Lu et al., 2019). This preference within the community for masculine over feminine gender presentation can lead to both romantic and social rejection for sexual minority men who do not present as traditionally masculine (Skidmore et al., 2006). For instance, several studies on personals advertisements in the USA have found that the

majority of gay men who post advertisements describe themselves in stereotypically masculine ways and/or overtly state not wanting effeminate partners (Bailey, Kim, Hills, & Linsenmeier, 1997).

Furthermore, qualitative studies of online communities have reported frequent hostility toward “queens” . Survey work has echoed these findings, with most gay men reporting a preference for stereotypically masculine partners (Sanchez & Vilain, 2012), and displaying negative attitudes toward non-gender conforming gay men. There is also evidence that most gay men wish to be more masculine and less feminine than they perceive themselves to be (Sanchez & Vilain, 2012). This rejection of perceived femininity and desire for masculine self-presentation has clear links to the concept of internalized homophobia, which occurs when gay men direct the negative attitudes that society holds regarding gay men inward.

Recent research has documented the way in which pressure to conform to masculine gender is embedded in men’s discourse and practice on mobile apps. In an online survey of sexual minority men primarily from the USA, Canada, and other Anglophone societies, researchers found that longer term usage of mobile apps was associated with a decline in self-perceived masculinity (Miller & Behm-Morawitz, 2020). They interpret this finding as indicative of the way in which rigid norms around masculinity are cultivated on the apps and lead many men to question whether they adhere to standards. Qualitative research of British men’s speech on mobile apps supports the notion that many men use discourse that conforms to traditional heteronormative masculinity or a “straight-acting” style, with some men using online speech emulating the figure of the *lad* in British culture which they took to be a model of hegemonic masculinity (Sarson, 2020).

As discussed above, the transgressive nature of homosexuality has meant that gay people have often been forced to conceal their identity and hide their sexual lives and behaviours. Entire linguistic systems and gay-specific cants have arisen from this need to obfuscate gay culture for fear of persecution. This is similar to other historical and current non-verbal cants and social signalling among gay men such as the hanky code, the wearing of jewellery in the left ear, and the placement of accessories on the wrists or ankles to denote preferred Positional Preferences (Cornier, 2019).

So, appearances are important; labels are important; and sex is important. In a world of twinks, twunks, otters, and wolves we see that gay men categorise themselves and other men in ways that do not apply to heterosexual men. These categories are now fully embedded in technologically-mediated male dating in the modern world. Imagine for a moment a man looking for a sexual encounter (romantic or otherwise) downloads one of any number of dating apps to facilitate a meeting. If this man is straight, he will be asked for

basic demographic information to complete his profile. For example, on Tinder, this will include Name, age, and location. Now imagine this same man is gay, and downloads an app catered to gay men. The same basic demographic information necessary to complete his profile will now require extra information for the consumption of any potential sexual partner. In 2013, Grindr, (a common hook-up app catered to gay men) introduced a space to identify one's own tribe. In selecting his tribe, the man must engage with a tangle of self and other imposed labels through which to find a suitable partner. He must define himself as more masculine or less masculine than the average gay man.

As shown above, when placed in historical context, gay men have been subjected to several layers of stereotyping: one that pertains to their sexual orientation, another that aligns them with gendered expectations, and yet another which is performed culturally. The societal perception of gay men frequently vacillates between exaggerated masculinity and hyper-femininity, often depending on the context and the observer's biases (Herek, 1984). This binary framing can lead to a polarized understanding of gay male identity, where individuals are either viewed as conforming to heteronormative masculine ideals or as embodying traits typically associated with femininity.

The performance of these gender stereotypes by gay men is not merely a matter of social perception and stereotyping, but also an internalized process that dictates behaviour. Related to this is the debate between essentialist views of homosexuality versus constructivist views. Butler (1990) posits that gender is performative, suggesting that individuals enact and reproduce gender norms through their actions and interactions. For gay men, this performativity is often evident in the roles they adopt within intimate relationships, particularly in sexual contexts (Ding and Rule, 2012). The roles of top and bottom are not merely descriptive of sexual positions but are imbued with broader gendered connotations. The top is often associated with traditionally masculine attributes such as dominance, assertiveness, and control, whereas the bottom is linked with qualities perceived as feminine, including passivity, submission, and receptivity (Taywaditep, 2001). These associations thus reflect deeper societal judgements that gay men may consciously or unconsciously internalize and perform.

These sexual roles (top/bottom) shape not only sexual configurations but also relationship dynamics between MSM, even outside of sexual relationships. Previously I noted evidence that gay men may advertise themselves on dating sites using gendered lenses. However, Moskowitz, Rieger, and Roloff (2008) found that gay men who identify as tops often exhibit more traditionally masculine traits, while those who identify as bottoms may display

characteristics aligned with femininity. This alignment reinforces the gendered stereotypes and highlights the performative nature of these roles within the context of gay relationships.

The decision to adopt a particular sexual role, be that top, bottom, vers, or none[1], can be influenced by a variety of factors, including self-esteem, social desirability, and the desire for acceptance within the gay community (Bailey et al., 1997). The degree to which identities are expressed for these reasons is not within the scope of this study, but it is important to recognise that these preferences are often shaped by the need to conform to or resist societal expectations, further illustrating the complex interplay between heterosexually inclined stereotype and sexual behaviour.

In this study, I have chosen the terms gay, homosexual, LGBT, and MSM (men who have sex with men) to refer to the differing yet overlapping spheres of sexuality which this study is concerned with. Decades of research have shown that there is still no generally accepted consensus with which to refer to sexuality to ensure tact and respect. I have chosen the above terms to strike a balance between being concise yet respectful, though I recognise that selection of the most appropriate terminology has been subject of considerable debate (Boswell, 1980; Leck; 1995; Morris, 2000). The rapidly shifting cultural attitudes towards sexual identity make choosing an objectively inclusive term almost impossible. An effort to plot these differing experiences of sexual identity on a less binary scale was made via the use of Sexual Configurations Theory (van Anders, 2015), but this was of limited use as will be discussed later.

[1] Gay men who do not enjoy anal sex often identify as “sides” (Hall, 2017; Jones, 2009). This indicates for preference for things alongside anal sex, i.e., digital sex, oral sex, frottage etc. Though these men do not necessarily adhere to a penetrator/penetrated dichotomy, the gender-aligned top and bottom labels still apply. A side can further identity as a side bottom (meaning this individual prefers to perform the sex acts rather than receive them).

1.4 Heteronormative Applications of Positional Preference

Current understandings of human mate choice generally adhere to sexual selection theories that propose a model of competition and investment. Models are focused around sexually dimorphic traits being costly and therefore indicating greater genetic health (Hodges-Simeon et al., 2011; Puts et al., 2006). Of course, these understandings are necessarily centred on a male-female pairing for the purpose of producing offspring.

Through this lens, facial attractiveness can be perceived as signalling genetic fitness and reproductive health (Mitani et al., 1996; Thornhill and Gangestad, 2008). Sexually dimorphic traits which advertise masculinity include the jawline, brow ridge, eye shape, and the presence of facial hair. These features are all subject to the most extreme changes when, at the onset of puberty, an abundance of testosterone shapes the face. These changes, along with changes in vocal pitch and frequency (Hodges-Simeon et al., 2011; Puts et al., 2006) have been seen to signal aggression, dominance, and assertiveness[2]. Conversely, the same features in opposition (soft jaw, large eyes, full lips, lack of facial hair), are associated with higher oestrogen levels and typically perceived as indicators of youth and fertility in women (Perrett, 2017). Importantly for our purposes, both men *and women* consider facial femininity attractive in women; it is not limited to men seeking a female partner.

While these theories provide a basis for understanding facial attractiveness as a facet of mate choice, they often do not consider the diversity of human sexual behaviour. For MSM, preferences for masculine and feminine faces exist (Vytniorgu, 2024) and may not be shaped only (or necessarily at all) by a genetically driven bias that supports procreation, but also cultural norms and stereotypes (LeVay, 2010). These preferences between and among MSM for differing levels of masculinity (as shown in Vytniorgu) will be discussed further below.

From an evolutionary perspective, preferences for masculine/feminine faces among gay men can still be interpreted through the lens of mate selection. Although reproduction is impossible, the phenotypic traits associated with overall health and genetic fitness, and cues

[2] However, research has shown (Boothroyd et al., 2013) that heterosexual women do not strongly favour facial masculinity in the context of mate choice, and facial masculinity as a signifier of genetic health in the same context is not strongly linked (Zeigler-Hill et al., 2015).

which signal social dominance (Puts et al., 2006) might still play a role. Studies which have shown a masculine features signal strength and the ability to provides resources and protection (Rhodes, 2006) could be desirable to anyone, regardless of sex, gender, or the ability to procreate.

1.5 Evidence of Facial Preferences in Gay Men

Empirical studies on facial preference among MSM have produced a contradictory body of literature. Moskowitz et al. Found that gay men, like straight women, demonstrated a preference for masculine faces, which they associated with dominance (Moskowitz et al., 2008). This was further enforced by Glassenberg et al. (2010) who found that the preference shown by gay men for masculine traits was even greater than the same preference found among heterosexual men & women (Glassenberg et al., 2010).

Conversely, other studies have resulted in a marked preference for feminine faces amongst gay men (Mogilski and Welling, 2018; Thornhill and Gangestad, 2008) which was characterised as a desire for emotionally nurturing partners being expressed through the internalisation of feminine faces with caring and nurturing natures. Other studies have shown how men prefer feminine faces, but masculine voices, regardless of gender (O'Connor et al., 2013).

These studies represent the broad range of findings when applying typical sexual selection approaches to a demographic that is not heterosexual. However, heterosexual gender norms form a notable thread throughout this sphere of research. Gender conformity among gay men remains strong. Gay men who identify more strongly with their own masculinity are more likely to perform masculine social roles and prefer masculine faces in other men (Lippa, 2008). Those who identified less strongly with a gender binary were shown to reflect a preference for more feminine faces, and a broader acceptance of gendered social identity. As such, those cultural gender norms and groupings discussed above represent a potential cause for men's adherence (or not) to preferences for sex typicality in a partner.

It is important to note that the current study was performed on a university campus, a site and demographic body associated with progressive views on sexuality. Examples of egalitarian cultures such as this have been found to foster greater acceptance of sexual diversity and broader attraction to a spectrum of gender expressions (Kachel et al., 2024).

An alternative focus for studies of facial preferences and perceptions among gay men is in whether they are able to detect and prefer the faces of potential sexual partners (i.e. other gay men). Mulitple studies have alleged that both people and AI neural networks can identify the face of a gay man among straight men with a greater degree of accuracy than chance.

Using AI trained on over 300,000 images of men and women, Wang & Kosinski (2018) found that AI could correctly identify a gay man's picture in 81% of cases. Humans were accurate 61% of the time with gay men and women were only marginally more successful than straight men and women. Tskhay & Rule (2013) undertook a similar study of which the main goal was to see whether Positional Preference could be inferred from facial photographs. Both these studies, however, used non-standardised photographs pulled from social media and dating websites (see also: Tskhay and Rule, 2013; Wang & Kosinski, n.d.; Zheng and Fu, 2024; Zheng and Zheng, 2016). Therefore, we cannot draw accurate conclusions on phenotypic facial features. As authors noted, dress/pose/expression may have influenced the decisions of both AI and human participants (Wang & Kosinski, 2018)

Tskhay and Rule were less cautious and stressed the importance of perceived masculinity or femininity in their findings. "Because previous research suggests that tops are perceived to be more masculine than bottoms, and because these perceptions appear to be somewhat valid, we propose that people will make accurate inferences about gay men's sexual roles by using information about the relative perceived masculinity of the targets being judged." (Tskhay and Rule, 2013, p. 2).

2. Study 1

2.1 Introduction

Though there are other relevant preferences to consider, Positional Preference does not factor into heterosexual mate choice, as the male partner will always penetrate the female in vaginal intercourse. By contrast, MSM confront unique obstacles in choosing a sexual partner. Mutual attraction is secondary to establishing that the prospective partner is open to homosexual encounters, and even then, Positional Preference might represent a final deterrent to sexual congress. Although by no means exclusively, anal sex is practiced especially among MSM as a form of penetrative intercourse. This necessitates a dynamic of penetrator and penetrated, terms translated into gay vernacular as “top” and “bottom”, while “versatile” or “vers,” can take on both or either role.

Interviews with gay men suggest that they rely on stereotypic gender roles when speaking about their sexual and romantic relationships (Kippax & Smith, 2001). Some couples interviewed even described their relationship as that occurring between ‘‘man and woman’’ (Kippax & Smith, 2001). This generalization likely reflects overall masculinity and femininity. Research has demonstrated, for example, that men who self-identify as tops and versatiles are less feminine than men who self-identify as bottoms. (Johns et al., 2012)

Furthermore, men who self-identified as tops also tended to report an increased degree of internalized homophobia, possibly because of discomfort associated with being perceived as effeminate (Hart et al., 2003). Similarly, other investigations suggested that bottoms tend to behave in a more feminine manner than tops or versatiles (Bailey et al., 1997; Wegesin & Meyer-Bahlburg, 2000; Weinrich et al., 1992). Additionally, people who self-identified as tops reported more masculine behaviour and more stereotypically masculine physical characteristics (e.g., larger measured penis size) (Moskowitz & Hart, 2011). This suggests that tops could, indeed, be more masculine than bottoms and that naïve perceivers may use this information to make inferences about sexual roles that might therefore be accurate. More specifically, because previous research suggests that tops are perceived to be more masculine than bottoms, and because these perceptions appear to be somewhat valid, we propose that people will make accurate inferences about gay men’s sexual roles by using information about the relative perceived masculinity of the targets being judged. Furthermore, most studies to date have concerned the masculinity of behaviours expressed by tops and bottoms and how that relates to participation in the respective sexual practices

semantically reflective of insertive versus receptive roles during intercourse. The main goal of the current study, however, was to see whether these sexual roles could be perceived with accuracy exceeding chance levels, when viewing only faces, and to determine the role that perceptions of masculinity play in making these judgments.

A number of prior studies have investigated men's perceptions of sexual orientation or positional preference using only facial photographs (Tshkay & Rule (2013), Moskowitz et al. (2008), Zheng & Zheng (2016), Zheng & Fu (2024[3]). These studies typically find that human 'gaydar' for general orientation and Positional Preference does exist at least in part. But as discussed in the literature review above, these studies shared limitations – particularly that the facial photographs used were non-standardised. The current study therefore controlled image standardisation more rigorously using laboratory photographs. These other studies all focus on the sexual identity of gay men as expressed via self-labelling binary terms like *top* and *bottom*. Recent studies however illustrate that it is not useful to think of sexual labels in binary terms, and individuals may place themselves anywhere on a spectrum (van Anders, 2015). For the purpose of the current study I have therefore chosen the term Positional Preference and considered a more subtle range of positions (*top, vers top, vers(atile), vers bottom, bottom.)* .

Ethical approval was granted for both studies by the Durham University Ethics Board.

[3] this study was published after the completion of Study 1, but was used to inform the methods of Study 2

2.2 Methods Development

2.2.1. Sample specification and terminology pilot study

The purpose of this study was to consider partner perception and preference among gay men. However, to even consider gay people as a subset of society is to cast at once too wide and too narrow of a net.

It was imperative for the purpose of this study to consider sexual preference as a behaviour only. As discussed below, the greater awareness of trans and non-binary identities as well as the fact that having sex with same sex individuals does not always map onto identifying as gay, increases the complexity in delineating the sample of interest. By looking at who an individual chooses to sleep with regardless of how that ties into their own sense of self, I was able to gain a clearer understanding of the immediately apparent physical cues that were the measured variables of this study.

Language choice thus became an unexpectedly complicated part of the recruitment process. The specificity necessary to recruit the right people for the study needed to be precise and objective, yet sensitive enough to avoid the exclusion of potential good fits, and general enough to apply to more ambiguous sexualities.

Scoping interviews were conducted with 21 members of the Durham University LGBTQ+ society (Durham LGBTSOC) to assess how intersections of gender and sexual identity may affect the research project. These revealed that the self-reported sexuality of members did not necessarily correlate with expected choices in sexual partners. For example, one individual who self-identified as a trans woman and described herself as “gay” was in a sexual relationship with a cis man who also identified as “gay”. Two individuals who described themselves as “gay” both attested to recent sexual relationships with both men and women. A small cohort of 5 non-binary society members agreed to be interviewed and while 3 of them declined to specify a sexuality narrower than “pansexual”, 2 of these individuals were open to relationships with only men. One even specified further that they were interested only in relationships with men who also had an LGBTQ+ identity.

The language and labels used during these interviews showed that it was likely that Durham University students who also had LGBTQ+ identities were likely to define their sexual identities and behaviours in unpredictable ways. Therefore, I utilised these findings to tailor the adverts for participants. MSM or Men who have Sex with Men was the term used on the

study advert. It was important not to exclude men who may think of themselves as straight or otherwise not homosexual yet potentially engage in sex with other men. If potential participants queried, they were told that the pre-requisite for participation in this study was to be male (however they defined it) with some level of attraction to other men. I note that some participants in the stimulus collection phase who self-identified as heterosexual. This is despite the fact that some level of homosexual attraction was specified as a prerequisite to participation. The decision to partake in the study is evidence enough that using language like “gay men” to advertise the study may have deterred otherwise suitable candidates.

2.2.2 Sexual Configurations Theory

The pilot interviews provided valuable insight into how broad the scope of Study 1 needed to be regarding the participant pool. Consideration of this complexity led me to (plan to) use Sexual Configurations Theory (van Anders, 2015) as a tool to aid both myself and the participants by allowing the latter to more accurately plot their own experience of sexuality.

Sexual Configurations Theory (SCT) was chosen because of the fluidity with which it can be applied. A study by Wolitski et al. (2006) found that men of different races across 12 US cities engaged in sexual behaviour with other men, but did not consider themselves gay, instead identifying with the term DL or *Down Low* (Wolitski et al., 2006). Because I was attempting to draw from a participant pool of men engaging in homosexual behaviours – regardless of identity – it was possible that some participants may have had sexualities analogous to the DL sexualities described in the 2006 Wolitski et al. study.

Reflecting and accommodating such intricate sexualities is something SCT can do that a binary scale cannot. One of the strengths of the SCT diagram is that it is a graph plotted in multiple dimensions, meaning it is literally able to reflect a multifaceted experience of any given aspect of sexuality, preference, or kink and provide researchers with a detailed yet holistic approach to complicated sexualities.

Thus, all participants photographed in Study 1 were offered the opportunity to complete an SCT diagram with guidance from the experimenter, including those who took part in the pilot interviews. However, reflecting perhaps the most apparent drawback of SCT, none of the participants chose to complete a diagram.

Translating the complex plots of an SCT diagram into usable data requires an equally complex consideration of methodology and resulting analysis. Van Anders (2015) commented on the lack of standardised measures in the SCT framework (van Anders, 2015). Thus, coding the variables of an SCT diagram can lead to inconsistent results because of the extreme subjectivity inherent in the SCT approach. In an effort to correct the lack of standardised measures and expand the empirical base of research conducted using SCT, van Anders and Schudson (2017) revisited the concept and created several training videos available online as a guide for experimenters on using SCT diagrams.

The detailed formation of an SCT diagram, whilst incredibly nuanced, is extremely visually complex. Not only to layperson participants, but it is also challenging for the experimenter.

This was reflected in an analysis of SCT by Lerum and Dworkin (2016) in which they cited concerns about translating the subjectivity of such a fluid system into objective testability (Lerum and Dworkin, 2016). It is this initial impression of extreme complexity which is likely to have led participants to refuse to complete an SCT diagram. It may be that participants in Study 1 had no desire to expand upon their stated sexuality. Participants were invited to provide more information about their sexuality in a free text box, but none chose to. As such, in the main methods reported below, I focus only on the simple self-described sexual orientation and positional preferences that participants chose to report.

2.3 Stimulus Collection

2.3.1 Participants (Group A)

The study was advertised on the Durham University intranet, in the Department of Psychology, the Durham University LQBTQ+ Society, the Durham University DanceSport Society, and the wider participant pool via the weekly campus newsletter. Those who saw the study advert and were interested in participating were given an email address to contact for further information. Upon enquiry, they would be sent a copy of the participant information sheet and asked to confirm a date and time. 41 people replied to the study advert. 30 of those agreed to participate in the study. The other 11 people either declined to visit the lab, were unsuitable or unavailable for participation on further questioning, or otherwise declined to take part once more of the study was explained to them. Of the 30 people scheduled, 25 attended. Participants received £10 compensation. These 25 men will be referred to as Group A.

2.3.2. Procedure

The participant information sheet requested that men who were usually clean-shaven attend the session with a clean-shaven face. Men who usually maintained a beard were not asked to shave. Participants were also informed that they would be asked to remove any make-up. These measures taken not only to make the photos as standardised as possible but also to eliminate any bias from rating participants. For example, associating make-up with femininity and using this to inform their ratings rather than the participants' features alone. All of these laboratory sessions took place between June and July of 2023.

Participants were photographed using standardised conditions. The participant would be given a mirror, make-up wipes, and a hairband. They would be asked to remove any make-up using the wipes. They would then be asked to remove any hair in front of their face using the headbands. These were disposed of after each participant. They then sat on a chair in front of a backdrop of off-white cotton fabric. A bib/cape of the same material (washed between participants) was draped around the shoulders to minimise reflection of colour from their outfits. Coloured markers were placed on the backdrop just outside of the frame of the camera to establish a consistent eyeline; the chair height was adjusted as necessary to align with these markers. It was stressed to the participants that the goal of the session was to obtain a passport-style photograph. They were instructed to relax their face and settle on a neutral expression. Markers were placed on the floor to indicate where they should place their feet. They were told to sit with their knees and feet together. Particular attention was

paid to the vertical orientation of the head. Participants were asked to mirror the experimenter as they were guided through movements of the head and neck. It has been found that the size and shape of the jawbone and resulting contours of the jawline are secondary sexual characteristics which may factor into mate choice in theories of sexual selection. A strong jaw and/or brow are often held to be an indicator of masculine beauty, health, and fitness, as the contour of the jawline and brow bone may be obscured by light. (Mogilski and Welling, 2018). Therefore, image quality became an important consideration. A camera and lighting system able to capture close to true to life pictures were necessary to ensure that mechanisms of judgement made by Group B would not be due to any lighting or image deficiency. This is something that was not well controlled in previous studies.

A Canon 350D was placed directly in front of the participant at a distance of 1.5m. Two flashbulbs were placed either side of the camera facing the participant at angles of 45°. These were tested twice whilst the participant was seated to allow their eyes to become accustomed to the bright light and avoid squinting or blinking. The experimenter stood behind the camera and used the viewfinder to ensure correct alignment. The picture was then taken. The subject was told they could relax, and their shoulder cover garment was removed.

Figure 1. Example photograph from Group A.

Following the photograph, participants completed a short questionnaire in which they reported their sexuality on a 5-point Likert scale from 1 (Heterosexual) to 5 (Homosexual) and their positional preference on a 5-point scale from Top to Bottom (see Figure 2 for precise labels.) As noted, after reporting their orientation with the Likert scale, participants were offered the opportunity to complete a Sexual Configurations Theory diagram to fully express their orientation but all declined. Similarly the free text box below Question 1 was provided to allow them to expand upon their sexuality, but these were all left blank.

Figure 2. Questionnaire items

Question 1: How would you describe your sexuality? Please use the space below if you wish to provide any additional information.

1	2	3	4	5
Heterosexual	Mostly Heterosexual	Bisexual	Mostly Homosexual	Homosexual

Question 2: During sexual encounters with other men (specifically anal sex) which role do you prefer to adopt?

1	**2**	**3**	**4**	**5**
Top *I exclusively take the penetrative role*	**Vers Top** *I prefer to take the penetrative role but will also take on other roles*	**Versatile** *I can take either/both roles*	**Vers Bottom** *I prefer to take the penetrated role, but will also take on other roles*	**Bottom** *I exclusively take the penetrated role.*

Once participants had completed this questionnaire they were debriefed and given a copy of the debriefing document to read. Participants were given time to read the debriefing document and a mirror to fix their appearance before leaving the lab.

The full set of 21 photographs was narrowed down for presentation in the rating phase of study. To ensure a good distribution of visual age, specific photos were selected whilst others were rejected on the basis of younger age groups being visually overrepresented. 14 photographs in total were selected as the final stimuli. 7 of these were visually young men, and 7 visually middle-aged or older. Other than this, rejections were made randomly without consulting Group A's questionnaire responses, therefore specific Positional Preferences, sexualities, and facial features were not a factor in considering rejection or acceptance.

2.4 Image Rating Phase

2.4.1 Participants (Group B)

Group B comprised 100 anonymous judges recruited using Prolific. Filters were used to ensure the study was only presented to Prolific members who were male, homosexual, over the age of 18, and based in the USA (i.e. from another continent to Group A participants to prevent the chance of recongition). Apart from these filters, no demographic information was collected, and Group B remained fully anonymous with no personal data collected. Participants were paid £10.

2.4.2 Procedure

Participants followed a link to a Qualtrics survey. The photo stimuli were presented one at a time and each photograph appeared in the same order. A test image was used to familiarise participants with how to complete the survey. The results from this test image were omitted from analysis. Each participant in Group B rated all 14 photographs on positional preference, masculinity and attractiveness using 5-point Likert scales as given in Figure 3. Ratings for a given face were all completed at the same time. The average time taken to complete the survey was 336 seconds. Results from Group B were obtained within a single day in October 2023. 8 weeks were given between the end of data collection for Group A to allow them to withdraw consent before their photos were shown to Group B.

Figure 3. Question 1 as shown to Group B

1. What do you think the Positional Preference of the person in this photograph is?

1	2	3	4	5
Top *I exclusively take the penetrative role*	**Vers Top** *I prefer to take the penetrative role but will also take on other roles*	**Versatile** *I can take either/both roles*	**Vers Bottom** *I prefer to take the penetrated role, but will also take on other roles*	**Bottom** *I exclusively take the penetrated role.*

2. How would you rate this face in terms of masculinity or femininity?

1	2	3	4	5
Masculine	**Somewhat Masculine**	**Androgynous**	**Somewhat Feminine**	**Feminine**

3. How attractive do you find this face? (1 = highly, 5 = not at all)

1	2	3	4	5

2.5 Results

Data were analysed using RStudio. Data were structured in long format with each row giving a specific Group B participant's judgements of a specific Group A participant's image. Perceptions were analysed using mixed effect linear regression models with image (Group A participant ID) and judge (Group B participant ID) as independent random effects.

In the main analyses the actual self-reported Positional Preference of Group A (Pos) was used as the dependent variable, with the judgements of Group B on Positional Preference, masculinity/femininity, and attractiveness being used as the independent variables in separate models.

Group B's estimated Positional Preference did not significant predict actual positional preference (Estimate = 0.123, p = 0.295). Thus, Group B were not able to accurately predict the Positional Preference of Group A. There was also no association between attractiveness and Positional Preference (Estimate = -0.015 , p = 0.707). (In fact, general ratings of attractiveness of Group A were low). However there was a highly significant association between actual positional preference and perceived masculinity/femininity (Estimate = 0.622, p = 0.000). This indicates a strong relationship between Group A's Positional Preference and how masculine Group B perceived them to be. This could mean that perceptions of masculinity might be predictive of Positional Preference than direct perception of Positional Preference itself. Full model output tables including fit indices are given in the Appendix.

A follow up model used perceived masculinity as the dependant variable and masculinity rating as the predictor and found a highly statistically significant relationship between how masculine Group B perceived Group A to be, and how Group B rated positional preference (Estimated = 0.232, p = 0.000)

3.Study 2

3.1 Introduction

Where Study 1 concerned accurate predictions of Positional Preference of MSM by MSM, Study 2 was a series of qualitative community reflections based on the findings of Study 1. Study 1 had demonstrated that Positional Preference was judged using masculinity as a cue. The more masculinity an observer judged a face to be, the more likely they were to rate them as being a top. Facial masculinity or femininity as a secondary sexual characteristic is emphasised in certain features such as the brow, nose, eye, and jaw (Boothroyd et al., 2013; DeBruine et al., 2006; Glassenberg et al., 2010; Mogilski and Welling, 2018; Netter, 2014). However, as noted above, age may also be confounded with apparent masculinity.

Because Study 1 participants only reported their perceptions on limited and prespecified Likert scales, it was not possible to interrogate what was driving their judgements. Study 2 therefore explore which phenotypic features and cues were considered by naïve observers when making judgements on Positional Preference.

3.2 Method

3.2.1 Participants (Group C)

90 participants were recruited for qualitative interviews. These 90 people will be referred to as Group C. 21 participants were recruited from those taking part in processions for Durham Pride Festival 2024. 20 people were recruited from the LGBT staff network of the County Durham & Darlington NHS Foundation Trust. The remaining participants were sourced via the participant pool of the Durham University student body. No identifying demographics were collected from Group C because I had no a priori assumption that the sex/gender identities of those in Group C would have any effect on the accuracy of categorizing people according to their preferred sexual roles, given the null results in Study 1. Participants could disclose their sexuality if they wished but most chose not to. 15 people identified as homosexual, 5 as heterosexual.

3.2.2 Procedure

All interviews were conducted in person throughout May and June of 2024. During the interviews, the photographs of Group A were shown to Group C. Participants were shown

each photograph in turn and asked to give their own assessment of Positional Preference. They were then asked to point out any particular features that informed their judgements. Some participants offered this information without being asked whilst making their assessment of Positional Preference. Participants were then shown the photographs again, and this time told about the assessments made by Group B. They were asked if they agreed with Group B's conclusions, and again asked to point out any specific parts of the faces that they used to inform their decisions. Interviews were captured using audio transcription software. Once the transcription was checked for errors the audio recording was deleted.

3.3 Analyses and interpretation

3.3.1 Features used in judgments

Because there were many participants and relatively shallow data, summary content analysis of codes allowed quantitative summary of how participants approached the images. Study 1 demonstrated a link between facial masculinity and observed Positional Preference. I therefore used Reflexive Thematic Analysis (RTA) to examine the potential underlying motivations for such social judgements whilst acknowledging my own subjective experience of these qualitative terms. Following data familiarisation, I coded responses for mentions of specific facial features and any decision making themes

The transcribed interviews from Group C were input into a data frame using RStudio. Text was cleaned, processed, and converted to a document frame matrix which allowed me to see which words were mentioned most often in interviews. Comments fell within three different categories.

Facial expression: though participants in Group A were instructed to maintain blank facial expressions, participants from Group C commented on expressions of confidence, intensity, dominance, and submission.

Facial structure: this category contains mentions of specific facial features like jawline, eyes or eyebrows, or other commonly referenced examples of facial dimorphism.

Overall impression: though more nebulous than the prior categories, this category deals with a more gestalt impression of masculinity, attractiveness, or other perception that participants were unable to root in a specific physical part of the photograph. For example, many participants in Group C mentioned “a vibe” or something along the lines of “he just looks *x” and* were unable to expand further on these ideas when prompted.

In an ethnographic study of eye gaze and facial expression of gay men and women in Oklahoma, USA, and Illinois, USA, Barton (2015) proposed that gay people used culturally cultivated expressions centred around altering the *gay gaze*, a pattern of broken and constant eye contact. Barton captured via interviews with gay and lesbian people that facial expression, along with gesticulation of arms and legs, were accessories to what they coined the *Gaydar Gaze.* A mixture of static and non-static gestures can be used to regulate the gaze, some of which would be apparent in photographs, such as slight raises of the eyebrow and posture (Barton, 2015). All of these measured were tightly controlled in Study 1 but the

profusion of comments regarding supposedly neutral gay men's facial expressions suggests that the static expression of a man's face can be used to draw conclusions about his sexuality, regardless of other non-static cues. As Study 1 demonstrated, there is no correlation between these perceived judgements and actual preferences, but the number of participants in Group C mentioning facial expression was something I was not anticipating.

It is possible that personal biases fed into judgements. No demographic data was collected from Group C, thus personal bias cannot be interrogated. Some participants could be interpreting meaning where none is intended. This is likely a product of the proven cultural bias of masculinity being associated with topping, and femininity with bottoming (Ding and Rule, 2012; Hammack et al., 2022; Rule, 2017; Tskhay and Rule, 2013; Walker et al., 2012; Wegesin and Meyer-Bahlburg, 2000). Stereotypes dictate notions of how a top and bottom should look. Therefore, even in the absence of an overt expression indicating a bottoming preference, feminine featured will be singled out for identification.

3.3.2 Group C judgements

A regression model was used to compare the accuracy of Group C's judgements on Positional Preference. Using actual Positional Preference of Group A as the dependent variable, the model showed that Group were not able to accurately identify the Positional Preferences of Group A ($t = 0.29$, $p = 0.771$).

This suggests that facial cues alone are not enough to evidence an accurate *or reliable* perception of Positional Preference. As found in Barton (2015), other elements not apparent in static faces, such as head tilt and gesticulation, may be important accessories to the communication of sexual preference (Barton, 2015).

3.3.3 Reflections on the process

The analysis of comments as above was useful for identifying key words associating Positional Preference with sexually dimorphic facial features. However, some comments obtained during the interviews of Group C make more sense in context and are discussed here.

The term "Gaydar" was used during some of the interviews. Shelp (2003) proposed that gay people have what they called an *Adaptive Gaydar* which was found to be more accurate at gauging the sexuality of strangers than straight people (Shelp, 2003). Barton (2015) similarly found in a study of gay and lesbian people that physical presentation was the primary metric used to assess sexuality, with mannerism, dress, voice, and eye contact following (Barton,

2015). Some participants in Group C believed they were able to make assessments based on eye contact and physical presentation. Woolery (2007) proposed that gaydar was an acquired cultural skill honed more precisely by social pressures affecting gay people, thus the gaydar of straight people is less refined (Woolery, 2007)

Echoing this, a straight female member of Group C said, “I’m going to be terrible at this, I always fall for gay guys, my gaydar is so off”. Showing that she may have presumed some of the men were straight. When presented with the Group A photos, this subject took over a minute (of silence) to reach a conclusion on each of them. She eventually guessed that 2 of the men were straight, though she was not asked that question. When reminded that she was being asked about the Positional Preference of the men, she clarified that the two men she had identified as straight would be tops, later changing one to vers. A gay male respondent gave almost immediate answers to all photos. When asked if there were any features he used to arrive at this conclusion, he responded “I think you can just tell. Some of them just have that gay look”. This respondent had earlier specified his identity as gay. Though members of Group C did not often specifically vocalise their thoughts about *gaydar*, the responses here may support the idea that gay people have more *confidence* than straight people in their ability to detect the sexuality of others (Barton, 2015; Shelp, 2003; Woolery, 2007) – despite the clear evidence in the current study that this confidence is misplaced.

3.4 Discussion

The aim of Study 2 was to more deeply understand how observers make judgements when attempting to assess positional preference in gay men. As can be seen from Table 1 above, Group C mentioned the faces of Group A most often. This is perhaps unsurprising, as the bodies of Group A were obscured by a covering garment, however one of Group C commented on, for example, the hair or weight of Group A. Multiple studies have found that gay men idealise bodies with lower proportional body fat and higher proportional body muscle than straight men (Austen et al., 2020; Calzo et al., 2017; Morrison et al., 2004). It is therefore interesting to note that weight or any aspect of overall build was not mentioned by Group C in their interviews. This could suggest that gay men's comparatively prized ideals of lean, muscular bodies do not associate with stereotypes of Positional Preference.

Another visible yet apparently ignored component of Group A was their hair. Longer hair was kept off the faces of Group A by use of a hairband, and none of Group A had unnatural hair colours. Although it should be noted that that the style and colour of gay women's hair was significant in identifying their sexuality, but was less important for men (Barton, 2015).

Rule (2016) conducted a literature review wherein they found that 61 studies assessing sexuality using standardised and non-standardised photographs showed similar results to one another, suggesting a systematic stimulus confound wherein the quality of photography has no effect on findings. The fact that the current study aimed to carefully control facial positioning may have contributed to the judgements of observers. Though much research has been done to gauge the sexuality of strangers from minimal cues, more should be done into specific top/bottom configurations and identities to determine whether the quality of photographs has an impact on judgements. The current study took particular care to position those in Group A to standardise the appearance of body size, expression, lighting, and head tilt to ensure the features of Group A would be represented with similar efficacy. That is, if a participant was noted to have a large nose, we can be sure that the observing is making that judgement based on the size of the nose compared to the other participants in Group A, and not because that participant had a photo wherein their nose was tilted downwards, or lit inconsistently. Additionally, Group C's comments included some unexpected observations, such as the quality of the skin, in their assessment of Positional Preference. One member of Group C expressed that it looked as though a member of Group A moisturised regularly, and

had small pores, which they associated with femininity and therefore rated that person as a bottom. Observations like these can only be made with high quality photography, bolstering the usefulness of such careful measures.

4. General Discussion

The aim of this thesis was to investigate whether a link exists between the faces of MSM and their Positional Preference, and to test whether this link can be accurately judged by other MSM, as well as by naïve observers.

Study 1 tested perceptions of positional preference using standardised, laboratory photographs. Results showed that there was no significant correlation between judged and actual reported Positional Preference. Instead, observers judge a face as masculine or feminine, and link concepts of masculinity with penetrative roles, and femininity with receptive roles, to make a judgement. Study 2 expanded on this by seeking qualitative reflections on the results of Study 1, and comparing the results of Study 1 to judgements made by naïve observers of varying sexualities. Study 2 also gathered data in the form of qualitative comments which revealed the actual reasoning behind judgements of Positional Preference. Results showed that facial features typically associated with phenotypic sex differences were key in judgements of the Positional Preference of strangers. This reinforces the link found in Study 1 between perceived concepts of masculinity/femininity and perceived top/bottom identities whilst also possibly demonstrating a link between perceptions of age and Positional Preference.

Overall therefore, this research has shown that MSM cannot detect the Positional Preference of other MSM by judging facial photographs. This is not to say, however, that they do not make judgements of positional preference. In Study 1, judgements were based on the facial masculinity (or perhaps maturity) of the faces, while in Study 2, gay men in interviews were often confident in rapidly formed (and incorrect) judgements. Across both studies, dimorphic features were important in judgements. Study 2 also highlighted the importance of emotionality and impulsiveness in making judgements on Positional Preference. The general comments about a “vibe” or otherwise suggestion of an overall impression of a face (rather than the presence or lack of a specific feature) suggests that these Group C members were arriving at conclusions based on an emotional response to the faces of Group A. This could mean that these participants were influenced by implicit cultural stereotypes of what a top or bottom should be.

A cohort of Group C who were likely using these cultural stereotypes to inform their decisions were the cohort of 5 male participants who chose to identify their sexuality as homosexual. Exact timings of responses were not captured, but these 5 participants all made relatively fast decisions when presented with the photographs. This is the group of people who are most likely to have internalised ideas of what a top and bottom should be. A study of 462 bisexual and homosexual men in China found that gay men showed strong preferences for masculine features compared to feminised features, but further demonstrated that some men preferred masculine faces which had been feminised, whilst others preferred more strongly masculine features. These differences were correlated with the Positional Preference of the observers, with tops preferring feminised images, and bottoms preferring masculinised ones, suggesting that gay men possessed preferences for masculinity across facial features that may be affected by observer perception (Zheng and Zheng, 2016). It is possible that the gay cohort of Group C, as with group B, had clearer internalised ideas of femininity and masculinity linked to topping and bottoming identities via expression of their own preference for masculinity or femininity in other men.

The fact that many of the quick judgements made by other gay men may suggest an in-group bias where members of the same group (in this case other gay men) might feel a stronger emotional connection through a sense of familiarity. Their judgements were quicker, but not necessarily more accurate (despite the fact that this cohort stated “You can just tell” when making their judgements) potentially based on cultural understandings, shared stereotyping, or even internalised homophobia. A study of gay couples in China (n = 543) found that individuals with higher levels of internal homophobia were more likely to express a fixed Positional Preference (exclusively top or bottom rather than versatile) and linked Positional Preference to stereotypical complementary gender roles. These participants had fixed and opposite ideas of what a top and bottom should be and identified a suitable partner as an inverse of their own expressed gender role and Positional Preference. This study linked internalised homophobia with internalised ideas of heteronormative culture (Zheng and Fu, 2024). The reflexive nature of the gay cohort of Group C’s participants could be a reflection of this internalised tendency to rely on heteronormative culture in their expressions of themselves and other gay men.

An important caveat of this study (Zheng and Fu, 2024), is that it explicitly linked Positional Preference with the Dom/Sub roles of BSDM, equating topping with assuming the dominant role, and bottoming with the submissive role. This equating of terms (though incorrect for the

gay male community) was expressed throughout the interviews with Group C, although none of the self-identified gay cohort used language to suggest they were using the presumed suggested dominance or submissiveness of the face to inform their decisions. In Group C, gay people tended to rely on fast judgements suggesting an emotional factor. The cohort of Group C who identified as straight tended to take longer in their answers and here we find a link to ideas of dominance and submission linked to Positional Preference. The degree to which gay and straight people link concepts of dominance and submission to topping and bottoming is a possible avenue of investigation for a future study.

A key issue therefore, is the wide ranging gendered information that may feed into these judgements, however another important element that became evident in the study was the role of perceived age. Age perception plays a role in social stereotypes and these are evident within gay subcultures. A study of the fetishising of age in gay porn over 20 years (1992-2012) found that the rise of “Daddy” porn not only reflected an existing understanding of age in gay relationships, but also served to codify the coupling of a dominant, older, top man and a younger, submissive, bottom man into one of the most popular categories of gay pornography (which was still rising as of 2012) (Mercer, 2012). Review of the qualitative comments from Group C revealed that their perception of Group A’s ages were cited as factors influencing their decision. Group B showed a tendency to rate visibly older faces as more likely to be tops.

A study of 1577 Czech & Brazilian gay men and straight women demonstrated that both groups linked the presence of facial hair with masculinity, and that gay men showed a stronger preference for facial and body hair than gay women, and even demonstrated a preference for men with a similar level of facial hair to themselves (Valentova et al., 2017). The presence of facial hair begins in men after puberty due to an explosion of male hormones, and thus is linked with maturity. The men in Group A who had beards also tended to be visibly older. These men were also more likely to be rated as tops. The findings of Valentova et al. make it difficult to distinguish whether the bearded men of Group A were rated as tops more frequently than non-bearded men because of their facial hair or because of their age. Regardless, the presence of facial hair does seem to reflect the preference for it among gay men. Wang & Kosinski found that considering grooming preferences and facial hair improved the ability of their AI neural network to detect the faces of gay men (Wang and Kosinski, 2018). In the present study, beardedness was an often cited cue that proved to be false.

Dominant and submissive roles have been shown to be linked to topping/bottoming and masculinity/femininity in lesbian subcultures (Walker et al., 2012) but as mentioned above, these are not necessarily linked in gay male Positional Preference outside of the gay leather subculture, where labels like “dom top” and “sub bottom” prove that the concepts are not explicitly linked, as evident by the necessity of coupling terms in these labels (Childs, 2017).

Wang & Kosinski (2018), showed humans (and AI) were able to identify a gay man’s face in 64% of cases. However, they were only able to identify a gay woman’s face in 54% of cases. The AI neural network demonstrated a similar disparity (81% for men, 71% for women). It could be that gay men possess facial features that are less ‘typical’ than the faces of gay women, or it could be due to differences in the way lesbians are viewed culturally. Walker et al. found in a study of 214 lesbians that labels like butch/femme/dom/sub were important on a cultural level, but less so on a personal level, and that lesbians overall exhibited greater sexual fluidity than self-imposed labels would suggest (Walker et al., 2012). Repeating the current study with a lesbian participant pool could yield insight into whether this fluidity creates a problem for facial identification of self-labels.

As discussed earlier, interpretation of Group C’s qualitative comments showed comments fell largely into 3 categories. Facial expression, facial structure, and overall impression. All of these factors play a role, but they operate though different mechanisms. While overall impression is entirely subjective, facial expression is rooted in social interaction, and structure in objective biology. Facial expressions are a powerful communicator of emotion. As demonstrated in Study 2, emotionality was a key factor in decision-making. Comments about expression include “gentle”, “soft”, and “hard”. Group C could have used these impressions to draw upon ideas of femininity or masculinity, further reinforcing the power of stereotypical gender binaries as a marker for Positional Preference.

Conversely, facial features are static (in photos) and more objective indicators of underlying biological or personality traits. Some research has argued that from an evolutionary standpoint, humans have evolved to make quick judgements based on facial features to assess traits like health, strength, or social status (Hodges-Simeon et al., 2011; Puts et al.,

2006; Rhodes, 2006). While these judgements also extend to sexual selection, they may not accurately reflect complex social behaviours, such as Positional Preference.

A further factor for discussion is the distinction between the results here, showing poor ability to judge position in both samples, and earlier studies which seemed suggest accurate judgements may be possible. A key difference is the degree of control which was imposed upon photo stimuli in the current study. The photos of Group A were deliberately lacking in cues which could have communicated personality or behavioural traits. Other studies judging Positional Preference have generally used more varied stimuli, potentially providing other clues to participants. Though, as Rule noted, a confound exists wherein their analysis of similar studies showed photo quality did not significantly affect judgements of sexuality or Positional Preference (Rule, 2017; Tskhay and Rule, 2013; Wang and Kosinski, 2018; Zheng and Zheng, 2016).

Though the participant pool of Group A was small (n = 14) compared to the studies mentioned above, the degree of control to which stimuli were subject was an effort to provide Groups B & C with photos which reflected actual likenesses as close to real life as possible. The findings of the current study may be limited by this small sample size, as these findings are not reflected in similar studies. The difference may also arise from a combination of methodological differences, or the inherent complexity of human sexual behaviour. Compared to these studies, the results of Study 1 and Study 2 suggest that while some studies may find patterns that allow for accurate judgements under certain conditions (Ding and Rule, 2012; Rule, 2017; Tskhay and Rule, 2013; Wang and Kosinski, 2018), these judgements are not universally reliable, especially when based solely on visual information.

Minimal demographics were collected across all groups. This decision was largely informed by the pilot interviews conducted to gain an understanding of how individuals would like to see their demographics represented. As discussed above, the unexpected complexity of these labels made would have been difficult to capture. Another reason was because I wanted the study to be open to those who would not necessarily otherwise engage with a study that called for ‘gay’ participants. Therefore, collecting as little information as was necessary was a measure to help those in Group A feel more anonymous. Group B were stratified by a filter on Prolific that allowed me to present the study only to gay men based in the USA. No demographics were taken from Group C, who were approached in an ad hoc

manner at a Pride event. More rigorous testing of the results of the studies could be done had I captured the ages of participants across all groups.

Study 1 defined accuracy of judgements in terms of correlation with actual reported Positional Preferences. Study 2 was more qualitative in approach and gave participants more freedom to interpret the task they were given. Though thought was given to the different approaches of both studies as an attempt to complement one another, it is possible that the degree to which the different groups understood and interpreted the tasks had an impact on the results of both studies.

In study 2, gay participants did not perform better than straight participants. This challenges the idea that members of the same subculture (gay people) using similar rubrics to select sexual partners would have a better understanding of the nuances of positional preference. This could be due to overconfidence or reliance on stereotype rather than careful assessment. It could also simply suggest that Positional Preferences are not as easily discernible as some might assume.

It is important to note that this study looked at the visual stereotypes associated with Positional Preference within a specific cultural context. The UK (Groups A & C and the USA (Group B) share many cultural and gendered stereotypes, and this is also true within LGBTQ+ subcultures. This is made clear in previous studies which the current study sought to improve upon where studies draw participants from North America and the same labels (top, vers, bottom, dom, sub etc.) are associated with the same stereotypes (masculine or feminine) (e.g., (Ding and Rule, 2012; Rule, 2017; Tskhay and Rule, 2013; Wang and Kosinski, 2018; Hodges-Simeon et al., 2011; Puts et al., 2006). The cultural stereotype of an American effeminate gay man is likely not markedly different from the cultural stereotype of an English effeminate gay man, and it is important to note the effect of wider patriarchal culture on these conceptualisations of femininity. Any possible negative effects of this stereotyping is not something that this study considered. Expanding the sample to include gay men of different races could demonstrate whether the findings of the study can be generalised to different ethnic backgrounds and cultures. Though as noted previously, Zheng & Zheng (2006) and Zheng & Fu (2024) explored the same associations between topping/bottoming identities and maculine/feminine preferences among Chinese cohorts with

a different cultural context, and found similar associations to those found within the UK/USA Anglosphere.

In the context of increasingly complex gender norms, the interplay between sexuality and gender roles is more nuanced than ever, and will only become more so as time and research progress. As social ideas of tops and bottoms evolve, so too do the ways in which people make judgements based on visual cues. As gender norms become more fluid and less tied to binary concepts of masculine and feminine, the ways in which individuals express and understand their sexuality change in ways that don't necessarily align with old stereotypes, including those about Positional Preference. Just as cultural and societal judgements generated these labels of top/bottom, there is potential for the ever-changing understanding of these identities to rely less on outdated stereotypes, and new, more inclusive norms may generate different judgements based on different cues of Positional Preference. Further research into these demographic categories could be done using similar controls to this study. For example, this study sought to include as many individuals as possible under the umbrella of MSM. Specifying participants to include a straight, lesbian, or trans cohort could explore how these judgements differ across LGBTQ+ cultures.

In conclusion, both quantitative and qualitative methods in two studies showed that a Positional Preference for topping is linked with masculinity in observer's judgements of preference at zero-order acquaintance, whilst a preference for bottoming is linked with femininity. Regardless of these heteronormative stereotypes, however, actual Positional Preference is not accurately judged from facial photographs.

5. Appendices

5.1 Study 1 Models

	Dependent variable:		
	pos		
	(1)	(2)	(3)
PosPref	0.123		
	p = 0.295		
mas		0.622***	
		p = 0.000	
att			-0.015
			p = 0.707
Constant	2.370***	1.561***	2.699***
	p = 0.000	p = 0.000	p = 0.000
Observations	1,299	1,299	1,299
Log Likelihood	-2,011.115	-1,907.243	-2,012.679
Akaike Inf. Crit.	4,032.230	3,824.486	4,035.359
Bayesian Inf. Crit.	4,058.076	3,850.333	4,061.206
Note:		*p<0.1; **p<0.05; ***p<0.01	

	Dependent variable:		
	mas		
	(1)	(2)	(3)
PosPref	0.126		
	p = 0.221		
pos		0.232***	
		p = 0.000	
att			-0.006
			p = 0.801
Constant	1.473***	1.165***	1.796***
	p = 0.00000	p = 0.000	p = 0.000
Observations	1,300	1,299	1,300
Log Likelihood	-1,386.120	-1,287.828	-1,388.234
Akaike Inf. Crit.	2,782.241	2,585.656	2,786.468
Bayesian Inf. Crit.	2,808.091	2,611.503	2,812.319
Note:		*p<0.1; **p<0.05; ***p<0.01	

	Dependent variable:		
	att		
	(1)	(2)	(3)
PosPref	0.102		
	p = 0.280		
mas		-0.011	
		p = 0.709	
Constant	1.573***	1.845***	1.825***
	p = 0.00000	p = 0.000	p = 0.000
Observations	1,300	1,300	1,300
Log Likelihood	-1,489.597	-1,491.267	-1,488.743
Akaike Inf. Crit.	2,989.194	2,992.534	2,985.486
Bayesian Inf. Crit.	3,015.045	3,018.384	3,006.166
Note:		*p<0.1; **p<0.05; ***p<0.01	

5.2 Study 2 Model

Regression Model for Actual vs. Predicted Preference

	Dependent variable:
	PosPref
Predicted_Preference	-0.009
	(0.029)
Constant	2.740***
	(0.101)
Observations	1,260
R2	0.0001
Adjusted R2	-0.001
Residual Std. Error	1.710 (df = 1258)
F Statistic	0.084 (df = 1; 1258)
Note:	*p<0.1; **p<0.05; ***p<0.01

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