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Pornography in sex research: the construction of sex, gender, and sexual orientation

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The use of sexually explicit audio-visual material as a tool for psychological research has gained attention in the popular press as well as in field-specific publications in the past few decades. However, the conversation about such studies rarely addresses the complex nature of pornographic motion pictures, treating pornography as a simple stimulus rather than as a complicated spectatorial engagement with multiple appeals. This article examines the work of two of the most prolific researchers in the field of sexual response and sexual orientation studies, J. Michael Bailey and Meredith L. Chivers. The article explores the researchers' assumptions about pornography and sexuality through the rhetoric in their published papers and the aesthetics and content of the specific audio-visual stimuli they employ. Although the researchers employ pornography as a presumptively pre-cultural tool that produces objective scientific knowledge about sexual orientation, gender, and sex, their use of this sexually explicit audio-visual material in fact constructs the very categories it is then used to examine.

Keywords: gender; sex; sexual orientation; bisexual; trans women; J. Michael Bailey; Meredith L. Chivers; identification; pornography

Introduction

In the last few decades, a body of psychological research that uses pornography to examine gender identity and sexual orientation has caught the attention of scientific communities and popular media. Led by clinical psychologists J. Michael Bailey and Meredith L. Chivers, sex researchers seek to produce objective knowledge about identity and desire, attempting to do this through measuring participants' genital responses to sexually explicit stimuli. These stimuli can include a wide variety of media, from audio stories to erotic literature to participants' own imaginations. However, the studies that have received the most attention, resulting in hundreds of citations in academic scholarship and record-breaking readership for *The New York Times*' coverage of this research,¹ are those that employ pornographic moving pictures. Although pornography has been used as a stimulus in sexual response studies since at least 1975 (Chivers et al. 2004, 737), the majority of these studies focus on individual demographic groups (Chivers et al. 2010, 14). In contrast, Bailey and Chivers have used the same audio-visual stimuli with populations of men and women who are transgender, cisgender, heterosexual, homosexual, and/or bisexual.

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However, despite working with more diverse populations, Bailey, Chivers, and their colleagues display a curious lack of interest in the aesthetic and cultural content of the specific stimuli they employ. This is perhaps most obviously illustrated by the fact that the researchers do not cite the specific pornographic films from which the stimuli for their studies are drawn. Additionally, the researchers' discussion of the specific qualities of individual stimuli are limited to accounts of the apparent gender or sex of the performers and general descriptions of the sex acts performed. The published papers' silence regarding the aesthetic qualities of the audio-visual stimuli is accompanied by the omission of any discussion of the cultural contexts surrounding pornography. Although most studies note that participants were screened based on their sexual histories, none of the studies indicate that participants were asked about their experience with pornography. This omission, combined with the omission of specific information about the visual language in the clips employed, makes it impossible to determine to what extent participants' knowledge of the visual language of motion pictures in general, or pornography in particular, might have affected their responses to the stimuli. More than just omissions, these features point to a lack of reflection on the nature of audio-visual stimuli, impoverishing the researchers' accounts of desire and identity.

Critiques of this research often emerge from within activist communities (for example, National Gay and Lesbian Task Force 2005; Serano 2007, 2008), but these critiques concentrate on how popular stereotypes about queer and trans people appear to shape the studies, neglecting to address the researchers' assumptions about the functions and affects of pornographic moving images. This article offers an alternative perspective through close readings of the sexually explicit materials used in several prominent studies and through discussion of the published papers' references to this material. Focusing on work by Bailey and Chivers, two of the most prolific and prominent researchers in the field, I argue that the researchers' use of pornography constructs the categories they seek to understand in their search for objective data about identity and desire. The researchers use explicit audio-visual materials under the assumption that they can be neatly differentiated into specific, broad categories (male, female, heterosexual, homosexual, and bisexual). Their narrow focus on these categories produces an account of identity and desire that excludes some of the issues which are most critical within media scholars' accounts of pornography: narrative, aesthetics, power, and the other factors that produce pornography's affective charge. Pornographic reception is reduced to simple models of sex-based identification and limited to specific genital pleasures. My reading will reveal how the researchers' decision to treat pornography as a stable, known object forecloses possibilities for exploring how spectatorial engagement with pornography relates to identity and desire.

2. Objective knowledge about identity and desire

The studies I discuss here emerge from collaborations between Bailey and Chivers, although the two researchers also work independently. Bailey, a clinical psychologist at Northwestern University since 1989, is best known for his research on homosexual and bisexual men, as well as what he calls 'male femininity'. Chivers, a clinical psychologist at Queen's University since 2009, who worked at the Toronto-based Centre for Addiction and Mental Health from 2004 to 2009, focuses on women's

sexuality. Their collaborations have produced several of the most significant studies of sexual response to pornographic stimuli, with the central articles I discuss here garnering over a hundred citations each, perhaps in part because Bailey, Chivers, and their colleagues frequently build upon and cite their previous research. Most of these studies have additional co-authors, and many of these co-authors, like Chivers, were Bailey's graduate students at Northwestern University. In general, the studies I address here measure both genital and subjective responses to explicit stimuli. Participants are recruited through advertisements in alternative newspapers,² their sexual orientation is assessed through self-reports and Kinsey-scale questionnaires, their sex is determined by the sex they were assigned at birth, and their responses to explicit audio-visual stimuli are measured by vaginal photoplethysmography or penile plethysmography. Additionally, their subjective assessments of their sexual responses are recorded through simultaneous measurements or through subsequent interviews. There are non-explicit controls in addition to the explicit audio-visual material. The studies I examine here cite each other and reinforce each others' conclusions, and several reference the same audio-visual stimuli. In addition, they are connected through the controversies inspired by Bailey's research: bisexual and trans activists have protested against Bailey's work, and some of the studies I address here are among the most controversial.

What these controversies foreground are a set of questions about where sexual orientation and gender are located, as well as debates about the approach scientists should take when seeking objective knowledge about issues that are often consigned to the subjective realm. Bailey's and Chivers' research prioritizes genital responses over self-assessments, mapping physiological indications of sexual response onto sexual orientation, and at times invalidating participants' declared sexual orientation or gender identity. For example, rather than referring to trans women who are exclusively attracted to women as lesbians, the researchers describe such individuals as 'nonhomosexual MtF transsexuals', noting that this description is 'relative to birth sex' (Lawrence et al. 2005, 137).³

In so doing, the researchers' rhetoric locates truth in the automatic (the body), opposing this seemingly objective truth to the realm of consciousness (the brain), where subjectivity endangers scientific truth. The researchers' concerns about the relationship between subjectivity and truth emerge in their discussions of participants' self-assessments. In Rosenthal et al. (2012, 136), a study of bisexuality, the authors assert that 'sexual arousal has the scientific advantage that it can be measured objectively, if not perfectly', while participants' self-assessments 'may be confounded by factors such as impression management'. This emphasis on the objectivity of biology is closely tied to the researchers' interest in evolutionary psychology, a framework that positions genital responses as the products of evolutionary processes which seem biological or automatic rather than social or cultural. In their study of female sexual response, Chivers and her colleagues speculate that contemporary heterosexual cis women exhibit significant genital responses to a wide variety of pornographic stimuli because such 'flexibility' in vaginal lubrication arose among 'our female ancestors' as an evolutionary adaptation to prevent injury during rape (Chivers, Seto, and Blanchard 2007, 1118). The pornographic images themselves disappear in this account, along with the fact that they are specific to a modern, technological era and are produced by – as well as producers of – contemporary culture. I argue that the researchers' concerns about the dangers of subjectivity, and their interest in

separating culture and consciousness from bodies and instincts, contribute to their reluctance to closely examine their pornographic research tools, leaving them unable to grapple with the role that culture plays in their work.

3. 'Male' and 'female', categorized through porn

A significant cultural construct that shapes Bailey's and Chivers' research is the division of human beings into two binary sexes. Georgia Warnke writes that methods of categorizing people based on binary sex categories 'take certain aspects of the body ... to be indicative of who the person is ... exclud[ing] other physical and biological features of bodies, such as knobby knees and muscle types' (2009, 35). Warnke's suggestion that aspects of bodies besides genitals may be as (or more) important in categorizing bodies is particularly compelling when considering a visual medium like pornography. Performers' bodies are displayed in action in time and space, revealing a variety of specific details about these bodies, including details about their genitals that go beyond the simple distinction between vulvas and penises (for example, size, skin tone, and presence or absence of hair). However, Bailey's and Chivers' categorizations of audio-visual stimuli, and of the participants responding to these stimuli, are shaped by the premise that the only significant distinction between these bodies is the distinction between a vulva (coded female) and a penis (coded male).

The researchers form conclusions about sexual orientation based on the responses of participants coded as male and female to stimuli coded as male and female. Bailey's and Chivers' concordance studies focus on the relationship between sexed participants, sexed stimuli, and sexual orientation, looking specifically at whether participants' subjective and genital responses are consistent with each other (displaying concordance) or contradictory (displaying non-concordance). One concordance study (Chivers et al. 2004) established a library of 'male' and 'female' audio-visual stimuli that subsequent concordance studies also employed (for example, Rieger, Chivers, and Bailey 2005; Chivers, Seto, and Blanchard 2007). The sexually explicit stimuli from Chivers et al. (2004) included six 2-minute video clips, selected from commercially available pornography. Although this information was not included in the published paper, the female–female clips come from Nan Kinney's and Debi Sundahl's lesbian porn film *Hungry Hearts* (1989), the male–male clips from a gay male porn film titled *Chapters* (n.d.), and the female–male clips from Candida Royalle's *Eyes of Desire* (1998) (Chivers, personal communication, 3 July 2014).

Concordance studies investigate whether participants' self-assessments match their genital responses to male and female stimuli, pitting scientific knowledge against self-knowledge. The studies' conclusions focus on whether the sexual orientation indicated by a participant's genital response matches their professed sexual orientation. This is not as simple as it sounds. Non-concordance in bisexual men (i.e. genital responses that match those of heterosexual or homosexual men) is interpreted as casting into question the existence of bisexual identities among cis men (Rieger, Chivers, and Bailey 2005, 582; Rosenthal et al. 2012, 136). In contrast, non-concordance among cis women (i.e. strong genital responses to both male and female stimuli, the 'bisexual' response that was expected from bisexual men) is not interpreted as calling into question the participants' professed monosexual orientations (Chivers, Seto, and Blanchard 2007, 1119). What produces these seemingly contradictory interpretations of the researchers' data? The answer may lie in the result that these contradictory

interpretations achieve: in both cases, bisexuality is marginalized or dismissed, although for very different reasons depending upon whether the participants are male or female. This mirrors the cultural scripts that deny the validity of bisexual identities for both men and women that bisexual activists have documented and challenged (for example, Eisner 2013). Despite the different interpretations of the data, the methods are the same, with non-concordance indicated by a disjunction between the participants' subjective responses, genital responses, and expressed identities. The researchers' conclusions regarding concordance or non-concordance depend on how they code participants and stimuli as male and female, and this in turn shapes and is shaped by their understanding of sexual orientation.

The researchers' conclusions about what they call 'category specificity' also depend upon their understanding of sex, gender, and sexual orientation. Participants exhibit category specificity when their sexual responses are exclusive to male or female stimuli. According to the researchers, cis men exhibit category specificity, with heterosexual men exhibiting stronger genital responses to female stimuli while homosexual men exhibit stronger genital responses to male stimuli (Chivers et al. 2004, 736). Trans women (Chivers et al. 2004, 738), and, to a lesser extent, cis women who identify as lesbian (Chivers, Seto, and Blanchard 2007, 1116) also exhibit category specificity. However, cis women who identify as heterosexual do not display category specificity, exhibiting significant genital responses to male and female stimuli (Chivers et al. 2004, 738). As in concordance studies, coding stimuli as 'male' and 'female' is critical to establishing the presence or absence of category specificity.

Amid all of these specific variables, which are translated into datasets, graphs, and other analytical tools, the researchers do not address the diversity of pornography and of individual taste. Indeed, they use pornography as a research tool based on the assumption that the only significant variables among the different clips they employ are sex, gender, and sexual acts. A meta-analysis Chivers co-authored indicates that some sexual response studies have examined whether 'female-centered' stimuli provoke different responses than conventional, mainstream pornography (Chivers et al. 2010, 12, 15 and 42). However, the researchers' criteria for determining that a clip is female-centric include factors that are subjective and culturally specific, such as whether the sex takes place within a long-term, committed relationship (Chivers et al. 2010, 12). As Barbara DeGenevieve points out, different eras have their own definitions of feminist or female-centred porn (2014, 193). Categorizing media is inexact and subjective, creating problems for researchers using media to examine people as members of general categories rather than as individual cases. However, broad, socially constructed categories are necessary for Bailey's and Chivers' research given the questions they seek to answer. Questions such as are self-identified bisexual men in fact bisexual? (Rieger, Chivers, and Bailey 2005; Rosenthal et al. 2011, 2012) and do trans women exhibit male or female responses to pornographic stimuli? (Lawrence et al. 2005) are premised upon understanding humans as members of a few, limited categories.

4. The construction of bisexuality through audio-visual stimuli

Coding participants and stimuli as male or female is critical given the researchers' interest in examining the genital responses of sexed participants to sexed stimuli. However, in Bailey's studies of bisexual men, the stimuli are not just coded by

gender but are also coded by sexual orientation. The first study I address, 'Sexual Arousal Patterns of Bisexual Men' (Rieger, Chivers, and Bailey 2005), uses the same clips as those from Chivers et al. (2004). The six clips portray men and women having oral and penetrative sex in partnered pairs (Chivers et al. 2004, 737). There are several potential problems with this approach. For one, in Rieger, Chivers, and Bailey 2005 the researchers' conclusions about category specificity assume that individual performers each represent an entire group to which a participant is attracted. In other words, to be turned on by one body with a vulva and breasts means that the participant is turned on by 'women' in general. Given that all the clips depict partnered scenes, the researchers are also determining individual sexual orientation by assessing participants' genital responses to images of couples. Although elsewhere the researchers note that depictions of partnered homosexual sex could distort the data due to stigma against homosexuality (Chivers et al. 2004, 742–743), they do not otherwise address how partnered sex scenes produce potential complications when used to measure individual sexual orientation. In what follows, I will discuss how these problems manifest themselves in the researchers' labelling of stimuli as male, female, homosexual, heterosexual, and bisexual.

Bailey's studies of bisexuality in men confirm cultural stereotypes about bisexual men, stereotypes encapsulated in *The New York Times*' headline about these studies which asks 'Straight, Gay or Lying?' (Carey 2005). Buried beneath the headline and its confirmation of popular stereotypes are the details of the role pornographic stimuli play in the study itself, a role that is shaped by the cultural stereotypes the study then reinforces. In the original paper, the researchers describe a history of doubt among psychologists about the existence of bisexual arousal patterns among men (Rieger, Chivers, and Bailey 2005, 579), doubts which the study then confirms through examining whether self-identified bisexual men exhibit similar genital responses to male and female stimuli. The researchers write that, although the participants self-report similar degrees of arousal to male and female stimuli, the majority exhibit a stronger genital response to male stimuli (2005, 582). However, concluding that the study participants are actually homosexual or heterosexual rather than bisexual depends upon the precise nature of the 'male' and 'female' stimuli against which their genital responses were tested.

In describing the audio-visual stimuli, the researchers note that 'two of the sexual films depicted two men having sex with each other, and two of the films depicted two women having sex with each other', omitting to mention the two clips depicting male–female couples (Rieger, Chivers, and Bailey 2005, 580). There is a reason for this. The clips of a man and a woman having sex cannot produce the category specific response the researchers seek to measure; given that these clips include both a man and a woman, a participant's genital response cannot be used to compare his response to men with his response to women. The researchers' assumption that bisexual men should exhibit similar genital responses to male and female stimuli is tested against stimuli coded as 'male' and 'female', although the stimuli could also be coded as 'gay' and 'lesbian' stimuli.

The role of audio-visual stimuli in producing the conclusion that bisexual men are either gay, straight, or lying becomes even clearer in a later study which produced contradictory results. This later collaboration between Bailey and several colleagues added a 'bisexual stimulus' to the homosexual stimuli from other studies of bisexual men. The bisexual stimulus, a multi-partner scene of male–male–female sex, produced

greater degrees of genital arousal among the self-identified bisexual participants than the other stimuli, allowing the researchers to conclude that bisexual arousal patterns may exist among self-identified bisexual men (Rosenthal et al. 2012, 144). The fact that the bisexual stimulus from Rosenthal et al. is a multi-partner scene rather than a female–male scene reveals again how the researchers’ use of pornography constructs the categories they examine. These studies of bisexual men treat videos of male–female sexual interactions as, essentially, heterosexual stimuli rather than bisexual stimuli, although such videos could also be categorized as bisexual stimuli. Participants could be responding to men, to women, or to both simultaneously. Despite the researchers’ determination to protect their work from the distortions of subjectivity, the decisions they make in categorizing the audio-visual stimuli bring subjectivity – in this case, the researchers’ subjectivity – to the fore.

5. *Eyes of Desire* and heterosexuality

A close analysis of the heterosexual stimuli used in several of these studies demonstrates how the researchers’ narrow focus on sex, gender, sex acts, and sexual orientation limits their ability to address all of the factors that may be operating when a study participant watches and responds to the pornographic stimuli. As noted above, the heterosexual stimuli used in several of the studies were drawn from Candida Royalle’s (1998) film *Eyes of Desire*. Given that Royalle was one of the first women to successfully produce mainstream pornography, this is a particularly provocative choice for something that is intended to operate simply as a ‘heterosexual stimulus’. In addition, the film was six years old when it was used in Chivers et al. (2004), which raises a variety of questions about how participants’ responses might have been affected by the dated aspects of the film (including the performers’ hair, clothing, and make-up, the sets, and the camera and lighting technology) as well as whether participants may have seen *Eyes of Desire* prior to participating in these studies.⁴ The performers all appear to be white and all seem to be in their twenties or early thirties. The researchers do not address any of these issues, and, as I describe above, they do not indicate within the published papers the titles, producers, or production dates of the films from which the sexually explicit stimuli are drawn.

Although the two scenes from *Eyes of Desire* offer only a partial picture of the audio-visual stimuli from the Chivers et al. (2004) library, my analysis demonstrates the challenges of focusing exclusively on the categories of sex, gender, and sexual orientation in complex narrative and aesthetic productions. In the case of *Eyes of Desire*, the researchers excerpted two sex scenes from the 93-minute film, using 2-minute clips in one study (Chivers et al. 2004, 737) and 90-second clips in another (Chivers, Seto, and Blanchard 2007, 1111). Chivers has stated in a personal communication dated 6 August 2014 that the clips were simply cut to length and not edited in any other way. Although the researchers note that they included both oral and penetrative sex scenes from each of the sex/sexual orientation categories (male–male, female–female, and female–male) to ensure they evaluated participants’ responses to performers’ apparent sex rather than to preferred sexual acts (Chivers et al. 2004, 737), the published papers treat the two heterosexual stimuli as a unit. However, as will be demonstrated, the scenes feature a variety of distinctions. Finally, the brief excerpts that were used in several studies do not give the viewer much context for the sexual acts they depict, but I would like to discuss this context briefly,

particularly since the visuals in the scenes in question refer to the film's overall theme of voyeurism.

Eyes of Desire follows Lisa, a young, sexually frustrated photographer, as she explores her sexuality through voyeurism and exhibitionism. Her friend Amy invites her to visit for a few days, and encourages Lisa to use a high-powered telescope to spy on the neighbours' sex lives. In the end, Lisa learns that there is another telescope trained on Amy's house; the voyeur is, herself, being watched. James K. Beggan and Scott T. Allison (2003, 306) argue that the reflexivity in Royalle's films is connected to a feminist exploration of the mechanics of looking in pornography, with Royalle's films functioning as, among other things, a commentary on conventional pornography. Beggan and Allison write 'the films of Candida Royalle create a space for the observing female to inhabit' (2003, 307) and argue that *Eyes of Desire* 'educates viewers to approach and appreciate the voyeuristic act' (2003, 310). In a sense, Amy becomes Royalle's proxy in this endeavour, encouraging Lisa's voyeuristic activities in the context of encouraging her to take control of her sexuality. In the opening scene, Amy invites her friend to watch Amy seduce a man. When Lisa accepts the invitation, she watches Amy receive oral sex in a scene in which Amy is in charge of the activity, filling the frame with her expressions of desire and pleasure.

The female-male oral sex stimulus is drawn from this sexual encounter. It is the only oral sex scene in the film featuring a female orgasm; the other instances of oral sex all take place within the context of foreplay prior to penetration. Moreover, Amy is conscious of her performance for her friend watching through the telescope, and the scene features many shots from the voyeur's point of view. These shots are distinct in colour temperature and video quality, feature shallow depth of field, and include a circular mask over the frame. In the overall scene of the tryst, images of Lisa and her telescope are intercut with the images of Amy and her partner, although none of these cutaways appear during the 3.5 minutes of the oral sex subsequence. While Amy looks directly into the lens several times, for study participants this would have lacked some of the connotations of exhibitionism it has in the original scene. However, the limitations of the researchers' interpretive framework is illustrated by their decision to code this particular scene, with its confident, dominant female performer who gazes directly into the lens (and in context is performing for a distant female voyeur), as simply 'heterosexual oral sex'. The possibility that this scene can be read or experienced as an example of a female gaze, the contention central to Beggan's and Allison's argument about Royalle's work, produces a spectatorial position which is strikingly distinct from the position that spectators often are encouraged to occupy when watching 'heterosexual porn'.

Voyeurism is noticeably foregrounded in the penetration stimulus used in the studies. This clip was excerpted from a sexual encounter between Lisa and her estranged boyfriend, the man whose disinterest in her pleasure prompted her to explore her sexuality through voyeurism. Their tryst is witnessed by the other voyeur, and the scene intercuts shots from within the room with shots through a telescope. The researchers may have selected only the images from the camera within the room, but the uncut original scene is structured around the tension between the wide shots from within the room and the uneasy intimacy created by the close-ups of Lisa through the distant telescope. This penetration scene is the film's most heteronormative sex scene, featuring a dominant male performer in charge of the action. Given that the film features four heterosexual penetration scenes, the researchers had a variety of

options when choosing a clip to represent heterosexual penetrative sex (the other penetration scenes in *Eyes of Desire* are less heteronormative, depicting the woman showing initiative and featuring a variety of positions and sex acts). The scene they chose includes the most conservative sexual positions, and the male performer grimaces, murmuring references to his genitalia, while Lisa is silent. In contrast, in a different penetration scene, Amy is in charge, she vocalizes her desire and pleasure, and she stimulates her clitoris during penetration.

My point is not that this latter scene would have been a 'better' or 'more heterosexual' stimulus, but rather that the selection of a scene featuring a variety of specific signifiers constructs heterosexuality differently from what the researchers seek to measure. Although they define heterosexuality as an individual's sexual arousal to the 'opposite' sex, heterosexuality as it is constructed by these two sex scenes from *Eyes of Desire* – and the arousal that might result from them – is a much more specific and complicated issue.

To be sure, the broad generalization that results from coding a complex audio-visual performance drawn from a narrative film as a 'heterosexual stimulus' is necessary given the study design. However, this choice does have consequences. It assumes that certain categories (the apparent sex and gender of the performers) have more significance for participants than other categories (such as power relations, body types, race, age,⁵ camera angles, framing, agency, gestures, speech acts). In the oral sex scene, Amy looks directly at the camera; even without the narrative framing contextualizing this look as exhibitionism, a woman 'looking back' is a highly charged gesture. In the penetration scene, Lisa does not look at the camera, and the telescope point-of-view shots emphasize that she is a sexual object rather than a sexual agent. The oral sex scene features tighter, level framings, enhancing the sense that Amy's expressions of pleasure fill the frame. The penetration scene intercuts wider, high-angle shots of Lisa with tighter, low-angle shots of her partner's face, creating an unequal power dynamic between the performers. Heterosexuality, as constructed by these two clips, involves many other factors beyond the apparent sex and gender of the performers. Although the researchers interpret participants' responses to these heterosexual stimuli as indications of the participants' sexual orientation, it is not clear that the participants are necessarily responding exclusively to the apparent gender and sex of the performers. Although participants might also be responding to the clips' representations of voyeurism, power relations, and other details, this possibility is never addressed within the sexual response studies that employ audio-visual material from *Eyes of Desire*.

6. The construction of sex through models of identification

I have discussed how concordance studies evaluate category specificity to determine whether participants' professed sexual orientations match the sexual orientations indicated by their genital responses to explicit stimuli, arguing that the categorization of the stimuli as 'male' and 'female' constructs these categories and thus affects the researchers' results. In addition, there are other, more subtle ways in which participants themselves are constructed as male and female by the researchers, beyond obvious categorizations based on sex assigned at birth. I will discuss two studies in which the researchers' models for understanding identification with the moving image contribute to the construction of the participants as male and female. These models of

identification, and their relationship to sexual difference, mirror the (now contested) models of identification feminist film scholars introduced in the 1970s and 1980s. These models did not allow for fluidity in spectators' identification with on-screen performers, and differentiated between spectators' mode of identification based on sex.

Identification becomes an important interpretive framework in a study by Bailey, Chivers, and several others (Lawrence et al. 2005), which explores additional results from Chivers et al. (2004), focusing on the data for trans women participants. Lawrence et al. (2005) expand upon the researchers' observation that trans women exhibited non-concordance between their subjective assessments and their genital responses to the audio-visual stimuli. In particular, some participants reported little interest in male-male stimuli, despite displaying a significant genital response. The authors hypothesize that this is because trans women identify with neither of the male performers. They write that 'for a majority of the participants in the study, identification with at least one of the actors in an erotic video stimulus may have been a prerequisite for reporting a strong subjective response to that stimulus' (2005, 143). In this study, with participants whose sexual orientation is described as relative to birth sex, a sex the researchers understand as male, identification becomes a critical tool for understanding non-concordance.

Another study that references identification takes a different approach. In Chivers, Seto, and Blanchard (2007), following earlier work by Chivers and Bailey (2005), the researchers expanded the pool of audio-visual stimuli to include a non-human stimulus: a clip of bonobos mating. They also included erotic but less explicit material, including men and women exercising nude (Newman 2008). In this study, self-identified heterosexual women exhibited non-concordance between their self-assessments and genital responses. Their genital responses were significant whether or not the stimuli matched their stated sexual orientation or offered them a human female performer with whom they could identify (Chivers, Seto, and Blanchard 2007, 1116). In this case, with participants who are heterosexual cis women, their arousal patterns are not explained through the logic of identification. In fact, the researchers note that the logic of gender-specific identification, the very logic employed to explain non-concordance in Lawrence et al. (2005), cannot fully explain the non-concordance of self-identified heterosexual women exhibiting strong subjective and genital arousal to male-male stimuli (Chivers, Seto, and Blanchard 2007, 1117).

There's an obvious tension here. One of these studies assumes that the participants identify with a subject position within the video clip, while the other assumes that the participants do not. They also differ in the gender/sex of the participants, at least as the researchers understand these categories. Although the researchers do not describe the trans women participants in Lawrence et al. (2005) as men, and although they assume that these trans women would identify with (cis) female performers, I argue that their language suggests that the researchers regard trans women as fundamentally male. They describe the participants' arousal patterns as 'male-typical'; and describe the participants' sexual orientation as homosexual or non-homosexual in relation to the sex they were assigned at birth – all of which indicates an understanding of the participants as 'biologically' male. Trans women seeking gender confirmation surgery are called 'male applicants' (Lawrence et al. 2005, 140). In addition, the researchers distinguish between trans women and cis women by calling cis women 'natal women', while they distinguish between trans women and cis men by calling cis men 'nontranssexual males', suggesting that, within the researchers' framework, trans women are

'transsexual males' (Lawrence et al. 2005, 140 and 142–143). Finally, in Chivers et al. (2004, 742), the researchers cite Bailey's (2003) controversial *The Man who Would be Queen* when describing trans women as 'the most feminine of males'.

If the researchers indeed regard trans women as essentially male and cis women as essentially female, the distinction they make between those who identify with a stable subject position and those whose identification is either absent or multiple is based on sex.⁶ If so, the researchers' arguments about the function of identification mirror the structure of identification that feminist film scholars, led by Laura Mulvey, proposed in the 1970s and 1980s. This theoretical framework has since been criticized and revised, including by Mulvey (1989) herself, and recent theories of spectatorial identification in cinema suggest that identification has the possibility to be more fluid than feminist film scholars initially proposed. Originally, Mulvey ([1975] 2009) argued that visual pleasure for spectators of Hollywood cinema arises only through identification with the gaze of the camera and the male protagonist, a tripartite gaze that objectifies the female character(s). Mary Anne Doane explored the female spectator's position in this system, describing her as 'the site of an oscillation between a feminine position and a masculine position' (1982, 80). Doane suggested two possible strategies for female spectators: either a masochistic identification with the objectifying gaze or the performance of masquerade, an over-investment in femininity which serves a distancing function. Doane described female spectatorship as an intimacy with the image that prevents the differentiation necessary for stable, unitary meaning. When combined with terms such as 'oscillation' this suggests that female spectators exhibit a proliferating, non-specific, multiple identification with the image. This multiple identification contrasts with the male spectator's ability to identify with a stable, unitary position. In their use of a similar logic of identification to explain non-concordance in Lawrence et al. (2005), and in their dismissal of this logic in Chivers, Seto, and Blanchard (2007), the researchers employ a model of identification that is sexed in socially constructed ways. Activity, stability, and directness in identification are coded as 'male' while hesitancy, confusion, and multiplicity in identification are coded as 'female'. By mapping these models of identification onto two distinct populations, the researchers produce sexed subjects who are thus categorized as 'male' and 'female'.⁷

Intuitively, it seems obvious that those assigned to two different groups will relate to the world with in-group similarities and out-group differences, making different modes of identification between those categorized as 'male' and 'female' appear self-evidently natural. However, as Judith Butler (2006, 148–150) demonstrates, the division of humanity into two binary sexes is as socially constructed as the gendered characteristics that are matched with the two sex categories. In both the sexual response studies and the original feminist theories of identification, gendered cultural constructs are apparent in the assumption that males' identification will be stable and active, while females' identification will be fluid, passive, and mysterious. These assumptions are not proven or disproven scientifically, and they only arise within the sexual response studies in the discussion of participants' subjective assessments; in a sense, the researchers interpret the participants' subjective assessments based upon the researchers' own subjective assumptions about the relationship between sex and motion picture viewing. Categorizing participants as male and female based on the sex they were assigned at birth, and reinforcing this distinction through sex-based models of identification, prevents the researchers from exploring other possible approaches to their data.

7. Conclusion

I have discussed how Bailey, Chivers, and their colleagues use pornographic motion pictures in sex research under the assumption that the apparent sex and gender of the performers, as well as the sexual acts performed, are the only variables worth considering. This approach leaves them unable to address the complexity of pornographic motion pictures, including the aesthetics of the clips they employ and the cultural context surrounding sexually explicit audio-visual material in contemporary society. The studies I have discussed evaluate sexual response through physiological responses to stimuli coded as male and female, employing specific models of heterosexuality, homosexuality, and bisexuality in determining participants' sexual orientations.

The researchers' questions require this narrow focus. Since the researchers are interested in the differences between men and women, even a study that takes other variables into account – such as Chivers' study of responses to sadomasochistic pornography – ultimately focuses on the differences between the genital responses of men and women to this subset of pornography (Chivers et al. 2014). The researchers' studies are designed to explore the distinction between genital responses and subjective responses, and thus their research questions assume a brain/body divide that must be investigated. In contrast, neuroscientists who research sexual responses to pornography have observed concordance between participants' physiological responses and their subjective responses, allowing these researchers to consider the role that experience, memory, and other subjective factors play in human sexual response (for example, Borg, de Jong, and Georgiadis 2014). Sexologist Lisa Diamond has responded to Bailey's conclusions about women's sexuality by arguing that research methods must take into account change over time to capture the complexity of women's sexuality (Diamond 2012, 74). Diamond is interested in the 'nature and phenomenology of desire more generally' in contrast to what she sees as a preponderance of interest in 'the *targets* of individual's sexual desires' in research such as Bailey's (Diamond 2012, 77; original emphasis). Questions about the phenomenology of desire require research methods that are much more qualitative than Bailey's and Chivers' quantitative approach. Alan McKee argues that qualitative research is a productive and uncharted territory for social science research into human sexual response to pornography. However, when McKee suggests that social scientists study subjects who 'choose what they want to watch; watch only as much as they want to watch; where they want to watch it; with the people they want to watch it with' (2009, 644), he is referring to a study of participants' relationships to pornography, rather than a study that uses pornography as a research tool to answer a set of questions about gender, sex, and sexual orientation. For Bailey and Chivers, pornography is not the subject of their research, but a tool they use to answer specific questions about human sexual response.

Thus, in describing the pornographic stimuli, the researchers focus exclusively on the performers' apparent gender and sex, the sexual acts performed, and the sexual orientations depicted. They ignore the aesthetic qualities of the pornographic stimuli and, because of the lack of citations within the papers, it is difficult to track down the films from which these stimuli are drawn. Insights from gender studies about the diversity of gender, sex, and sexual orientation and insights from media studies about the complexity of moving image spectatorship could point to new directions for research on human sexual response using pornographic stimuli. However,

such research would almost certainly be more qualitative than the research Bailey and Chivers have carried out to date. By suppressing the content and context of the stimuli, and treating only certain aspects of the pornographic clips as worthy of discussion within scientific literature, the papers suggest that those aspects they do discuss are categorizations which have a truth value outside culture and history. Yet even these elements of the videos – sex, gender, sex acts, and sexual orientation – cannot be examined apart from their social context. Cultural knowledge informs the designations of man/male, woman/female, heterosexual, homosexual, and bisexual that the researchers apply to the stimuli against which participants' sexual orientations, gender, and sex are tested. The researchers' use of pornography constructs these categories, and their conclusions are shaped by the audio-visual material they select and, particularly, by their assumption that pornography is a stable object with predictable functions rather than a multifaceted engagement between the spectator and the screen.

Notes

1. Popular media attention to Bailey's and Chivers' work includes numerous *New York Times* articles about Bailey's work, while a 2009 *New York Times Magazine* profile of Chivers' pornography-based research was, at the time of its publication, the most-read article in the magazine's history (Paikin 2009).
2. Often, the newspapers in which advertisements are placed are unnamed; for example, in Chivers et al. (2014, 932) the authors write: 'Participants were ... recruited using online advertisements on the websites of two local weeklies and on Craigslist.' However, in Chivers et al. (2004, 737), the authors note that the 'alternative urban newspaper' in which they advertised for participants was the *Chicago Reader*.
3. This approach to sex, gender, and sexual orientation is in tension with recent research in neuroscience which suggests that gender and sex are biologically indicated in the brain (Serano 2007).
4. In comparing the participants' responses to the female–male stimuli with their responses to the female–female stimuli, the fact that the female–female stimuli were drawn from a film that was a further nine years older than *Eyes of Desire* also creates potential problems.
5. There is very little discussion within Chivers' and Bailey's work of the role race and/or age might play in human sexual response. Although Chivers' frequent collaborators Michael C. Seto and Ray Blanchard have examined the role that age plays in sexual response to pornography, this is entirely in the context of forensic applications of such research to determining whether child pornography use may be diagnostic of paedophilia (Seto, Cantor, and Blanchard 2006).
6. Additionally, in Rosenthal et al. (2012, 145), the researchers assume that bisexual men engage with the multi-partner scene through a stable and unitary identification with one of the male performers.
7. What is missing in both these models – the film scholars' model and the model the researchers employ – is the position of the trans spectator, the very people who comprise the study population of Lawrence et al. (2005). Building upon Mulvey's work, J. Jack Halberstam has identified the emergence of a 'transgender gaze' in several contemporary films, a gaze that represents a 'nonfetishistic mode of seeing the transgender body' (2013, 127). Unlike the unitary male gaze Mulvey identified in classical Hollywood cinema, this transgender gaze offers a more open and fluid perspective on the meanings of male, female, man, woman, masculine, and feminine, a perspective that is based on an alignment between spectators (trans and cis) and the transgender gaze (Halberstam 2013, 128). Finally, it is significant that none of the studies of trans people state that they used pornography featuring trans performers.

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