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From Pair Bonding to Polyamory:
A Feminist Critique of Naturalizing Discourses on Monogamy and Non-Monogamy

By
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Doctor of Philosophy

Women's Studies

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By

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B.A., Fordham University, 2001

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An abstract of
a dissertation submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
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Abstract

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By Angela Willey

This dissertation is a feminist critique of naturalizing discourses on monogamy and non-monogamy. Feminists have critiqued monogamy as compulsory and sought to challenge the naturalness of coupled forms of social belonging. This dissertation's critique moves in two directions. First, drawing on the epistemological interventions of feminist science studies, it challenges compulsory monogamy by offering an analysis of its naturalization in scientific discourses and practices. Second, the dissertation critiques a similarly naturalizing rhetoric at work in feminist polyamory discourses that seek to challenge compulsory monogamy. The dissertation argues that universalizing rhetoric in feminist polyamory discourse reflects and inverts the discourse of science by naturalizing non-monogamy. In both scientific and feminist contexts, that which is deemed natural becomes a privileged site for determining values of right and wrong. The dissertation explores how those values are linked to both contemporary and historical scientific epistemologies and practices. A central feature of the dissertation is an ethnographic analysis of genetic research on pair bonding in a contemporary laboratory. Drawing on this fieldwork, the dissertation shows how both modern genetics and feminist polyamory discourse are grounded in 19th century biosciences. These contemporary rearticulations of 19th century phrenological and evolutionary claims in particular also redeploy an analogizing logic of racialized sexual differences. Thus sexualization itself becomes the basis upon which the naturalization of monogamy as pair bonding and non-monogamy as polyamory depend. Critiquing the logic of that sexualization, the dissertation offers an alternative to sexualized naturalization through a close reading of friendship as an alternative to sexuality in a popular contemporary queer feminist comic strip. As a fiction that both describes and transforms the sexualized reality in which we live, the comic strip becomes a model for new ways of living beyond monogamy's failures. Ultimately, the dissertation paves the way for rethinking not only monogamy's compulsory status, but also pervasive assumptions about nature itself. So doing, the dissertation provides an important resource for imagining new forms of social belonging.

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Introduction

Monogamy is at once an invisible and highly contested norm. Its invisibility is marked by views on heterosexuality and the naturalness of coupled forms of social belonging. Historically, feminists have had a vexed relationship with monogamy, from debates over polygamy and patriarchal marriage in feminist movements of the late 19th century (Iversen 1997; Willey 2006) to contemporary debates over monogamy, polygamy, and polyamory.[1] At the same time, scientific discourse has had much to say about monogamy. That discourse shapes naturalizing conceptions of monogamy with which feminists are concerned and at the same time influences feminist discourses in complex ways. This dissertation situates itself within that intersection of feminist and scientific discourses around the question of monogamy.

Although feminist and scientific discourses on monogamy have long histories, this dissertation focuses on the contemporary moment, with brief forays into the 19th century, to explain aspects of monogamy's modern meanings. Contemporary feminist writings on monogamy have sought to extend earlier feminist challenges to naturalizing assumptions about sexuality, bonding, and forms of belonging. Adrienne Rich's critique of compulsory heterosexuality in her seminal essay "Compulsory Heterosexuality and Lesbian Existence" (1980), is a paradigmatic example of those early challenges. In her essay Rich argued that rather than being natural or innate, heterosexuality is naturalized by making alternatives to it invisible. Over two decades later, contemporary feminists who are critical of monogamy have drawn on Rich's strategy to make both heterosexuality and monogamy visible as culturally entrenched norms. Elizabeth Emens' groundbreaking essay, "Monogamy's Law: Compulsory Monogamy and Polyamorous

Existence," (2004) is a particularly compelling example of this later generation of feminist work. In "Monogamy's Law," Emens argues that the "twoness" requirement of marriage is as deeply embedded in US culture and law as the "different sex requirement" (281). Emens breaks monogamy down into two sets of ideals that she calls "super monogamy," the ideal of having one partner for life, and "simple monogamy," the ideal of sexual exclusivity within a given relationship. She further highlights the trap of these ideals: despite their widespread failure, evidenced by high rates of divorce and adultery respectively, most people aspire to both lifelong and sexually exclusive relationships (297-300).

Rich articulated heterosexuality as a problem for feminists by arguing that it perpetuates the social and economic privilege of men and separates women from one another. Feminist critics of monogamy have similarly put monogamy on the map for feminism. These thinkers have passionately articulated the asymmetrical expectations and costs of monogamy for women and men (Murray 1995, 296-297; Robinson 1997, 145; Stelboum 1999, 43) and critiqued constructions of women as property (Fleming and Washburne 1977, 301; Tibbetts 2001, 1-2). They have explained how over-investment in one person can make it difficult to leave an abusive or unfulfilling relationship (Fleming and Washburne 1977, 270; Rust 1996, 132; Rosa 1994, 110) and can contribute to the devaluation of friendships and communities (Rosa 1994, 109-110; Jackson and Scott 2004). Many have also examined the roles of homophobia (Halpern 1999; Munson and Stelboum 1999; Vernalis 1999), biphobia (Murray 1995), and compulsory heterosexuality (Rosa 1994) in maintaining monogamy as "the only way" (Dal Vera

1999). Collectively, these thinkers make a powerful case for understanding monogamy as compulsory.

While feminists have theorized monogamy as a powerful social norm, scientists study monogamy as a mating system or strategy (Herlihy 1995). The basis of the study of mating strategies is the evolutionary assumption that each individual organism, human or otherwise, has as its primary "goal" the perpetuation of its own genetic material through reproduction. A mating strategy evolves according to increased chances of species survival. For more than 90% of the animal kingdom, this means spreading genetic material as far and wide as possible (Fisher 2004, 133; Nair and Young 2006, 146-152). Scientists insist that some species, among which are humans, are naturally monogamous.[2] Monogamy, they argue, evolves in circumstances where having two "parents" to feed and protect offspring increases their chances of survival and thus the continuation of the species.[3] While no evolutionary basis for sexual exclusivity exists (Barash and Lipton 2001), coupling is considered normal for humans.

It is important to note that these scientific claims about the naturalness of monogamy in humans are inflected by understandings of sex and gender that make monogamy ideals different for males and females. Specifically, in studying monogamy, scientists generally look for different mating strategies in males and females and link these strategies to scientific descriptions of gametes:[4] sperm are plentiful and mobile, hence males optimize their chances of reproduction by spreading their genetic material around. Eggs in females, on the other hand, are represented as both stationary and finite in number, so females presumably maximize their genetic survival by selectively choosing how to make the most of their seed.[5] These scientific strategies and

representations thus come to produce different gendered meanings for monogamy: monogamy is assumed a priori for females, while a variety of different theories emerge in different moments to explain male monogamy.[6]

In this brief sketch of the two discursive domains covered by this dissertation—feminist and scientific approaches to monogamy—it becomes clear that their understandings of monogamy and why we value it seem worlds apart. However, as I will argue in this dissertation, feminist challenges to monogamy sometimes use the same "monogamy language" as science. Again, Emens' work is instructive in this regard. Emens' systematic argument for thinking of monogamy as compulsory articulates the hinge that links naturalizing scientific discourse on monogamy with feminist challenges to it. That hinge is monogamy's inverted reflection: a naturalized conception of polyamory.

In Emens' account, scientific naturalizing discourse plays a part in shaping "monogamy's law," while polyamory serves as a field of resistance to that naturalization. Her argument has two major components. First she offers an account of monogamy's compulsory status as evidenced by laws. This account includes a brief review of romantic and scientific stories that naturalize coupling. Second, she posits "polyamorous existence" and the variety of practices of consensual non-monogamy it entails,[7] as an antidote to the problem of compulsory monogamy. She suggests that while the use of minoritizing rhetoric[8] may be the best strategy to facilitate legal recognition of non-dyadic relationships, universalizing rhetoric around polyamory powerfully destabilizes monogamy because "it challenges people to admit their own transgressions and violations of the law of monogamy" (344). This universalizing rhetoric suggests that everyone is

"really" non-monogamous, a claim that inverts the naturalizing claims of scientific discourse on monogamy, effectively naturalizing non-monogamy.

Emens is not alone among feminists in seeing the power of universalizing and ultimately naturalizing claims about polyamory to challenge compulsory monogamy. I have critiqued her essay in some detail not to dismiss the powerful work it does in exposing the ruse of naturalized monogamy, but rather to open a space for a slightly different argument, and one I pursue in this dissertation. To be sure, I agree with Emens that scientific discourse plays an important role in naturalizing monogamy and rendering alternatives invisible, and I write this dissertation from the perspective that this scientific naturalization of monogamy has still been undertheorized. I also agree with Emens that the visibility of the wide range of relationship formations loosely grouped under the rubric of "polyamory" opens up possibilities for "choice" that are often foreclosed by the ubiquity of assumptions about the naturalness of monogamy. I also concur with feminist thinkers who have suggested that challenging the ideal of the couple opens up possibilities for structuring relationships in ways that can transform our worlds by decentering the domain of the nuclear family form (Goldman 1969; Rosa 1994). If feminists have critiqued monogamy as a set of norms and values that keeps women apart and reinforces various aspects of patriarchal and heteronormative culture, I argue that polyamory discourse offers a challenge to monogamous forms of sexual relating. Because I want to challenge the epistemic status accorded the natural, I do not agree that contesting monogamy by arguing for the naturalness of its mirror image, polyamory, is the answer to the problem of "monogamy's law."

This project offers a feminist perspective on the monogamy debate by reading compulsory monogamy and feminist polyamory through the naturalizing discourse of science. While feminists have critiqued monogamy in myriad ways, their attempts to challenge its compulsory status have often done so in ways that replicate the same naturalizing logic on which are built scientific claims that naturalize monogamy. While I share the feminist desire to challenge compulsory monogamy, I argue in this dissertation that feminist theorists of compulsory monogamy should challenge the naturalization of both monogamy and non-monogamy.

I argue that the naturalization of both monogamy and non-monogamy relies on assumptions not only about monogamous dispositions or practices, but also about other naturalized differences. The scientific naturalization of coupling implicates monogamy in the production of normal and abnormal types through the use of analogies between categories of difference. My reading of the scientific analogizing frameworks that make monogamy appear to be natural can be extended to the naturalization of non-monogamy in feminist discourse as well. Specifically, in contemporary feminist polyamory literature, non-monogamy emerges as the "natural" mirror of monogamy constituted as natural by science. This mirroring effect leads me to question universalizing feminist rhetoric about polyamory. I argue that in their claims that non-monogamy is natural, poly[9] authors challenge the naturalness of monogamy at the risk of reproducing the logic of the analogizing frameworks of science. I propose that feminist theorists of compulsory monogamy resist naturalizing rhetoric as a strategy for destabilizing monogamy, and instead look to other resources for imagining an alternative to the paradigm of coupling. I propose that Michel Foucault's "Friendship as a Way of Life" (1996) offers an ethical

framework for thinking about monogamy that destabilizes its normative status, without reproducing the logic embedded in naturalizing claims.

This dissertation makes a unique contribution to the study of monogamy by bringing together three bodies of literature that have previously been kept apart. In Chapter One, "Feminism, Science, and the History of Sexuality: Reframing Compulsory Monogamy," I position myself in relation to these three bodies of literature: feminist critiques of monogamy, literature on the place of science in the history of sexuality, and feminist science studies. First, feminist critiques of monogamy are my impetus for making the naturalization of monogamy an object of critical inquiry. To this field I offer an alternative account of what is at stake in destabilizing monogamy. Second, literature on the history of science and sexuality informs my understanding of scientific naturalization as an important site for the intersection of a seemingly endless proliferation of differences. To historians and theorists of sexuality and science I offer monogamy as an under-explored nodal point in the production of normal and abnormal bodies. Finally, feminist science studies provides the rationale for engaging scientific knowledge production directly, rather than focusing exclusively on naturalizing gestures that evoke "science" or "biology" within the broader culture. To feminist science studies, I offer a cautionary intervention into the retrieval of "the biological body," suggesting that we must consider the often invisible meanings produced by analogizing frameworks in the space between "the body" and "the biological."

In the context of these three discursive fields, I propose a reframing of how we understand the scientific naturalization of monogamy. This reframing of scientific discourse has implications for how we think about the naturalizing rhetoric of feminists

around polyamory. Specifically, feminist science studies offers epistemological interventions that have illuminated the extent to which "what we know" depends upon "how we know," to use Ruth Hubbard's formulation (Hubbard 1990). If we "know" that monogamy is natural, how we know that matters. If we understand the "how" of knowing—what Emens calls "the dogged pursuit" (297) of explanations of human sexuality that naturalize monogamy—within a pathologizing framework of normalization, the "what"—naturalized monogamy—is implicated within the production of the normal. In this framing, the important question is no longer what possibilities are foreclosed by the naturalization of monogamy but, rather, in what ways does that naturalization rely on and reproduce dominant understandings of what and who is normal? The first question, which informs Emens' analysis of compulsory monogamy, is a question about what we know and what that knowledge *does*. The second is a question about the pre-theoretical assumptions underlying that knowledge and the practices that produce it. Although I am certainly interested in answers to the first question, I am more concerned about the second question: how to think about the relation between the "what" and the "how" by focusing on the relation between epistemological frames and scientific practices.

The shift from the "what" to the "how" describes the transition from Chapter One's epistemological reframing of monogamy to the heart of the dissertation: my direct engagement with contemporary science on monogamy and genetics. In the second chapter, "The Monogamous Human?: The Naturalization of Coupling in Genomic Research," I draw on primary science articles and my own interviews and observations in a laboratory on whose work recent reports of the discovery of a "monogamy gene" are

based to tell a story about how monogamy is naturalized. While it is not surprising, as Emens notes, that we can draw on a range of scientific stories about the naturalness of coupling, how those stories are established as scientific matters. Scientific authority is based, in large part, on the purported objectivity of its truth claims. This means, in practical terms, that the power of science depends on its ability to verify its findings. My laboratory ethnography begins, then, from a sense of the importance of how that "proof" or verification is practiced and established. I tell the story of one laboratory, Larry Young's neuroscience laboratory at Emory University, chosen primarily because of the press attention it has received for its research on voles and monogamy. Rather than an argument about "what science says" about monogamy—it says a lot of things—this case study suggests a new way of understanding monogamy. Specifically, it suggests that reading scientific discourses and practices around non-monogamy alert to slippages that link it to other pathologized categories of difference may lead to productive strategies for re-theorizing the stakes of compulsory monogamy.

In the laboratory on whose work I focus, the idea that the human is monogamous is the rationale for the use of the neurochemical process said to control it as the basis for research on psychiatric disorders. Because the proposition that the human is monogamous is an evolutionary claim, that which cannot be consolidated within the definition of monogamy becomes an evolutionarily anomaly, a problem to be explained. The Darwinian idea of natural selection through heredity predates the concept of genes, attributed to Mendel, and the concept of genes predates the discovery of DNA.[10] For as long as "genes" have existed as an idea—and now, defined as information bearing sections of DNA—they have been understood as the biological medium through which

traits are passed on and thus species evolve (Hubbard and Wald 1993). Within this laboratory, monogamy is said to be controlled by a genetic variation, or "gene." Importantly, the genetic variation that they argue makes some voles non-monogamous is the biological problem they aim to "fix" in individuals diagnosed with "asocial" psychiatric "conditions" like autism. I argue that the model the laboratory uses implicitly pathologizes non-monogamy and that it does so by associating non-monogamy with stunted psychiatric and evolutionary development. This analogizing logic is evidenced not only in the laboratory's framing of questions, but also in the experiments they use to verify the answers.

In the third chapter, "Against Compulsory Monogamy: The Naturalization of Non-Mononogamy in Woman-Centered Polyamory Literature," I draw on this critique of the naturalizing discourse and practice of science to address a similar problem in feminist celebrations of non-monogamy. I turn my attention to naturalizing rhetoric in feminist polyamory literature that draws on the kind of universalizing assumptions about non-monogamy I examined earlier. Examining poly literature as the inverted mirror of naturalizing discourses on monogamy reveals a parallel logic at work that links feminist naturalization of non-monogamy to scientific pro-monogamy claims. First, the moral hierarchy of monogamy and non-monogamy is reversed in the poly literature: if science says monogamy is good, poly feminists say monogamy is bad. However, certain assumptions about naturalized difference remain intact in both discourses. Second, if the inability to bond or fall in love is pathologized in scientific discourse on monogamy, a similar logic informs the romanticization of sexual promiscuity in poly literature as the flip side of pathologized sexual exclusivity. Specifically, science pathologizes non-

monogamy as the failure to bond through its association with autism. Similarly, feminist polyamory naturalizes non-monogamy as the refusal to be sexually exclusive through the romanticization of the idea of a primitive sexuality, a pre-cultural "before" of compulsory monogamy. In both contexts, non-monogamy is understood within the framework of an evolutionary economy that associates supposedly inferior types with one another (McWhorter 2009; Ordover 2003; Stepan 1996; Schiebinger 1993).

Chapter Three explores the evolutionary logic that informs both science and feminist polyamory by linking sexuality to race as the primary mode through which poly naturalization of non-monogamy appears. I draw on histories of race and sexuality in science to frame my reading of naturalizing rhetoric in two popular woman-centered polyamory collections, alert to "racial resonances" (Somerville 1998; 2000). I argue that in these collections the denaturalization of monogamy relies in implicit and explicit ways on the reproduction of a racial economy that associates blackness with hyper-sexuality. Rather than making a claim about poly literature in general, I use my analysis of these examples to illustrate that naturalizing discourse on non-monogamy is as deeply embedded in conceptions of the normal and the analogizing frameworks that inform them as scientific naturalizing discourses on monogamy.

If the first three chapters function primarily through the mode of critique, Chapter Four offers a constructive alternative to the naturalizing discourses of science and feminist polyamory. In the fourth Chapter, "Destabilizing Naturalizing Discourses on Monogamy: Anti-Monogamy and Bechdel's Lesbianism as a Foucauldian 'Way of Life,'" I read Alison Bechdel's comic strip *Dykes to Watch Out For* (1983-2008) as providing a queer "lesbian" feminist ethics of anti-monogamy that resists recourse to

nature as justification for its claims. This decoupling of monogamy and biology upsets formulations set out in both genetics and polyamory. In place of naturalizing rhetoric, Bechdel offers us what we might call a Foucauldian "way of life" that opens up possibilities for creating new forms of relationships. Polyamory is a part of this world, but it is not the only alternative to monogamy, nor is it assumed to be transformative in itself. The decentering of the couple here happens through rendering the ideal of monogamy visible and through a proliferation of relationships—friendships, romances, households, communities—that are not premised on an ideal of "twoness."

I conclude by offering some thoughts about future directions for feminist theories of compulsory monogamy. I also return briefly to the history of sexuality to suggest that given the trajectory of naturalizing discourses on monogamy at the turn of the 21st century, monogamy (both as love and as sexual exclusivity) should be explored. The historical relationship of these concepts to the idea of sexual instinct may help us to understand more about how the ideal of monogamy became biological and compulsory. Finally, I return to feminist science studies to propose a rethinking of the nature of "the biological." I claimed at the outset that monogamy is both visible and highly contested. My dissertation will have shown that monogamy can be made visible *and* remain contested—that is to say, rendering its meanings and status less stable need not depend upon the authority of other naturalizing claims to challenge monogamy's compulsory status.

Chapter One

Feminism, Science, and the History of Sexuality:
Reframing Compulsory Monogamy

My project initially grew out of engagement with a diffuse body of literature that I term "feminist critiques of monogamy." This literature is critical of the idea that monogamy serves women's interests. These scholars regard monogamy, rather, as an institution or norm with which feminists should take issue. Following these thinkers I regard monogamy as a problem for feminism. Existing critiques have problematized monogamy in myriad ways and some have noted the naturalization of the ideal.[11] However, the literature's collective theorization of monogamy's compulsory status is inattentive to how monogamy becomes naturalized.

In this literature review, I seek to reframe compulsory monogamy. Following Foucault's famous distinction between repressive and productive forms of power-knowledge, I argue that compulsory monogamy is more than a prohibition on non-monogamous alternatives, but rather constituted in part by a proliferation of discourses on the nature of monogamy (Foucault 1998). These discourses implicate monogamy in a production of normal and abnormal bodies marked by assumptions about the binary and analogous nature of difference. Following my review of feminist critiques of monogamy, I offer a sketch of monogamy's relevance to histories of the emergence of sexuality through scientific naturalization in the 19th century. Finally, I offer a review of feminist science studies to frame my engagement with contemporary scientific discourse and practice.

Feminist Critiques of Monogamy

Feminist engagement with monogamy defies easy categorization. It is tempting to try to break the literature down into materialist, psychoanalytic, and philosophical perspectives. However, while certain authors may have various commitments to these or other primary disciplines, most of the analyses are interdisciplinary. And although the literature spans decades, it cannot readily be organized chronologically. It is also tempting to argue that the earliest critiques came out of white, Western, middle class heterosexual women's dissatisfaction with being trapped at home and that later critiques came out of a succession of sexual liberation and identity movements. But this would oversimplify the interconnectedness of heterosexual and queer feminist critiques of monogamy and ignore the ways in which lesbianism was explored as an alternative to straight monogamous marriage (Fleming and Washburne 1977) and how heterosexual and same-sex marriage remain important to feminist critiques of monogamy (Emens 2004, 375). I organize my discussion here primarily around feminist concerns with monogamy's relationship to compulsory heterosexuality and its institutionalization in marriage. I then offer a briefer discussion of feminist accounts of the roles of homophobia and biphobia in maintaining monogamy as "the only way" (Dal Vera 1999, 20).

Feminists concerned to challenge or transform the institution of heterosexual marriage have had to look at monogamy. As one observer put it:

> One of the most significant rules imposed on this relationship [marriage] is that of monogamy, an extremely well-entrenched code, completely supported by law, religion, and custom. Upon this framework, taught by parents, schools, churches, synagogues, the law, medicine, and reinforced by the media, women and men are expected to build their lives. (Dilno 1978, 56-57)

It is not, however, a code imposed on women and men equally. As many have noted, monogamy serves patriarchy, literally, by allowing patrilineage (Robinson 1997, 145; Murray 1995, 296; Stelboum 1999, 43). If a woman has more than one (male) partner, paternity is uncertain.[12] Of course the ability to make financial demands of fathers—especially in a context of little or no public support—has been important for mothers. Economic insecurity is key to the imperative for women to marry and thus to understanding their investments in monogamy (Goldman 1969, 228; Murray 1995, 296; Rosa 1994, 111).

Given these conditions, monogamy "promotes the practice of women seeing each other as property" (Fleming and Washburne 1977, 301; Robinson 1997, 145). As one critic concisely puts it: "both *monogamy* and *non-monogamy* name heteropatriarchal institutions within which the only important information is: *how many women can a man legitimately own?*" (quoted in Overall 1998, 3, her emphasis). Indeed adultery laws have historically applied only to women's extra-marital sexual relations, not men's, (Tibbets 2001, 1-2) and "husband-swapping" was never a term with wide currency (Murray 1995, 297). Women belong to men, while the reverse is not (with some notable exceptions) true. These practices are often reinforced by assumptions about biology: while men are said to have "drives," discourse around women's sexuality is centered on notions of romantic love and belonging, to which monogamy is central (Dallos, Dallos, and Foreman 1997, 139-141).

The security that monogamy offers is not only economic, but is linked to the need for other types of "protection." Lees (1993, 264-265) explains that girls are inculcated with fear from the time they are quite young, and that part of being sexually responsible

is learning where to go, when, and with whom: how to avoid rape. The protection of a man, from both physical assault and damage to one's reputation, becomes highly valued: "by allowing one man full access to her body, a woman can obtain his protection from other men" (Murray 1995: 296). Offering the protection of a partner as an alternative to control over one's own body and sexuality, "monogamy becomes a central element in sexual power relations" (297).

The gendered language and content of the formal and informal means by which girls and boys learn about sex and love prepare them for very different experiences of romance and marriage. While masculinity entails agency, being feminine requires that a girl appear innocent, seek out a steady boyfriend, prioritize men's pleasure, and "let sex happen" (Holland, et al. 1998, 6). Femininity thus constitutes an "unsafe sexual identity" (6). Many suggest that the only way to negotiate the ever-present risks of being labeled a "slag" or "slut" or, alternatively, "tight," a "prude," or a lesbian, is to "settle down" with one boy (Collins 2000, 134; Holland et al. 1998, 168; Lees 1993, 55). Monogamy then, though repeatedly left unsaid, is an absolutely central feature of femininity.

If monogamy is central to femininity, it is also true that men benefit from monogamy to women's detriment (Robinson 1997, 144; Rosa 1994, 109). Tsoulis articulates a common concern, especially in lesbian feminist critiques of monogamy:

> Monogamous love, eulogized in our society, is the tool by which women are controlled. The familiar idealised pattern of falling in love and living with the man of our dreams for ever and ever (we hope) has infiltrated our thinking. It is no accident that 'love is blind' and leads women into an irrational loss of control. It leads us to *making men the centre of our world, re-directing our energies and severing ties with others* in an all-consuming fashion. (Tsoulis, quoted in Robinson 1997, 145, my emphasis)

According to this view, the romanticizing of exclusivity and the fantasy that there is one person "out there" who will fulfill all of our needs undermines the importance of women's relationships with one another and depoliticizes their shared interests by individualizing them. Women's over-investment in a single relationship, emotionally and in terms of their labor, works to men's advantage (Robinson 1997, 145), providing them with the support and free time to focus energies on career, personal growth, and/or other relationships. This "over-investment" results in women's constrained ability to "develop other parts of ourselves" (Fleming and Washburne 1977, 270) and often makes leaving an abusive or unfulfilling relationship extremely difficult (Rust 1996, 132; Rosa 1994, 110).

Christine Overall describes these investments in monogamy in terms of women's identity formation. She argues that women, more than men, are encouraged to construct their identities relationally. She also argues that "[b]ecause in Western culture, sexual relating is defined as the ultimate form of intimacy, the result in women's romantic/sexual relationships is often an expansion of the sense of self to include those with whom they have sexual relationships" (8). This "is reinforced, for heterosexual women, by the definition of the heterosexual couple as the building block of the culture" (9). Thus a woman is likely to experience her partner having a new sexual partner as more threatening than a new friend, hobby, or other commitment (Overall uses vegetarianism as an example) which may also take up a partner's time and energy. One partner having a new sexual partner forces what Overall calls "the monogamous partner" to expand her realm of intimacy and may thus be experienced as violent.[13]

Overall makes the point here, which feminist critics of monogamy have failed to systematically address, that the reification of sex is implicit in discourses of both

monogamy and non-monogamy (14). Non-monogamy is indeed often described as a way of embodying or coping with uncontrollable or excessive sexual desire. However, others have argued that non-monogamy can be a way of rejecting the privileging of sexual desire as a basis for structuring relationships. They have made a point of highlighting the extent to which non-monogamy can actually challenge rather than reinscribe the designation of particular types of relationships as distinct and hierarchically organized. Rosa (1994) explains: "for monogamy to exist there needs to be a division between sexual/romantic and non-sexual love" (109), with the former prioritized over the latter. Non-monogamy can be an articulation of the desire to assign value to different types of relationships. By challenging this hierarchy, non-monogamy can also challenge what Rosa refers to as "compulsory sexuality," that is, the way sex is seen as fundamental to romantic love and future-oriented relationships (110).

Feminist critics of monogamy are also concerned with ways in which homophobia and biphobia function to reinforce compulsory monogamy and extend the reaches of its impact beyond heterosexually-identified women. Some have argued that in a homophobic society wherein lesbians are seen as already transgressing norms of femininity, they are under greater pressure to be monogamous (108). Possibilities for fulfilling relationships seem to be limited by the pervasiveness of this ideal: "We [lesbians] want to honor each other, and to do that we believe we need to use the model of the heterosexual imperative. That is the married, monogamous one" (Loulan 1999, 36). Loulan goes on to describe the dilemma of the polyamorous lesbian: "Not only must she stand up to the radical heterosexual nut cases, she must stand up to her own community that sees polyamory as an affront to the sacrosanct union of two women

struggling against the tides of the evil world. She is a heretic in a community of heretics" (37). This sentiment is echoed by comments on lesbian attitudes toward polyamory made by others in the same volume (Gartrell 1999, 24).

Others have argued that bisexual women are similarly compelled to be monogamous, as a result of "biphobia" in both lesbian and heterosexual communities. Stereotypes of bisexuals as non-monogamous, or as incapable of monogamy, have created an increased pressure for them to be monogamous, to prove that they *can* (Halpern 1999, 162; Murray 1995, 301-303). In her explanation of this dynamic, Murray explores the concept of "safe" people—those who are explicitly off-limits sexually. It is assumed that sexual feelings are either absent or present depending upon the location of this safety net (Murray 1995, 298). For example, straight men and women are often thought incapable of being "just friends," whereas gay men and straight women are assumed to make the best of friends. Another assumption embedded in these stereotypes is that sexual feelings get in the way of friendship. This makes bisexuals dangerous, as they are assumed to be attracted to everyone.

Murray notes that factors other than gender and sexual orientation can place people out of bounds—she mentions race, age, size, and ability as examples. It seems that the assumption with non-monogamous bisexuals (real or imagined) is that no one is out of bounds. The object of desire is not understood simply as "*anything* that moves," as one bisexual magazine's title put it, but *everything*. The non-monogamous bisexual is never "safe," even when partnered. Some celebrate this as a radical challenge to the "love laws,"[14] while others are concerned with the ways in which it can be seen to engender "polyphobia" (Halpern 1999, 158).

Because sexuality is often inferred on the basis of the gender of one's partner, a monogamous bisexual woman is likely to be read as either a lesbian or as straight (Murray 1995: 300). As Hemmings (2002) points out, "[i]t is a present with only one lover of only one sex…that poses the most problems for a bisexual identity" (26). The conflation of bisexuality and non-monogamy[15] in the popular imagination may then be attributed as much to the assumption that all desire must be embodied or actualized as to stereotypes of bisexuals as immature (Murray 1995, 300; Bi Academic Intervention 1997, 203) or sexually voracious (Rust 2000, 421-422; Murray 1995, 299-301).

This literature demonstrates the importance of monogamy to straight and queer feminist concerns with femininity and masculinity, inequality, sexuality, and heteronormativity. These scholars render monogamy visible as a powerfully entrenched norm and make it an object of critical inquiry. Working from these compelling feminist critiques and analyses, I ask what else is at stake in the way we define, value, and resist compulsory monogamy. Concepts problematized by these critiques—sex as the highest form of intimacy, the naturalness of jealousy, compulsory heterosexuality, and compulsory sexuality—are not only gendered social and religious norms. They also reflect the idea that humans are sexual, straight, reproductive, and designed and destined for certain roles and tasks—that is to say, these assumptions are also deeply embedded in naturalizing scientific discourse and continue to reproduce themselves there.

The History of Sexuality and the Science of Human Difference

In this section I explore the centrality of the scientific study of human differences to conceptions of sexuality and sexual identity historically. I highlight the importance of

monogamy in this history in order to illuminate its relevance to recent discussions about monogamy and non-monogamy in scientific and polyamory discourse.

Sexology—the scientific study of sexuality broadly defined—has been and continues to be integral to identity movements that claim legitimacy for a variety of "perversions." Given sexology's role in the "proliferation of perversions" (Foucault 1998), it is not surprising that the move to render intelligible and respectable relationship models that challenge the ideal of monogamy would draw on the discourses of sexual science. In this section I aim to contextualize discussions regarding the naturalness of sexuality and the biological basis for particular desires and expressions. Locating monogamy and non-monogamy within this historical trajectory, the body becomes a site of contestation over their meanings.

The emergence of biological theories of sexuality can be traced to the 19th century and have their moorings in the scientific principles of the Enlightenment. It was not until the 1890s that "sexuality" first came to be associated with types of people or attraction (Bristow 1997, 4; Oosterhuis 2000, 7). This is not to say that until this time sexual *acts* were not regulated, and deemed natural or unnatural. They certainly were (Katz 1995), but only beginning in the late nineteenth century were they linked to a notion of "sexual instinct" (Bristow 1997, 18). The invention of homosexual and heterosexual *bodies* marks an important moment in the study—and history—of sexuality and a larger shift toward the reading and regulation of bodies, rather than behaviors. This historical shift from criminalizing to medicalizing discourse effectively biologized morality, creating categories of innately inferior and superior people (Foucault 1998; McWhorter 2009).

The idea of sexuality as instinctive was both informed by other aspects of culture and productive of new meanings within Euro-American cultures. Many people saw their embodied experiences reflected in these new types and indeed some early sexologists saw themselves or were seen by others as progressive forces in their acknowledgement of the widespread existence of perversions that had remained unnamed (Felski 1998; Oosterhuis 2000). The emergence of sexual identities in the early 20th century, reinforced later by psychoanalytic models, is still the dominant framework through which sexuality is read. The idea that sexuality is innate and instinctive, rather than being constituted otherwise, is largely taken for granted and has become the accepted basis for establishing the legitimacy of a variety of practices, desires, and lifestyles, including polyamory.

As Rainer Herrn explains, "In the popular and scientific cultures of today, any behavior that is considered 'abnormal' requires an explanation. To meet this requirement, biological explanations have been widely accepted over the last century" (Herrn 1995, 32). It is not surprising then, that as "alternative" relationship and family models seek legal protection and respect, biological or naturalizing language has emerged to describe or explain it. Those who openly bend or break the rules of compulsory monogamy are subject to discrimination and often harsh moral judgements.[16]

Many have argued for the need to "denaturalize the essentialist presumptions about desire that have governed modern approaches to erotic identities and practices" (Bristow 1997, 10). Others have argued for the need to denaturalize such presumptions not only about sexualities, but about other categories of difference—disability (Garland-Thomson 1997) and race (Omi and Winant 1994) for example—that emerged as biological in the 19th century as well. Others have sought to challenge the naturalization

of concepts that intersect these categories, like beauty (West 2002) and intelligence (Gilman 1996). Many feminists (among others) have sought to explain and illuminate ways in which these and other categories are linked in the 19th century biosciences and in contemporary culture. They have engaged a considerable range of questions about how slippages between these categories reproduce race, regulate sexuality, and shape discourse around disease and disability (see for example Caplan 1998; Guy-Sheftall 2002; Mort 2000). Here I offer a brief account of this historical intersection of differences in the 19th century biosciences, followed by a sketch of monogamy's place in it.

In spite of controversies and dissenting opinions, by the late-nineteenth century the idea of a natural hierarchy of human types was largely taken for granted. Between 1830 and 1850, with the rise of popularity of polygenism—the idea that humans do not share an evolutionary origin—the belief in innate, hierarchical, and measurable difference became an accepted scientific and popular truth. Even with the decline of this theory by mid-century, this "truth" lost none of its traction (McWhorter 2009; Stepan 1982). This conception of human difference was reconciled with monogenism—the idea that humans are in fact one species and share an evolutionary beginning—by the idea that human types represent different points along the continuum of the development of the species, rather than wholly different species. This logic linked individual pathology to evolutionary inferiority.

The cementing of this linkage can be attributed to what is sometimes called Social Darwinism, an idea that continues to powerfully shape contemporary conceptions of difference. Darwin used the idea of "natural selection" to explain his theory that

humans evolved slowly from animals. In Darwin, natural selection initially referred to the development of traits most likely to perpetuate survival. Based on these traits, evolutionists considered some species more "fit" for survival than others. When scientists and social commentators contemporaneously used the idea to explain mental and phenotypic variations among humans—and between racialized groups in particular—natural selection became linked to heredity (Stepan 1982, 55). Darwin, among others, then sought to explain not only how humans evolved from animals, but how civilized Europeans evolved from "lesser races," in terms of traits passed on from one generation to the next (55-56). The deployment of this evolutionary logic to explain or justify social hierarchies is Social Darwinism. This connection between individual heredity and species evolution not only provided scientific support for social inequalities,[17] it also gave rise to a science of selective breeding—of intentionally "selecting" for desirable traits by controlling who reproduces. This is the science of eugenics. The logic underlying this science—the idea of innate, hierarchical, and heritable human differences—is the basis of modern genetics (Ordover 2003; Parens 2004, 9).

The science that constituted superior and inferior—normal and abnormal—human types also depended on analogy (Schiebinger 1993; Stepan 1996; McWhorter 2004; 2009). Through the deployment of complex "intertwined and overlapping" analogies the 19th century biosciences produced what Nancy Stepan refers to as the "biosocial science of human variation":

> By analogy with the so-called lower races, women, the sexually deviant, the criminal, the urban poor, and the insane were in one way or another 'races apart' whose differences from the white male, and likenesses to each other, 'explained' their different and lower position in the social hierarchy. (Stepan 1996, 123)

All of these types—or "races" (McWhorter 2009)—in their purported closeness to nature, to a time before civilization, were thought to share certain traits—they were emotional, weak, moved by the drives of their natures. They were childlike, not in control (Gilman 1985, 113).

Three "types" that emerged within this sexological schema and connected sexuality to other differences through the logic of analogy link monogamy to notions of evolutionary superiority: the prostitute, the homosexual, and the bisexual.[18] The prostitute is presented in the 19th century as a biological type with distinct genitalia and mannerisms comparable to those of the hottentot;[19] she is also the archetype of the promiscuous, unmarried woman, the counterpart to the married monogamous woman (Caplan 1998; Gilman 1985). Monogamy is also presented as a feature of heterosexuality,[20] and the homosexual as an evolutionarily inferior type (Somerville 2000). The bisexual—linked to non-monogamy in the contemporary imagination—is also, in its various meanings, represented as a primitive, underdeveloped type (Storr 1997).

As a feature of sexual morality, but not quite an essence in itself, monogamy occupies an interesting place in the history of sexology. This ambiguity is exemplified in the opening pages of Krafft-Ebing's *Psychopathia Sexualis* (1886), now canonical in the history of sexuality (Oosterhuis 2000) and of sexuality and race (Gilman 1985; Storr 1998). While non-monogamy does not, like "homosexuality," "bisexuality," or "prostitution," constitute a perversion warranting analysis in the text, the connections established among Christianity, monogamy, and whiteness[21] form the foundation for Krafft-Ebing's readers' subsequent understanding of deviant desiring. He states that:

> the love of man, if considered from the standpoint of advanced civilization, can only be of a monogamic nature…From the moment when woman was recognised the peer of man, when monogamy became a law and was consolidated by legal, religious and moral considerations, the Christian nations attained a mental and material superiority over the polygamic races, and especially over Islam. (Krafft-Ebing 1924, 4-5)

Krafft-Ebing understands "the love of man" as romantic love between men and women and posits heterosexual monogamy as an implicit part of the norm against which other desire is construed as perversion. The phrase "polygamic races" suggests the setting apart of a non-monogamous "type," yet its distinct characteristics are nowhere elaborated.[22] Krafft-Ebing's view demonstrates how monogamy is both racialized and biologized in sexology, but it does not describe monogamy as analogous to homosexuality, as a designation of types or races of people. In Krafft-Ebing, monogamy is still behavioral and not a measurable anatomical difference. Similarly, as I will show in Chapter Three, naturalizing rhetoric on polyamory evokes non-monogamy in terms of behavior that is naturalized.

The scientific naturalization of monogamy in the form of genetic research, however, seems to situate monogamy as precisely this kind of measurable categorical difference, suggesting that there are some individuals, groups, or species that have "the monogamy gene" and others who do not. This would appear to be a recent discovery, made possible by advances in technology that enable the kind of genomic research we see today. But if we look back to phrenology[23]—the earliest naturalization of personality and behavioral traits as measurable anatomical phenomena—we see a designation of types more or less naturally inclined to heterosexual, companionate, lifelong monogamy (Willey 2006). Phrenologists associated three "organs"[24] with these traits: "amativeness," "adhesiveness," and "union for life." Europeans were said to have better

"proportioned" organs for these traits than members of various religious and national populations racialized by phrenology (Bank 1996; West 2002). Phrenologists argued that amativeness controlled love for the opposite sex. Too large or small an organ could lead to licentiousness or lack of desire. They argued that adhesiveness controlled attachment and that union for life controlled lifelong attachment to a mate. While adhesiveness could also make a person a loyal friend or citizen and was necessary to "fitness" for marriage, union for life was particular to romantic, marital love.

Phrenology made the centrality of the brain to the study of human anatomy a central tenet of physiology and introduced the idea of brain localization, to which contemporary neuroscience is heir, by the account of its own practitioners.[25] As we shall see in Chapter Two, assumptions not only about the brain, but also about the traits it controls, emerge again in contemporary research on monogamy. Specifically, heterosexual assumptions as well as the connection *and* careful distinction between romantic love and other attachments we find in phrenology appear again in modern genetic research on monogamy in voles. So too does the assumption that some types of people are innately better disposed to achieve monogamic bliss than others. My aim is not to construct a narrative that paints these contexts as identical, but rather to use this comparative framing to suggest that while the context that made phrenological claims about monogamy intelligible is more apparently "biased," given what we know now about phrenology, contemporary genetic claims are startlingly similar.

Feminist Science Studies

My approach to naturalizing discourses in science and polyamory rhetoric is informed by the epistemological interventions of feminist science studies. Following

these interventions, this dissertation analyzes science as a part of the larger culture in which its knowledges are produced. Based on this view of science, it challenges the privileging of science as an explanatory regime. I take from this literature not only the contingency of scientific knowledge claims, but also a sense of the need for theories of the body that acknowledge its materiality within feminism. Combining a variety of approaches from the inter- and multi-disciplinary field of feminist science studies, I weave together an analysis of published scientific data on the monogamy gene, press about those findings, as well as interviews with scientists and observation of experiments in a laboratory where genetic research on monogamy is being conducted.

My methods are informed by an ongoing conversation about what feminists might hope or aspire to achieve by looking at the claims of science under a microscope, so to speak. Acknowledging in advance the risks of losing some nuance in individual analyses, I thematize reformist, critical, and creative takes on the purpose of feminist science studies. First I offer a critique of the use of feminism as a tool to improve the objectivity of science. Then I explore feminist revisionings of the concept of objectivity, with particular attention to how they might inform our understanding of the place of scientific knowledge claims within culture at large. Finally I engage recent debates about the status of "the biological" within feminist science studies, arguing that while we do need new myths of the body (Haraway 1991), the recouping of "the biological body" for feminism is troubled by accounts—such as the one I offer of monogamy—of processes by which "the body" becomes known in biology (the study of life).

Many have argued that one of the goals (or at least potential impacts) of feminist engagement with science is to create a more feminist science. On the other hand, some

have argued that the project of science is fundamentally un-feminist. The tension is animated by differing ideas about what constitutes feminism and what constitutes science. The project of feminisms vis-à-vis science is not clear cut. We might think of the question in terms of emphasis—is the project to reform science (make it more democratic, less sexist or racist) or to undermine its power? Still, feminist critics of science do not fit easily into one or the other of these camps. In fact, the two approaches are not, as I illustrate, mutually exclusive—the former in some ways relies on the latter and the latter in many ways at least suggests the former. That is to say, for many thinkers, changing science depends upon rethinking the project of science. Destabilizing scientific epistemology, conversely, opens the doors for science to be done differently. And still neither of these categories easily contains the ambitions of feminist scholars seeking to transform feminist theories with biological knowledges.

The simplest and perhaps most widely circulated explanation of feminist science studies is that it aims to redress the mistakes science has made due to its sexism and androcentric bias by doing science better. The aims of at least one version of such a project are well-expressed in this quote from Schiebinger's *Has Feminism Changed Science?*: "Gender analysis should act as does any other experimental control to provide critical rigor; to ignore it is to ignore a possible source of error in past and also future science" (2001, 186). Schiebinger's "gender analysis" is a multifaceted set of reforms that we might begin to implement, she suggests, by setting up a government initiative—the "Women's Scientific and Engineering Initiative," not unlike The Apollo Program or The Human Genome Project (her comparisons, not mine), except that funding will be directed by feminist concerns, not by corporate and military interests (191-192). The

initiative would confront sexism in the sciences on numerous fronts. It would address the setting of scientific priorities—like women's health, the selection of subjects chosen for study, and the gender demographics of search committees, conferences, and laboratories. It would address demographics not only in scientific communities, but also of research subjects by calling for gender representative samplings of humans and animals for experimentation (187-188). Other areas for which this proposed initiative might provide much needed "gender analysis" include the study of scientific cultures and the domestic cultures that support them, decoding language and iconographic representation, refurbishing theoretical frameworks, and expanding what knowledge (like nursing) counts as science (188-190). Now these last few seem to suggest something more complex than the first set of aims, yet the substance of this "decoding" and "refurbishing" is nowhere elaborated. The gesture ultimately raises more questions about the efficacy of the first set of priorities.

Schiebinger ends up advocating a government initiative that would help insure the "critical rigor" of science by integrating a version of feminism that presumes something about the transformative presence of women.[26] For many feminist critics of science, myself included, this formulation rests on a problematic ideal of "good" science as value neutral. In this instance feminism acts as an "experimental control" with the power to eliminate (or at least minimize) "errors" that may otherwise result from biased "bad" science.

Another strand of the amorphous field of feminist science studies has grown out of feminist concerns with the nature of knowledge. For feminists for whom all truth claims are partial, contextual, and co-constitutive with power, the project of science is

itself suspect. The principles that make science science—universality, neutrality, objectivity—make it incompatible with feminism. Science, in its broadest interpretation, is an attempt to understand or explain something about the natural world, but not all theories about what nature is or how best to understand it or any of its aspects is considered science. Science has rules, the criteria for what makes scientific knowledge scientific, for what knowledges constitute science. The rules are finite: scientific knowledge is based on the scientific method; and it is objective, that is, it is value neutral and therefore universal and reproducible. Feminists have variously referred to scientific claims to objectivity as "the God's eye view" or "the view from nowhere." Haraway calls objectivity "the God trick" (1991).

In their efforts to explain how the erasure of context and accountability from scientific inquiry impacts scientific knowledge production, Hubbard (1990), Birke (1999), Stepan (1996), Lloyd (1993), and Schiebinger (1993) all highlight the importance of language. Not only is scientific writing shrouded in mystery, usually bereft of identifiable thinkers and actors, but the term "science" in itself belies a fantasy that science exists as something other than "the activities of scientists" (Hubbard 1990; Longino 1996). And the activities of scientists are, importantly, not limitless in scope. Hubbard, Haraway, Longino, and Harding in particular emphasize the reality of scientific knowledge production on the ground: scientists work for publications, jobs, funding, and prizes. More women (even, arguably, feminists) will not change the fact that considerable economic interests play an enormous role in setting scientific priorities (Harding 2006) and shaping its content and power (Haraway 1991).

Further, scientific methodology allows only for the study of what can be measured, thereby excluding from the realm of scientific inquiry phenomena that cannot be understood in terms of their component parts. Science is (necessarily) an abstraction from what scientists observe (Birke 1999) and a selective rendering of nature that involves choices made by scientists. Further, although scientific knowledge develops through some form of consensus, the participants in that process are by and large privileged individuals and are, regardless, subject to the same constraints as other members of society. In other words, scientists, like the rest of us, are socialized and acculturated and bring those values to their interpretations and choices. Thus, in a sexist culture, scientific knowledge production will, not surprisingly, reflect sexist values. In a culture where gender is of paramount importance to how our lives and worlds are structured, sex will be integral to science as both a category of analysis and as a set of implicit assumptions about how to characterize various aspects of the natural world.

Along these lines, feminists have also critiqued the very premises of science as not only androcentric (Hubbard 1990; Birke 1999; Harding 1996; Lloyd 1993; Martin 1991) but also as racist (Harding 2006), Eurocentric (Birke 1999; Harding 2006), anthropocentric (Hubbard 1990; Schiebinger 1993), and temporally situated.[27] I will look at three sets of critiques that suggest different types of projects for a feminist science. These critiques and the alternative epistemologies they offer will later inform my analysis of the science of monogamy in research on voles. First, I provide brief examples of the effects of explicitly gendered stereotypes—that is assumptions about "males" and "females" and their natural (heterosexual) relation to one another—on scientific knowledge (Martin 1991; Lloyd 1993). I will then draw on Birke's analysis of

the function of metaphor in biomedical discourse to illustrate that even when explicitly sexist assumptions are not the basis for inquiry, our language is gendered such that complexly gendered meanings find their ways into our understandings of biology. Finally, I outline Harding's (2006) assessment of the distinctively "Western" features of modern science.

Lloyd (1993) takes evolutionary explanations of female sexuality (that usually link it to or rather explain it in terms of reproduction) as an example of how social beliefs and agendas inform explanations of even very basic physiological processes. Specifically, she interrogates ideas about orgasm as an evolutionary adaptation that rewards pair bonded (monogamous) female primates for having frequent sex with their male mates. In this example, as in others she discusses, the linking of orgasm to intercourse is a fairly ludicrous yet totally unquestioned assumption underlying the formulation of questions and experiments—a problem she terms "the orgasm-intercourse discrepancy" (145).[28] Similarly, in her now-famous exposé on the egg and the sperm, Emily Martin (1991) also illustrates how social assumptions play an integral part in the constitution of knowledges that pass as "discovery" and fact. In exposing the stereotypes informing the language, metaphors, and imagery captured in what she calls "the scientific fairy tale" of egg and sperm, (486) Martin draws attention to and seeks to undermine the power of scientific discourse "to harm us" (486). The active/passive characterizations of sperm and egg[29] and the designation of menstruation as waste while sperm production is valorized (and not regarded as waste) point to the reification of stereotypes of masculinity and femininity and the persistent interpretation of masculinity as positive and femininity as negative (488-489, 499). In her conclusion, Martin explicitly engages the potential

impact of such narratives, both in terms of naturalizing cultural stereotypes and in terms of the "disturbing social consequences" (501) of ascribing personhood to cellular entities. In instances such as these, feminist critiques might well have acted as "experimental controls," enabling the interpretation of more palatable truths about orgasms and fertilization.

Birke's analysis demonstrates that there are other subtle and often less detectable ways that gender shapes scientific knowledge. She interrogates both the systems of representation and metaphors that inform biomedical discourse and argues for the need for new metaphors[30] for thinking about how the insides of bodies look (anatomy) and work (physiology). Scientific diagrams at every educational level rely on certain conventions of abstraction to represent the body's insides. Birke explores several of these and their implications for how we understand "the body" and how we experience "our bodies." First, women's bodies are often represented as "lack"—androcentric, male models represent the "human" body, and female bodies appear only to show specific (reproductive) parts (Birke 1999, 66-67). The neutral model also appears, usually un-shaded, on a white page and is, insofar as he is not raced, white (66). A second convention in diagrammatic representations is the removal of all visual contextual information. Body parts are shown within the confines of a "squiggly" (white, male) torso. MRI (magnetic resonance imaging) and ultrasound technologies also create images that divorce the insides from their contexts (other organs and so forth, as well as from the organism as a whole). The convention of representing a fetus out of context, for example, has implications for fetal rights discourse and, correspondingly, women's control over their bodies. A third convention is the setting up of gendered dualisms in

diagrammatic representation: male/female, human/animal, head/body (68). Other ways that the gendered rendering of anatomy shapes our understanding of it is through choices about what gets included and what is omitted: for example the clitoris is often omitted from representations of female anatomy because it has been considered irrelevant (71). Similarly, numerical abstraction (in tables) erases the organism as a whole. And the use of passive voice, as Hubbard and Longino also contend, renders the fact of the agency that produces the specific renderings of the body by which we come to understand it completely invisible. If we take such insights to heart, the project of feminist science must be not only to root out sexism, but also to challenge the models and metaphors that necessarily constrain the ways in which we are able to know the body and the world.

In her chapter on racism in science,[31] Sandra Harding (2006) expands the feminist discussion of exclusion and marginalization in the sciences in fruitful ways. The exclusion of most European women and non-European people from science is a problem implicitly expressed in Hubbard's (1990) argument and central to Schiebinger's (2001), but neither explicitly challenges the marginalization of other sciences, or knowledge systems, from what is understood as science proper. Acknowledging these other knowledge systems and their exclusion from science, Harding suggests, is an important dimension of challenging racism in science. Harding argues that there is in fact "a world of sciences" (Harding 2006, 5) and that Northern feminist science studies has much to learn from postcolonial science studies. She outlines four distinctively Western features of modern science from postcolonial critiques, arguing that they not only reveal it as culturally local (Euro/American), but are also central to its success. Two of the four are immediately relevant to my discussion because they address features of Western

scientific epistemology and thus help to locate the scientific claims with which I engage in Chapter Two.

First, what counts as science is grounded in Judeo-Christian belief systems and developed in the context of centralized royal authority, hence the idea that nature is "law governed" (45). While Hubbard (1990) renders the assumption that nature is knowable and predictable conspicuous at the outset of *The Politics of Women's Biology*, she does not consider alternative world views. Indeed, none of these other texts directly engage the cultural specificity of the epistemic (Longino 1996), taxonomic (Schiebinger 1993), or biomedical (Birke 1999) models with which they take issue. Second, Harding argues, the claim to value neutrality is itself characteristic of modern Western cultures (47). If in light of these challenges science has become "science" and can be said to have been more or less undone by feminist critique, the project of feminist science might be re-visioned as a project of imagining how we might remake science or rather what the criteria for a feminist epistemology might be.

Many feminist science critics have sought to theorize new ways of imagining objectivity or new criteria or standards for what constitute legitimate scientific truth claims. The often overlapping concepts of "strong objectivity," "situated knowledge," "agential realism," and "contextual empiricism" fuel this discussion. They include common elements: a recognition that knowledge is partial, situated, not universal; a desire to lay bare the political nature of all knowledge production; and some vision of what it might look like to politicize scientific knowledge production in a way that allows for an answerability, an accountability, that science as we know it lacks. Participants in this project do not share a single view on how re-imagined criteria for the claims of

science might be implemented or if they could be integrated without a radical restructuring of the contexts in which scientific knowledge is produced. Nor do they agree on what those contexts are that require change or what *that* change might look like. Here I will outline some of the ways objectivity has been re-imagined by feminists, highlighting some points of continuity and tension, in order to frame my approach to the naturalizing claims of science and polyamory in Chapters Two and Three.

Perhaps most famous is Sandra Harding's concept of "strong objectivity." Strong objectivity is contrasted to the "weak objectivity" that the sciences employ. According to Harding, objectivity in science is not weak because it is flawed in method or avoidably biased, but rather because it starts from the questions and concerns, ultimately the social location, of scientists, who are by and large privileged in every socially salient respect. Strong objectivity, on the other hand, begins from the "standpoint" of the lives of the most marginalized. That is, it presumes not the essentially epistemically superior position of, say, women, but rather assumes the benefit of asking questions that would make sense from the perspective of different and less privileged vantage points, whoever the asker. The implementation of Harding's standpoint rests on what she calls "strong reflexivity," wherein the producers of knowledge see themselves as broadly accountable and are committed to considering the blind spots imposed by their specific social location. Because she so fundamentally challenges the possibility of objectivity as we know it, Harding's work is sometimes critiqued as representing a strong anti-science bias (Hammonds and Longino 1990). While I too believe that representations of "nature" are always mediated and the objectivity we attribute to science unachievable, I argue that the problems of scientific knowledge production are not limited or reducible to science per

se. This is one of the reasons for my framing of the monogamy question in science within a socio-historical context that is larger than science itself.

Haraway (1991) rejects what she calls an "anti-science" perspective, positing that it is too simplistic to imagine that the problems of science are reducible to the practice of science. She argues that "science" is achieved in interaction with the world, and it is impossible to imagine what it might look like if the historical structure of our lives was not one of domination. For Haraway, the naturalization of domination in scientific discourse and practice is not the problem per se, but rather symptomatic of the conditions under which science developed and continues to operate—namely, under capitalist-patriarchy. The multiplicity of competing truths produced within primatology, for Haraway, exemplifies the range of situated knowledges science can produce; these competing narratives provide us with additional resources for imagining "human nature" and making the world differently. Following Haraway, I engage with science that naturalizes monogamy, but gesture to the variety of "myths" science might support. Haraway argues that even as we challenge and remake its contents, we need science, our myth, just as we need all of the other creative means we have at our disposal (18, 42). The move toward reading science as myth, as both reflective of and engendering "reality," has implications for challenging scientific hegemony and the status of science.

Karen Barad, like Haraway, frames her critiques of the concept of objectivity in terms of resisting a problematic subject/object split. It is impossible, she argues, drawing heavily on physicist Niels Bohr, to distinguish the object of study from "the agencies of observation" (Barad 1999, 5). According to Bohr, there is no "observation independent object," there are only phenomena—observation is part of the phenomena. Barad

proposes the concept of "agential realism" as a way of resolving the tension set up between "realism" and "social constructivism" ("real" object and subjective observation) in order to draw attention to science as "material-discursive" practices (6). In this formulation, objectivity and agency are bound up with responsibility and accountability—we, producers of knowledge, are thus bound to consider the possibilities—both positive and negative—of interacting with the world by studying it. In this sense we become responsible not only for the knowledge we seek, but for what exists. My project is shaped by this feminist understanding of agency. I am concerned with the role played by naturalizing claims not only in representing monogamy and non-monogamy, but also in making them "real."

Helen Longino, like Barad, wants to foreground accountability as she proposes ways we might politicize the production of scientific knowledge. She argues that science should absolutely be expected to "reflect the deep metaphysical normative commitments of the culture in which it flourishes" (Longino 1987, 56)—this does not make science "bad." Criticism of the assumptions that underlie scientific inquiry and reasoning should thus be considered an appropriate, necessary part of science. This sounds like Schiebinger's integration of "gender analysis," although it differs from her analysis in critical ways. While both get more specific than most others about what it might mean to do science as a feminist, Longino explicitly rejects the good/bad science formulation upon which Schiebinger's statement about rigor and "error" is premised. As it is for many, for Longino reading for androcentric bias is not enough. We have to look at conventions, like passive voice and attributing agency to data, as well as interpretive frames that limit the possibilities for what we might come to know. We have to insist

that the frameworks we use are always political choices, whether we see them as such or not, and that they do not in fact "emerge" from data. In Chapter Two I highlight the politics of the interpretive frames that would otherwise seem to have emerged from data on pair bonding.

Ultimately, like Harding, Haraway, and Barad in their own ways, Longino insists that we have to acknowledge our agency and our role as knowledge producers in shaping the course of knowledge. In practice, this means "alter[ing] our intellectual allegiances" (61). While we are always constrained by data, choosing not to be accountable to maintaining the myth of value neutrality and instead making explicit to whom one is accountable need not constitute a radical break from science as we know it. This type of work will be local: field and even project-specific. Making this type of intervention in many projects in many fields has the potential, ultimately, to "transform the character of scientific discourse" (62).

For Harding, the project of implementing strong objectivity cannot be assimilated into the logic of research or dominant philosophies of science; it would supplant science as we know it. For Haraway, we cannot implement changes to science without changing our lives—we will be able to imagine the natural world differently when we are able to structure our own lives in ways that are not premised on a logic of domination. The new myths of the natural world we are able to create will in turn foster and support new worlds as our old science myths have done. Barad's vision of accountability has implications for the individual choices we make as knowledge producers, whereas Longino's similar formulation, she argues, cannot be implemented until the material

conditions of scientific knowledge production, such as funding and other pressures to conform, are concretely addressed.

Projects of reform and transformation are not the only avenues feminist science studies scholars have taken. In recent years, other feminist science studies scholars have pursued the creative path of reclaiming the biological for feminism and endeavoring to remake the body's meanings within feminist theory. Richer understandings of the world might be gleaned, they suggest, by taking into account the processes of "the body," rather than positing cultural explanations as a totalizing substitute for biological ones. In her critique of its "founding gestures" Sara Ahmed refers to this "movement" as the "new materialism" (Ahmed 2008). She names Elizabeth Grosz, Vicky Kirby, Susan Squire, and Elizabeth Wilson among the thinkers "gathering" around a move to recoup the biological for feminism (Ahmed 2008, 23-24).

Ahmed argues that the emergence of this field as such is animated by a discursive move in which feminists attempting to reclaim "biology" for feminism position themselves in opposition to the "anti-biologism" of feminism. She argues that this move relies on an unfair and inaccurate representation of feminism:

> I want to consider what it means for it to be routine to point to feminism as being routinely anti-biological, or habitually 'social constructionist.' I examine how this gesture has itself been taken for granted, and how in turn that gesture both offers a false and reductive history of feminist engagement with biology, science and materialism, and shapes the contours of a field that has been called 'the new materialism' (Ahmed 2008, 24)

Noela Davis responds to Ahmed by arguing that it is not unfair, and in fact brave, to take feminism to task for critiquing science in such a way that biology and culture are allowed or made to seem separate. I agree with aspects of both sides of this split, but want to hone in on a slippage that I believe happens on both sides—biology refers here not to the

science, but rather to the body "itself." This slippage is important because it makes it appear as though the science of "biology" were an unmediated representation of "the body itself."

In both Ahmed's assessment and Noela Davis' (2009) rebuttal, specific claims that situate Elizabeth Wilson's work as an intervention within a feminist theory inhospitable to integration of the biological become a major terrain of this debate. I return to two examples from Wilson's work that Ahmed highlights in her critique and then turn to Ahmed's response in order to illustrate this slippage. In the introduction to *Psychosomatic* (2004), Elizabeth Wilson asserts that "feminist theories have usually been reluctant to engage with biological data: they retain, and encourage, the fierce anti-biologism that marked the emergence of second wave feminism" (13).[32] In *Neural Geographies: Feminism and the Microstructure of Cognition* (1998), she refers to feminism's "distaste for biological detail," "despite an avowed interest in the body" (14-15). In both of these works, "biological detail," "the body," and "biological data" are used interchangeably. At the same time, Ahmed's reclamation of those feminisms that came before Wilson's interventions does not resist this slippage, but rather reiterates it. She points to examples of feminist health materials researched and disseminated in the 1970s and 1980s that drew directly on scientific research, as well as to feminist science studies scholars who helped to revise our biological knowledge. In both Wilson and Ahmed there is a slippage between biology as the *study of* the body—or the body produced within the context of scientific inquiry—and biology as "the body itself." With this slippage in mind, I argue that we must insist on some distinction between feminist critiques of *science* and feminist refusals to engage *the body* that are rightly critiqued by

Wilson and others. This will necessitate drawing a distinction between "engaging data" and asking new questions about the body, and then carefully accounting for the interface between data and new modes of conceptualization.

Following the distinction I just articulated, my account of the scientific naturalization of monogamy can be seen as a critique of biomedical discourse attuned to the production of the biological within the laboratory: that is, one that takes biological data seriously on its own terms. At the same time my account is self-consciously invested in the embodied stakes of that production. I am very much interested in problematizing feminist theories of compulsory monogamy devoid of attention to the bodies that situate women differently within and in relation to discourses around sexuality.[33] I am also deeply concerned about the ways in which the body does appear in debates over monogamy's meanings, particularly with regard to the historical slippages I discussed in the second section of this chapter. However, rather than considering what insights neurogenetic research on monogamy might yield for feminism, my research suggests the efficacy of Deboleena Roy's call for feminists to "dis-organ-ize" the body in our return to it (Roy 2007, 27). That is to say, as I explore the processes by which the messiness of embodiment becomes tidied up in "biology," I hope to highlight the substantial chasm between the data on which we might draw and the body we want to inform our theories, a body perhaps "yet to exist" (Roy 2007, 9).

Chapter Two

The Monogamous Human?:
The Naturalization of Coupling in Genomic Research

> My research is really trying to understand the social brain, what makes us want to engage in social interactions and form social relationships. The way that I've been going about doing that is by studying these interesting little rodents called prairie voles…and what makes them so interesting is that, like people, they are monogamous.
> -Young[34]

> In his *Love's Trinity*, the Victorian poet laureate Alfred Austin sums up the holistic view of love that has long held sway:
>
> *Soul, heart, and body, we thus singly name,*
> *Are not in love divisible and distinct,*
> *But each with each inseparably link'd.*
>
> Now researchers are attempting to isolate and identify the neural and genetic components underlying this seemingly uniquely human emotion. Indeed, biologists may soon be able to reduce certain mental states associated with love to a biochemical chain of events.
> -Young[35]

At the turn of the 21st century monogamy has entered public discourse through genomic research using "monogamous" prairie voles. The idea of a "monogamy gene" has received a great deal of press attention. *The New York Times*, *The Nation*, *Al Jazeera* and various local papers as well as *Late Night with David Letterman*, *The Daily Show*, *Dateline on NBC*, *The National Geographic Channel*, and *National Public Radio* have all mentioned vole research on monogamy. Some headlines focusing on genetic links to monogamy read: "To Have and to Vole" (Ballon 2005), "How Geneticists Put the Romance Back into Mating" (Johnston 2005), and "Love is a drug for prairie voles to score" (Sample 2005).

These reports cite the research of a neuroscience laboratory headed by Larry Young at Yerkes Primate Research Center at Emory University. I focus my discussion of

naturalizing scientific discourses on monogamy on the publications and practices of this laboratory. Looking past the press to Young's laboratory's research, I find that monogamy is not so much "discovered" there, as popular gene discourse suggests, but is rather an assumption about human nature from which their research actually begins. In the laboratory, as my first epigraph suggests, people as a species are presumed to be monogamous. Young and his lab are not trying to prove this; it is the a priori foundation on which they make claims about normal psychiatric development, specifically around "social interaction." Following from this, my second epigraph shows how Young describes the same research as both the study of the social brain and as research on love. Slippages between "monogamy," "social interaction," and "love," as well as ambiguity in the definitions of these terms, creates conceptual confusion that this chapter attempts to untangle.

This chapter is divided into three sections. In the first, I analyze concepts and terminology in order to contextualize my discussion of the specifics of the research in the last two sections. I argue that the lab's use of "monogamy" naturalizes coupling in ways that reinforce compulsory monogamy. In the second section, I explain how the lab uses coupling as a neural model for psychiatric health. I argue that the lab's naturalization of monogamy depends upon the pathologization of what they call "asociality." Finally, I draw on my fieldwork in the laboratory to discuss the "partner preference test" that the lab uses to measure monogamy. I argue that assumptions about sexuality embedded in the experimental design underlie the logic of the model I discussed in the second section.

Before moving into the analysis, let me describe the basis approach of my fieldwork in the laboratory. Interested in the relationship between journalistic and

scientific claims about genetics and monogamy, I contacted Young to meet and ask what he thought of the enormous press coverage his laboratory's work had received. As far as accuracy, he had few complaints beyond noting definitional confusion over monogamy: since sexual fidelity is not part of the laboratory's definition of monogamy, but remains part of the popular definition, announcements about the monogamy gene have led to some misunderstandings that a genetic basis for sexual fidelity has been found. Beyond this factual error (discussed in the following section), Young stated that the press missed the bigger picture: they only picked up on the sexy part—the part about "love," not what that capacity stands for in terms of mental health.[36] Increasingly curious about this link and about the process by which evidence of a biological basis for what was being called "monogamy," "pair bonding," and "love" was acquired, I asked to observe in the laboratory and conduct interviews with willing researchers.

In December of 2007, I met with the entire lab of about fifteen researchers to discuss my interest in their research. I kept in touch and solicited interest by emailing their listserv, and in the Spring of 2008, I began interviewing researchers and regularly visiting the lab (see my IRB protocol and lay summary in Appendix I and Interview Guide in Appendix II). I had ongoing contact with three researchers, Young himself and two graduate students. We scheduled meeting times in advance around various experiments I had either requested to observe or one of my respondents had suggested it might be helpful for me to see. In the main laboratory space, I spent time observing researchers pipetting genetic material into thousands of tiny test tubes to be sent out for sequencing and sifting through letters and charts that represented DNA sequences on the computer. I also observed the process of slicing, dyeing, and producing electronic

images of tiny vole brains. In the animal laboratory, where animals are housed and all live animal experiments are conducted, I observed behavioral tests and the "sacrificing" of voles, including the removal, labeling, and storage of brains and livers for other experiments (brains for imaging and livers for DNA testing). Lab visits lasted for two to six hours and occurred once or twice weekly during April and May of 2008, for a total of approximately twenty hours. Follow-up with the researchers in the following months occurred mainly through e-mail. One of the things that interested me most over the course of my field work was the tension surrounding what the research was "really about." Researchers always tempered their interest in and claims about "monogamy" with caveats about the bigger picture, that is, the use of monogamy as a model for healthy social attachment in general.

The monogamy gene research is funded for its implications for treatment for autism and autistic spectrum disorder (ASD) and, less often, on drug addiction (Insel 2003),[37] a genetic link whose scientific logic I will explain in the second section of this chapter. The laboratory is using social monogamy as an assay—or model—to study these "disorders." Researchers argue that the ability to isolate a gene for coupling—and the potential for transforming behavior that this opens up—is important not primarily for the reasons the press picks up on, but because monogamy is a model for healthy human attachment in general. Monogamy—the capacity to form a pair bond with a mate—is being researched not as an end in itself, but as a model for healthy relating. It is the model for what the laboratory has tended to call "social interaction" (Young 2009) or "attachment" (Insel 2003; Young, et al. 2001), the opposite of which is not only promiscuity (Lim, et al 2004), but also "asociality" (Donaldson and Young 2008; Lim,

Bielsky, and Young 2005). In Young's lab, monogamous and promiscuous voles are the neural models for healthy and asocial humans respectively. Ongoing clinical treatment trials with adults with autism at the Mount Sinai School of Medicine based on this model cite Young's lab's work extensively (Hollander, et al. 2003; Hollander, et al. 2006).

Conceptual Ambiguity and the Naturalization of Coupling

Biologists have studied mating strategies and family structures across species as a means of further elucidating the evolution of human relationships. The use of family models has naturalized both the idea of family and links between courtship, reproduction, and child-rearing (Hubbard 1990; Lloyd 1993). Humans are among a very small percentage of mammals described as monogamous. Throughout the 19th and most of the 20th century, science has used "monogamy" to describe some form of coupling, usually evidenced by bi-parental care, with presumed sexual exclusivity.[38] Scientists have argued that when and where there were more predators, "monogamy" was common among vulnerable animals because one parent needed to protect the young while the other collected food. With the emergence of DNA testing in the late 20th century, scientists discovered that the offspring these parents were feeding and protecting were often not genetically related to their fathers and that these fathers had genetic offspring elsewhere (Barash and Lipton 2001). Thus sexual and social monogamy became potentially distinct categories.

However, the concepts "sexual" and "social" are often used without clear definition. "Monogamy," unqualified, is now sometimes used to refer to "social monogamy" and sometimes to "sexual monogamy." Further, scientists use "social monogamy" interchangeably with the term "pair bonding." Young's laboratory uses

"monogamy," "social monogamy," and "pair bonding" interchangeably. Given this ambiguity, I will use the term "coupling" to mark my analysis of the ideal of "twoness" that I argue is being naturalized in their deployment of these terms. When referring directly to a specific experiment or publication, I will use whichever term the researcher uses.

Coupling remains central to scientific understandings of human evolutionary development. However, a cogent evolutionary explanation for the sexual fidelity with which it was once conflated no longer exists. Using DNA testing, scientists have found that among pair bonding species that were once assumed to be sexually monogamous, extra-pair copulation is widespread (Barash and Lipton 2001). Because sexual exclusivity is no longer essential to the definition of pair bonding and yet the two concepts are deeply enmeshed in the popular usage of "monogamy," the question of whether or not "the human" is biologically "monogamous" depends on which definition is being deployed. Some scientists say monogamy is not natural, but that we should still strive to be faithful to our mates:

> There is no question about monogamy's being natural. It isn't. But at the same time, there is no reason to conclude that adultery is unavoidable, or that it is good. 'Smallpox is natural,' wrote Ogden Nash. 'Vaccine ain't.' Animals, most likely, can't help "doing what comes naturally." But humans can. A strong case can even be made that we are never so human as when we behave contrary to our natural inclinations, those most in tune with our biological impulses. (Barash *Deflating the Myth*)

Here, David Barash, co-author with Judith Lipton of *The Myth of Monogamy: Fidelity and Infidelity in Animals and People* (2001), refutes accusations that their book promotes infidelity by calling the biological basis of monogamy into question. Barash refutes the idea that the unnaturalness of monogamy means humans should no longer aspire to it or

that we are doomed to fail at it. He argues that reason and morality are fundamental to human society, and that this trumps biology.

The research of Young's laboratory, however, realigns the morality and nature of monogamy by using "monogamy" to mean "social monogamy." His research abandons the language of adultery and sexual fidelity and instead uses the terms "monogamy," "social monogamy," and "pair bonding" interchangeably to refer to coupling. Within the laboratory and in interviews with the press, as well as in the *Nature* editorial I cite in my second epigraph, researchers working on genetic links to monogamy also refer to the concept of "love." Coupling is linked to love in this research through slippages between "monogamy" and "love." In some places, Young says the lab is breaking love down so that we can understand what it is and how it works (Young 2009). The lab asserts that "love" has an evolutionary purpose—it is what makes coupling rewarding; it has evolved in humans because coupling increases our offspring's chances of survival (Ahern and Young 2009). Elsewhere, Young says his lab is explaining what makes humans interact socially (Donaldson and Young 2008). Love is both monogamy itself—analogous to healthy social interaction—and vaguely referenced as a "mental state" that reinforces monogamous behaviors. This unfixed referent is a productive ambiguity for science. The invocation of "love," mysterious and ill-defined, plays an important part in the naturalization of coupling.

While the ambiguity of monogamy's meaning in general makes it possible to claim that monogamy either is or is not "natural" given the same findings, Young's lab claims that monogamy is natural. The use of monogamy, unqualified, to refer to coupling consolidates extra-pair copulation or sexual infidelity within the definition of

monogamy. Remembering the feminist critiques of monogamy I reviewed in Chapter One, we might recall that affairs are a constitutive part of the monogamy feminists have critiqued as compulsory (Robinson 1997, 151). Further, Young's lab invokes the concept of "love" in inconsistent ways, which serves to romanticize the monogamy they claim is evolutionarily natural for humans. Ultimately, they are naturalizing a romantic, companionate, but not necessarily sexually exclusive form of coupling.

The Monogamy Gene: a Gene for Mental Health?

In the first section, I argued that Young's lab's deployment of terminology contributes to their naturalization of coupling. In this section, I ask what he and his lab are actually saying about it. They are using monogamy as a neural model for psychiatric health. I argue that this model implicates the pathologization of non-monogamy within the production of normal and abnormal types I discussed in my literature review, what Nancy Stepan calls "the biosocial science of human variation" (Stepan 1996, 123).

The laboratory begins from the premise that humans are monogamous, which means that for humans as a species coupling is evolutionarily normal. Beginning from this claim, anything that cannot somehow be consolidated within the definition of monogamy can only be interpreted as pathology. As physician and philosopher Georges Canguilhem posits, the proposition of a normal physiology is utterly dependent upon the definition of the pathological (Canguilhem 1991). Without sickness or ill-functioning "systems," we could not describe what it means to be well or to be normal. The conflation of monogamy with healthy human development, both evolutionarily and psychiatrically, depends on the pathologization of its constitutive others.

While promiscuity and polygamy are the obvious evolutionary others to social and sexual monogamy, respectively, in Young's lab, monogamy also represents psychiatric normality. This is where sexual abnormality is implicitly linked with understandings of race. According to the evolutionary logic I described in Chapter One, the obviousness of the evolutionary superiority of monogamy seems to depend implicitly on the racialized pathologization of promiscuity (Klesse 2005) and polygamy (Burgett 2005). But the evolutionary superiority of coupling is just where Young's lab's research begins. The claim that the human is monogamous serves as the justification for the use of coupling as a model for healthy psychiatric development. In this research, coupling represents an advanced state of human development not only evolutionarily, but psychiatrically.

Reports of a monogamy gene are based on the following claim: a section of microsatellite or junk[39] DNA which is longer in some animals than others may correlate with social monogamy, or pair bonding (Hammock and Young 2005). Microsatellites are short sections of DNA with repeated sequences of base pairs. The variability in the number of these repeats is used as a molecular marker for genetic difference between individuals and in population and kinship genetics. These markers are also used to study larger evolutionary shifts (Martin and Hine 2004). Specifically, the lab argues that longer strands of this section of microsatellite DNA—that is, strands with greater repetition of these base pair sequences—correlate with monogamous behaviors (Hammock and Young 2005). The microsatellite DNA region is said to modulate another section of DNA—the V1a receptor gene—that codes for a protein that functions as a receptor for the hormone vasopressin (Hammock, et al. 2005; Lim, Hammock, and Young 2004; Lim and Young

2004).[40] The length of the microsatellite DNA is said to affect the distribution of vasopressin receptors in different regions of the brain, with the longer strands leading to expression of these receptors in the nucleus accumbens and ventral pallidum, closely connected regions of the brain associated with "reward" and often studied for their role in addiction (Hammock and Young 2005; Ross, et al. 2009).[41] The lab uses this "monogamy gene" as a model for the study of the social brain.

This is how the model works: 1) there is a variation in a section of microsatellite DNA, 2) that variation modulates a coding region of DNA, or "gene" that controls the production of hormone receptors in the brain, 3) the gene enables a neurochemical process with a behavioral outcome, 4) the behavioral outcomes of this neurochemical process are measured by a "partner preference" test (discussed in the next section) which identifies voles as monogamous or promiscuous, 5) the genetic commonality of these monogamous and promiscuous voles, respectively, is the basis for identifying them as two separate genetic types: normal and abnormal. Researchers in the lab alter the genetically non-monogamous types in a variety of ways to make them behave more like the genetically monogamous types. The ability to alter the neurochemical process that affects monogamous behavior and to make promiscuous voles monogamous is the basis for treatment of autism and other "asocial" behaviors. The diagram outlined in Figure One demonstrates the sequence on which this model is based:

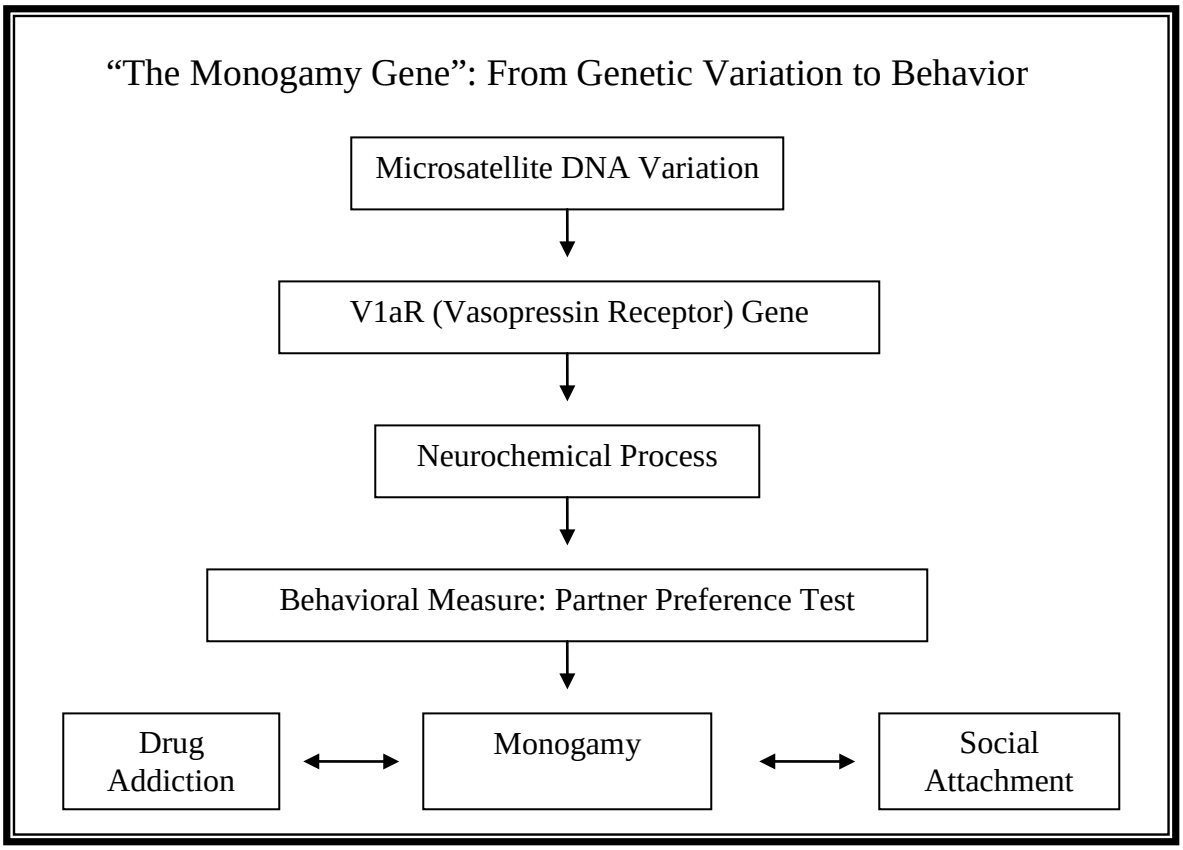

Figure 1.

The logic of the model is this: neurochemical processes are said to be more or less causally linked to behaviors. Or rather behaviors are said to be determined or influenced by neurochemical processes, which correspond with the variation of certain "genes." The neurochemical process I describe above links a "gene" to pair bond formation. Again, scientists have been able to isolate and describe this process by using prairie voles because they are described as behaviorally socially monogamous (McGraw and Young 2009). The genetic variation monogamous prairie voles possess causes the expression of vasopressin receptors in a region of the brain associated with "reward." So when a hormone that will bind with these receptors is released, whatever experience or behavior led to that release will be reinforced. Researchers speculate that coupling results in animals with this "gene" because a bond with a specific partner—what they sometimes

call “love”—triggers the release of such hormones every time a vole (or human) sees the partner with whom they have bonded. Young and his team argue that this neurochemical reward mechanism—the same genetic variation, hormones, and pathway—is also what allows humans to interact socially and form attachments in general (Donaldson and Young 2008; McGraw and Young 2009). Within this model, monogamy is compared to mental health and non-monogamy to autism.

Specifically, scientists use this genetic model to distinguish between “normal” prairie voles and promiscuous meadow voles, and then they tie that distinction to claims about asociality more generally. The promiscuous meadow vole, with its shorter strand of microsatellite DNA on average, does not form pair bonds (Hammock and Young 2005). Researchers then use the correlation of this genetic difference with monogamy in voles to model the assumed neurochemical deficit of people with autism. The inability (real or imagined) to fall in love and sustain a bond is effectively pathologized by this use of monogamy as a model for mental health. Conversely, autism is further pathologized by its association with promiscuity and failure to love. Both promiscuity and autism are conceptually defined as asocial.

When asked about the slippage between promiscuity and autism that happens in the translation from voles to humans, one of the researchers surmised that this parallel might sound odd to me because, as a non-scientist, I did not understand scientific proxy, which I have since learned is the basis of animal modeling for translational research. Proxy is the substitution of one behavior or problem for another in a scientific model. Research on genetic links to behaviors is based on the substitution of other behaviors as models for difficult or impossible to measure ones (Hernandez and Blazer 2006).

Translational research is research considered directly relevant to humans, as opposed to "basic research" which may have long term potential to *become* clinically relevant, but has no direct or immediate relevance to humans. Human brains and livers cannot be extracted for experimentation, and autism is a human concept—hence the need for an animal model. The failure to pair bond is the behavioral proxy for the lab's interpretation of autism as social deficit (Lim, Bielsky, and Young 2005; McGraw and Young 2009). Monogamy is the proxy for mental health based on the lab's interpretation of coupling as fundamental to human-ness (McGraw and Young 2009). Promiscuity is understood as evolutionarily normal and appropriate for the meadow vole but serves as the model for something abnormal and "wrong" in humans.

The assumption that links healthy development to monogamy is more formally institutionalized through the Vole Genomics Initiative, of which Young's lab is a sponsor. The Vole Genomics Initiative is a community of researchers and laboratories that have mobilized to petition the National Human Genome Research Institute (NHGRI) to map the prairie vole genome so that researchers can use the prairie vole more widely as a model for translational research. In her study of the standardization of animals for experimentation in the first half of the 20th century, Karen Rader emphasizes how assumptions about particular animals and their likeness to humans inform their use as models in a given socio-historical context (Rader 2004). One salient feature that distinguishes the prairie vole from rats and mice is that prairie voles are monogamous: that is, they form pair bonds. The rationale for mapping the prairie vole genome is that *due to its socially monogamous nature*, "the prairie vole (*Microtus Ochrogaster*) has emerged as one of the preeminent animal models for elucidating the genetic and

neurobiological mechanisms governing complex social behavior" (http://research.yerkes.emory.edu/Young/volegenome.html). In 2009, the initiative was successful, and the prairie vole was added to the NHGRI list of approved sequencing targets. If prairie voles are thought to create a better proxy for the human in a state of health than mice because they are monogamous, the move to using prairie voles as models for human behaviors marks an emerging understanding about coupling as somehow integral to healthy human-ness. This emerging shift makes vole research significant far beyond its role in one particular Emory lab.

Partner Preference and the Sexualization of Bonding

In the first section, I showed that Young's laboratory's deployment of "monogamy" naturalizes coupling and reinforces compulsory monogamy. In the second section I showed how their naturalization of coupling depends upon the pathologization of non-monogamy and autism. In this section, I go into the laboratory to ask how what they call monogamy, social monogamy, pair bonding, and sometimes love is actually measured. As mentioned in Chapter One, a major feminist critique of science has been the invisibility of its methods (Birke 1999). This lack of transparency with regard to methods promotes the myth that science exists as "something other than the activities of scientists" (Hubbard 1990). Further, and as explained in Chapter One, a major critique of feminism—including its critiques of science—has been its unwillingness to engage "biology" (Davis 2009). Given these critiques, I sought to engage both the apparatus of measurement and the "biological" behavior being measured in the lab. Here, I offer a reading of the behavioral test used to measure monogamy—the partner preference test—and the physiological explanations offered to explain both the experimental design and its

outcomes. I argue that assumptions about sexuality embedded in the partner preference test naturalize the coupling that we know, but a closer look at what is being measured suggests that sexuality is an interpretive frame imposed on pair bonding behaviors.

Although I had read most of the lab's published work over several years and dozens of popular press articles on the topic, I had somehow imagined voles in the "wild," nature documentary or children's book style—some living like Beatrix Potter's characters in loving families, others running about doing lord-knows-what, without jackets and mittens. Illustrations like the one below from a report on Young's lab's research in *LiveScience*, an online science news magazine and search engine, both reflect the pervasiveness of and perpetuate this kind of anthropomorphic imagery.

[Figure removed due to copyright. See image at: http://www.livescience.com/imageoftheday/siod_050615.html]

Figure 2.

The image depicts two voles. The monogamous one, on the right, with the longer strand of microsatellite DNA, is shown "indoors" caring for his young. The vole with the shorter strand, on the left, is shown outdoors with his nose up ostensibly to catch the scent of potential sexual partners. The anthropomorphic imagery obscures our understanding of how translations between human and animal behavior are made.

The genetic findings represented in such images are the results of experiments based on the use of voles as animal models for human differences. An "animal model" means that animals who are held and most often (in the case of Young's lab, always) bred in captivity are physically manipulated (e.g. gene manipulation, drug injections, cutting

out parts of their brains, breeding, rearing in isolation) in a way that causes the animals to exhibit a set of symptoms or behaviors that are associated with a human disease or disorder. This means the animals may be administered a drug or bred transgenically (with genetic material from another species) or otherwise altered in some way that causes them to behave in a way that scientists observing them can recognize or interpret as similar to ways in which humans might behave in a given circumstance – the behavior of the animal then serves as a proxy for the human behavior in question. Scientists then figure out how to standardize that effect and further manipulate the subjects to try to alter the behavior or "treat" the "symptom." This is how translational research works. In Young's lab, researchers use what they deem non-monogamous or promiscuous behaviors as markers of "asocial" conditions like autism and drug addiction (Lim, et al. 2004). Pair bond formation is the desired, healthy change they aim to reproduce (Bielsky, et al. 2005; Pitkow, et al. 2001).

The set of symptoms or behaviors scientists aim to change or achieve are identified by having the animals perform "tests" which can be quantified. The test for measuring "monogamy" is called the "partner preference test." In the partner preference test, researchers place a male animal[42] in a cage with a female animal, usually for 18-24 hours. In this time, they are expected to mate—that is to have "sex," which means vaginal intercourse here. This is key, because in the test, mating and pair bonding are causally linked. "Mating," or sex, is the stimulus that causes the hormones oxytocin or vasopressin to be released. These hormones will bind with the receptors in the reward centers of the brains of the voles with the genetic variation said to control monogamy

(Hammock and Young 2005). If they are genetically monogamous, the voles will form a pair bond after mating. If they are not, they will fail to form a pair bond.

After the original pair has presumably mated, a second unfamiliar female is placed in the cage and the two females are separated by being "tethered" or tied to different sides of the cage. The female with whom the male is assumed to have mated is called the "partner," while the unfamiliar female is called the "stranger." The male is free to move throughout the three chambers of the cage. This set-up is illustrated below in image A below (Figure 3).

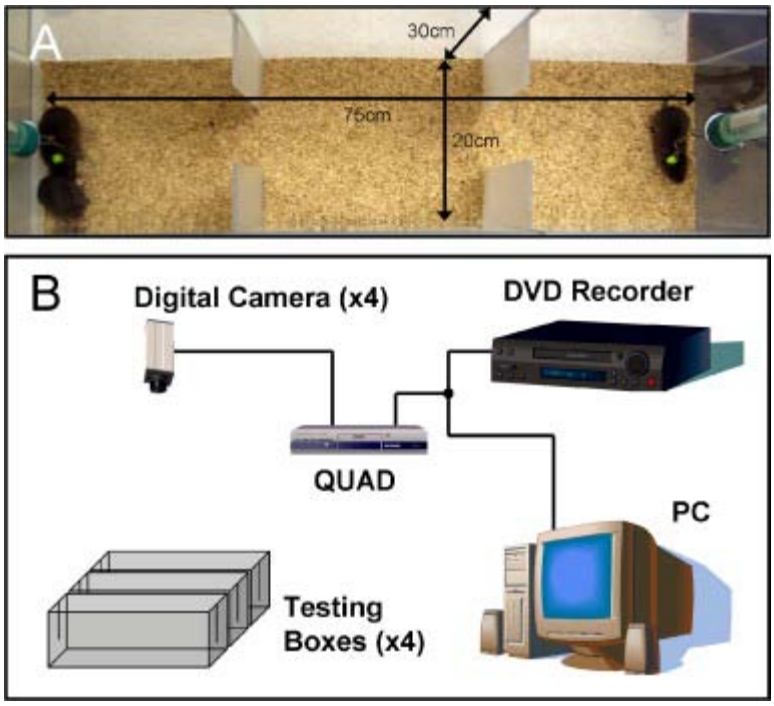

Figure 3.

The activity in the cage is recorded both by software that tracks the movement of microchips in the "collars" of the three voles and by motion-sensing video cameras (See B in Figure 3 above). Later, a researcher will check the software and/or watch the footage and count the number of minutes that the male animal spends with each female.

If the male spends more than 1/3 of the time with the "familiar" female, then the animal is said to show a partner preference and thus to be "monogamous."

After an analogue of the pathologized behavior has been effectively reproduced in a test animal, the model is then used to find potential ways to treat the human disease or disorder by treating the animal with drugs or gene therapies and using the same tests to look for changes in symptoms or behaviors. Changing the genetic make-up of an animal can alter the neurochemical process. A drug interferes with that process to change the behavioral outcome. In the case of Young's lab, an animal who does not show a partner preference will be treated with a drug—usually oxytocin—and then put through the partner preference test once again. If an animal that did not show a partner preference initially does show a partner preference after treatment, the researchers conclude that whatever has altered the neurochemistry and thus led to the behavioral change has potential as a treatment for "asocial" human behaviors. The administration of oxytocin injections has been shown to increase partner preference. It is on this basis that oxytocin is being used in clinical trials to treat autism (Hollander, et al. 2003; 2006).

I entered the lab in December of 2007 with the general sense that biologizing explanations for sexual behavior were always necessarily reductive, unable to account for the complex nature of human sexuality. As for the monogamy gene research, I was concerned about the use of language—the projection of human categories onto animal behavior, such that assumptions about those categories would in a circular fashion be "proven" by science. Specifically, I questioned the application of the word "monogamy"—whose etymology links it to marriage—to describe the pairing off of

animals, who do not marry. I did not question that the animals somehow coupled. In April of 2008, I was finally invited into the animal lab to observe the behavioral piece of this research.[43]

I fully expected that I would see what the researchers saw – something roughly translatable to "love." Early in the day, I watched several minutes of video footage on a computer with the researcher, "A" who invited me to observe the partner preference test. The animals appear in the software version of the mapping as blobs (See Figure 4). Two blobs are on one side, the other is alone on the other side. Sometimes two blobs would become one bigger blob. In the video, taken from a birds-eye view distant enough to capture a dozen cages, their actions were similarly obscured. The image below from a paper published by Todd Ahern of Young's lab shows the various versions.

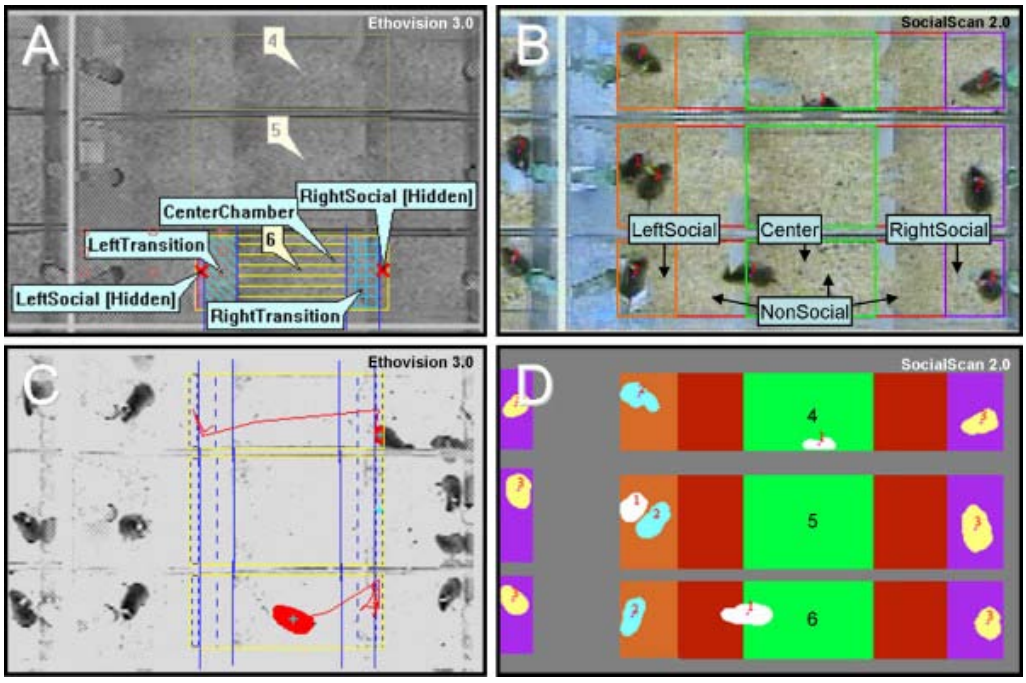

Figure 4.

In these images and elsewhere in the footage the free vole appears occasionally to be on top of or touching one of the tethered voles, as on the left side of the middle cages in

images C and D. To maintain neutrality in the reading of their behavior, the observer does not know which is the partner and which is the stranger vole (note the neutral labeling of “left” and “right” in Figures A and B above). The experiment is about counting, plain and simple. Who does the free vole spend more time with—the tethered vole on the right or left?

The images present a different picture than what I saw in the lab itself. What I observed in real time, in the actual lab, was a rectangular cage with two voles “tethered” at either end and a free one running back and forth. The collars are zip ties, closed tightly around their necks. They have to be tight, because a vole doesn’t have much for a neck. The leashes with which they are tethered are short, lightweight chains, resembling pieces of a cheap necklace. The leashes are attached to the cage well above the vole’s head, providing very little leeway—if the vole takes more than one step it ends up on its hind legs. The free vole’s head is fitted with a plastic shunt, which is inserted through the top of the skull into the brain so that the drug that may or may not encourage bonding can easily be administered. The plastic has a hole in the top for a needle and sticks up about half an inch on the top of the vole’s head, so that it appears to be wearing a strange little plastic top hat. The hat struck me as a darker rendition of the Beatrix Potter imagery that had secretly filled my head in the days I anticipated the experiment. In my notes, I referred to the voles as tethered and free, to the tie as a collar and to the shunt as a hat.

“A” left me alone in the room with the cages, as no one else could bear the tedium of watching the voles in real time. The researchers make their observations from the video and software recordings, because they can be fast-forwarded, and the counting happens much faster. “A” instructed me to stand very still so as not to trigger the motion-

sensing video equipment as I prepared to watch twelve cages of three voles each—two tethered and one wearing a hat—play out the script I already knew well from the lab's publications. Some pairs I was sure I would be able to identify as "partners." I focused my concentration on trying to pair them, holding my notebook close, ready to jot down the cage number and "left" or "right." I had problematized the lab's choice of "huddling," a word that rhymes with and means essentially "cuddling," to describe their closeness, and I wanted to see it for myself, to try to think of a more mundane, descriptive, less anthropomorphic way of describing their interactions.

I saw free voles approaching tethered voles and chewing hard on their collars, pushing their paws against the other's face and pulling it with their teeth. I saw free voles climb on top of tethered voles and yank at the leash with their teeth, find the point of its attachment to the cage and shake it, pull it, bite it, or balance carefully on top of it, using it as a step to try to reach the top. I also saw tethered voles chew and pull on the hats of free voles, seemingly trying to remove them. Sometimes a free vole would sit alone scratching at its head, trying to reach the hat. In the forty-five minutes or so that I watched the voles, no one settled down enough for a "huddle." There was a great deal of movement back and forth. Some free voles may well have spent more time in the same chamber with one tethered vole than the other, but this was in no way clear from my observations of any of the cages.[44]

After the experiment I asked "A" if they were trying to escape. "Oh yeah," she said, "and they're really smart." It seems the lab has spent a lot of money on cage design and newer, taller, more secure cages to keep the voles in. They do get out, from time to time, it seems, but they do not get far. I asked "A" if she thought they were scared. She

replied that they probably were, since they do bite. She assured me that you get over thinking they are cute really quickly, because of the biting and because most people are allergic to them. I observed aloud that they seem to be trying to take off the collars and the plastic thing—the shunt. This, she told me, is true—they do not like any foreign objects. In nature, they would help each other groom and try to remove anything stuck in their fur or trapping them. This idea of solidarity against experimenters—in the form of cooperative escape and removal of the foreign objects of experimentation—might well be thematized as evidence of some form of social attachment, but the link to coupling was unclear to me.

Again, the partner preference test is the quantifiable measure of "monogamy." Monogamy/love/pair bonding—coupling—is supposed to be the model for healthy social attachment (Hammock and Young 2005; McGraw and Young 2009). After observing the test, I wondered how the lab distinguishes between coupling and social attachment in general and how the social relationships the voles formed were being interpreted as monogamy. The answer lays not in "love," but rather in another aspect of compulsory monogamy—sex. A monogamous relationship may not be sexually exclusive, but it is always sexual. What makes voles who show a partner preference "monogamous" rather than "social"—good at recognizing and responding to familiar faces and smells—is that they are presumed to have mated.

Mating is what researchers claim sets off the neurochemical chain of events that leads to coupling in animals with the right genetic variation—that is, in monogamous individuals and species. If my observations of the test raise questions about this distinction, researchers' explanations of the heterosexual assumptions embedded in the

partner preference proxy render it even more curious. I asked each of my interviewees whether or not two females or two males could form pair bonds. "A" said that in theory any two animals could, and that bonding is not necessarily about sex per se. Sex (vagino-cervical stimulation) can speed up the process, and though it is the marker they use, it is certainly not the only thing that causes oxytocin to be released. This makes sense, as "A's" project is the only one in the lab specifically focused on autism—social interaction in general is not linked to sex. The analogy to autism suggests that a person should also recognize people they have not had sex with. If someone is more likely to form an attachment to a mate they are *also* more likely to have "normal" social interactions, because oxytocin acts on the reward centers in the brain in both cases.

The first time I talked to the researcher I will call "B," who studies vasopressin receptors, she explained to me that same sex pair bonds do not exist, because two males or two females cannot have sex. When we talked a few months later in a more formal interview setting, her reply was a bit more nuanced:

> So it gets a little bit tricky when you start thinking about it, but basically what you're asking is if they have a preference for another individual. There are a multitude of ways to get a preference. One- long term cohabitation, one- mating (we think of as speeding up the process), one- to get drugs like M. is doing (speeding up the natural process of things). There has not been a lot of work done on it, there is no reason not to look at it, it gets a little bit difficult because you're making claims about same sex partner preference and *if there's no mating involved then the link to human biology becomes difficult to understand*. Are they friends, are they partners – this is how a journalist would probably approach it. ("B," emphasis mine)

"B's" explanation points to a larger assumption in biomedical research on monogamy: bonding can be triggered by cohabitation, but mating is the proxy because mating provides the link to human biology. Scientists understand the role of mating in human biology on the basis of the assumption that humans function with the aim of reproducing

their own genetic material motivating us on a molecular level. That is, as I explained in Chapter One, scientists understand human nature as most fundamentally reproductive (Lloyd 1993). The assumption that humans are essentially reproductive is the reason the lab uses mating as the proxy for bonding. They justify using it in turn by finding that mating is in fact the basis of pair bonding. If cohabitation, or long-term contact, were the proxy, then the importance of sex—at least the special role of sex—in pair bonding in particular and social behavior in general would be unclear. According to "B's" analysis, the link between social behavior and human biology might be dangerously destabilized.

"B's" response is not anomalous, but rather reflects foundational assumptions of the laboratory and of biomedical research on monogamy in general—coupling is always already sexual. If it is not, it is not coupling. This is reflected in Young's response to my queries about same-sex pair bonds:

> We haven't done it [tested for same-sex pair bonds]. I believe we would not have male-male pair bonds, because they would fight. Female-female pair bonds, I think there is a paper out there that does, but questions then become: *is this really a pair bond*, and *how is a pair bond different from other kind of relationships*?...If you put two females together, then test them, I think under certain conditions you would get that females prefer their familiar partner. *Then what kind of relationship is that?* Lesbian? Not necessarily lesbian. Doesn't have to have sexual component. But think of a female-female relationship as a friend, *you would expect the same thing*. (Young, emphasis mine)

Here Young hints at the different evolutionary explanations for male and female pair bonding. While scientists presume females want a mate to help protect their young, they presume males are motivated to couple because they are territorial, which makes them naturally aggressive toward other males. This is the logic that makes the idea of a male-male pair bond unintelligible evolutionarily speaking. While female-female bonds are not impossible to imagine, Young asserts, we would be amiss to think of them as pair

bonds, rather than friendships, because they would not be sexual in nature. Sex makes it monogamy.

If we should expect the same sort of attachment to form between friends as between lovers of the same sex, the same it seems would be true of opposite sex pairs. To establish the "familiarity" of the partnered voles, a male and female vole are placed alone together for 18-24 hours. This gives them enough time to have mated, but it does not insure that they have mated. Still, if the test subject shows a preference for the familiar partner over the stranger, we do not need to ask "what kind of bond is that?" The assumption that the animals are male and female[45] precipitates the assumption that they have mated, which precipitates the assumption that they are a pair, a couple. The confusion that troubles attempts to imagine how we might conceptualize same-sex bonds in no way upsets researchers' understandings of opposite sex bonds as always already sexual.

In "Animal Models for the Development of Human Sexuality: A Critical Evaluation" (1995), Anne Fausto-Sterling argues that our frameworks for understanding sexuality are inadequate even for rodents, because they persistently ignore the capacity of animals (human and non-human) to learn from their experiences (Fausto-Sterling 1995, 12-13). Despite evidence that the voles learned to cooperate—which served as evidence of their pair bond—without having sex, Young's laboratory's research is characterized by an insistence on the innateness of sexuality and its centrality to human health. The "dogged pursuit" (Emens 2004, 297) of explanations for human behavior that naturalize monogamy seems influenced not only by a romantic ideal of coupling, but by this idea of sexual instinct. Despite evidence that sex is inessential to the formation of pair bonds, it

remains central to the definition of monogamy. And monogamy remains categorically important, because it is sexual, and sex provides "the link to human biology." The scientific naturalization of monogamy in this laboratory not only reinforces the "twoness" requirement for relationships, but also the idea that the human is fundamentally sexual.

The pathologization of autism, as the flip side of this model that has "proven" the naturalness of pair bonding, thus seems to be caught up in fears not just of *asociality*, but of *asexuality*. The naturalization of monogamy depends not only on the specter of sexual excess, but also on the pathologization of its lack. The special status of coupling depends not only on distinguishing it from casual or uncoupled sex, but also from friendship.

If the scientific naturalization of monogamy depends upon assumptions about sexuality as instinct, so too does the naturalization of non-monogamy in polyamory literature, to which I turn in the next chapter.

Chapter Three

Against Compulsory Monogamy:
The Naturalization of Non-Monogamy in Woman-Centered Polyamory Literature

> For psychologists and evolutionary biologists, polyamory is a rare opportunity to see, out in the open, what happens when people stop suppressing their desire for multiple partners and embrace non-monogamy.
> -Newitz[46]

> How does the current effort to re-biologize sexual orientation…reflect or influence existing cultural anxieties and desires about racialized bodies?
> -Somerville[47]

If the scientific naturalization of monogamy is heir to a history that produced sexuality as innate, so too is the naturalizing rhetoric of polyamory, as my first epigraph suggests. The naturalization of non-monogamy in poly literature mirrors the scientific naturalization of monogamy in that it also relies on an evolutionary logic, described in Chapter One, that conflates difference with development. If Young's lab posits that we have evolved to monogamy, poly literature romanticizes an image of a pre-monogamy state of evolutionary development as more natural. Following Sommerville's insights into the links between sexuality and racialization in the second epigraph, I will discuss racialized rhetoric as a primary mode through which non-monogamy is naturalized in polyamory literature.

The displacement of claims that non-monogamy is deviant and unacceptable through the celebration of its naturalness is a familiar theme in poly literature. In this formulation, it is not non-monogamy, but rather monogamy that is a perversion of nature. Either way, nature is accorded a privileged status in determining what is right. In light of the racial history of naturalizing explanations for human sexuality, I consider some of the

risks of this rhetorically powerful discourse. First, I will frame my reading with a selective history of the intersection of sexuality and race in "the biosocial science of human variation" (Stepan 1996, 123). Following Ladelle McWhorter, I use this history to analyze the intersection of sexuality and race in contemporary discourse (2004). In the second part of this chapter I read two women-centered polyamory collections for naturalizing rhetoric, alert to racial resonances.

Race and the history of sexuality

Around the question of sexuality, an ever-growing body of literature has elaborated differences in the way assumptions about sexuality impact people across race and ethnicity, gender, ability, and sexual orientation. Here I am interested in the ways in which understandings of sexuality are racially gendered (McClintock 1995; Spelman 1988). For example, while white masculinity is often taken as the embodiment of normative, healthy sexuality, black masculinity signals an excess of desire, a dangerous sexuality (Davis 1983). Many institutions—formal education, media, the state—and cultural forces more generally reinforce racialized stereotypes about sexuality and perpetuate their impact on people's lives. My concern here is with the links between race, gender, and sexuality in naturalizing polyamory rhetoric.

The coincidence of black slavery in European colonies and North America with the formation of biological science led to the emergence of a science of racial difference which, through an analogizing logic, became deeply enmeshed with the science of sexual difference (McWhorter 2009). The specific racial and sexual categorizations that continue by and large to inform our understandings of these sexual and racial differences—black/white, homo/hetero—emerged coterminously in the 19th and early

20th centuries. Through analogy with one another, they gained evolutionary significance vis-à-vis one another. In a society that relied heavily upon gender differentiated roles, sexual differentiation became a primary marker of evolutionary superiority (Schiebinger 1993; Stepan 1996; McWhorter 2004; 2009). That is, the more "different" "male" and "female" bodies of a given race (or species) were thought to be, the more evolved they were imagined to be. Thus a lesser status evolutionarily—quite literally the status of "less human"—was ascribed to what were said to be "masculinized," "feminized," or otherwise "ambiguous" "sexes."

This evolutionary argument produced a wide array of overlapping categories of inferior types. The formulation has obvious implications for bodies which appeared to be literally "ambiguous," intersex bodies (Dreger 1998). It also placed "perverts" and "lesser races" lower on the evolutionary ladder. The inability of science and medicine to reconcile gender presentation or sexual desire or practice with assigned sex has led to the designation of various "types"—gay men and lesbians, trans folks—as spiritually or emotionally one sex and physiological "the other," as "psychosexual hermaphrodites" (Doan and Waters 1998; Foucault 1980; Prosser 1998). Perceived similarities between women of "higher races" and men of "lower races" were evoked to such an extent in the 19th century that race *became* gendered and gender raced in scientific discourse. With perceptions of European whiteness as the normalizing referent, Black women and men were represented as more masculine and thus hyper-sexualized,[48] while "native" men and women were seen as feminine, and often desexualized[49] (Schiebinger 1993).

Despite the familiarity of these formulations, scientific racism is often imagined to have disintegrated after World War II, culminating in the 1952 UNESCO Statement on

Race (Stepan 1982), which declared that race was not in fact biological. Some have provided more skeptical readings of the symbolism and content of the document and of the moment and context out of which it emerged (Hammonds 1997; Rabinow and Rose 2006; Reardon 2004). Jennifer Reardon argues that rather than taking such declarations as truths which represent the freeing of science from racial ideology, we should read all scientific pronouncements as Foucaldian "statements" that only make sense or gain support if they function within the moral, political, economic, and epistemological frames of the dominant society. So as "statements" about the nature of difference continue to emerge, we should read them as deeply imbedded in the racial and gendered politics of the moment.

Through their shared reliance on the idea of an original sexuality—wild and either dangerously untamed or gloriously unencumbered by "civilizing" influences—evolutionary and psychoanalytic "statements" are implicated in the naturalization of non-monogamy in polyamory literature. The claim—oft made in poly literature—that a place or persons are "primitive" evokes The Great Chain of Being (Stepan 1982, 6-9) which, with European whiteness at its apex, places people on a continuum beginning with primates (Schiebinger 1993). The valorization or romanticization of a state of simpler or more childlike (polymorphous) sexuality merely inverts the value accorded sexual expressions that are already coded as civilized and uncivilized, evolutionarily superior and inferior. These values are, in other words, already racialized.

Race in Naturalizing Polyamory Discourse

Now I turn my attention to the naturalization of non-monogamy in polyamory discourse. I offer readings of selections from two poly readers to illustrate the racial

resonances of their naturalizing claims. I chose *Plural Loves: Designs for Bi and Poly Living* (2004), edited by feminist scholar and poly activist Serina Anderlini-D'Onofrio, and *The Lesbian Polyamory Reader* (2009), edited by Marcia Munson and Judith Stelboum. I chose these two texts because they are woman-centered and more explicitly feminist than many of their counterparts. They are also queer or, rather, not heterosexually oriented. As queer feminist challenges to the naturalness of monogamy, these two texts function in the interstices where I see myself engaging in a productive reimagining of monogamy-centric culture.[50] Both *The Lesbian Polyamory Reader* and *Plural Loves* encode an explicit set of assumptions about the naturalness of non-monogamy. The naturalizing rhetoric they deploy evokes a racial economy grounded in 19th-century evolutionary theory with powerful resonances in *this* historical moment.

I begin with *The Lesbian Polyamory Reader* (1999) to discuss an array of types of naturalizing claims made in the text as well as its structure and use of images. Many feminist poly author/activists casually suggest or reference the naturalness of non-monogamy in familiar expressions about particular groups, the universal desirability of non-monogamy, and/or the innate proclivity of individuals to non-monogamy. Nannette Gartrell explains how she and her partner came to the decision to become polyamorous: "It seemed unlikely that we would be more successful at suppressing inopportune lust than countless other lesbians who had tried and failed to do so" (Gartrell 1999, 26). Similarly, JoAnn Loulan asserts that "the basic principle [underlying polyamory] is that sexual feelings are part of our lives from birth to death," (Loulan 1999, 37) and Lana Tibbets, though not in this volume, offers that "one could argue that non-monogamy is no more a choice than sexual orientation" (Tibbets 2001, 8).

Claims about the naturalness of non-monogamy in terms of drives or, more generally, as an inherently and universally desirable way of relating, being, or living, at least potentially reinforces the notion of sexuality as natural and inevitable. In her section on "Intimacy," Anne Dal Vera makes both types of claims. Her use of a quote from Terry Tempest Williams is useful for understanding how:

> [W]hat kind of impoverishment is this to withhold emotion, *to restrain our passionate nature in the face of a generous life just to appease our fears*? A man or woman whose mind reigns in the heart when the body sings desperately for connection can only expect more *isolation and ecological disease*. Our lack of intimacy with each other is in direct proportion to our lack of intimacy with the land. We have taken our love inside and *abandoned the wild* (quoted in Dal Vera 1999, 19, my emphasis)

In this account, not only does the body naturally "sing out," it does so in its own best interests. To suppress or deny desire is to be untrue to one's self. It is true that "[c]ritics of monogamy often found their arguments on the assumption of the power of underlying sexual drives, which people repress only to their detriment, or even which they are unable to repress at all" (Overall 1998,14). However, repressing those drives is not, for Dal Vera, only to one's own detriment, but also to that of "the land." In this formulation, we have a moral responsibility, psychic *and* ecological, to return to the passionate nature that we have abandoned by fearfully taking refuge in monogamy. While ostensibly race neutral, these claims about the naturalness of non-monogamy, especially in terms of irrepressible drives, evoke a racial economy present in the 19th century, as discussed in Chapter One, and alive and well in contemporary culture (Collins 2000; Hammonds 1997; 2001).

Two photographs from the reader offer examples of how this return to "wild connections" between women is racialized (see Figures 5 and 6). As it turns out, this

fantasy return to a time before monogamy resembles something out of *National Geographic*. In "Naked, Neutered, or Noble: The Black Female Body in America and the Problem of Photographic History," (2002) Carla Williams describes the origins of the "National Geographic aesthetic" which introduced black women's bodies in a "primitive style" nudity.

[Figure removed due to copyright.
See image in Munson and Stelboum (1999, 123).]

Figure 5. *May Day Celebration*

[Figure removed due to copyright.
See image in Munson and Stelboum (1999, 124).]

Figure 6. *Festival Showers*

The photos entitled "Festival Showers" and "May Day Celebration" are of nude women outdoors. They are excellent examples of the racialized aesthetic Williams describes in that both appear to have been taken by an outside observer and rely on an ethnographic model for their effect (Williams 2002). Most importantly, they rely on some idealized notion of a simple, pure, and sexually uninhibited primitivism to impart their meaning (i.e. that non-monogamy is natural). The way the photographs are presented in the text is as interesting as how they are framed. These first two photos are printed in the same section, entitled "Living the Dream." This section is the only place in the book where photographs of black women appear.

The two photos in the section entitled “Friends and Lovers”—“the three of cups” and “healing hands” (See Figures 7 and 8)—present a very different sort of narrative.

[Figure removed due to copyright.
See image in Munson and Stelboum (1999, 70).]

Figure 7. *Healing Hands*

[Figure removed due to copyright.
See image in Munson and Stelboum (1999, 69).]

Figure 8. *Three of Cups*

These photos of women massaging each other and posing in a garden have the appearance of intimacy and represent a domesticity in stark contrast to the tone of the earlier photos. While the first pair highlights ritual and sexual freedom, the second draws on the stability and comfort of the promise of intimate friendship. The use of black bodies and a racialized aesthetic to illustrate the naturalness of non-monogamy in these passages signals naturalizing poly discourse as a site of tensions around race in ways that I will elaborate in my reading of *Plural Loves*.

Plural Loves announces the advent of a new polyamory more attentive to gender and “sexual-orientation” than many of its predecessors (Anderlini-D’Onofrio 2004, 3). In the introduction Anderlini-D’Onofrio states that this sort of polyamorous thinking has, since the 1980s, shared with bisexuality “an interest for pre-modern and ‘primitive’ social organizations where the homo/hetero divide is not enforced” (3). She goes on to argue that in primitive societies “erotic love is often part of a pantheistic concept of the sacred

which calls for a gentler, contemplative, more 'feminine' relationship with nature" (3). Not only do these passages mark the text as a feminist undertaking, they link its gender-awareness explicitly to the notion of a utopian *before*. Before patriarchy, monotheism, modernization, and in the case of Deborah Anapol's essay in the same volume, colonization, so the story goes, there was a simpler world, one in which sexuality wasn't fraught with the restrictions that limit "us," here and now. I use the language of "us" and "them" to draw attention to a narrative formulation evoked in the passages I read, one which while using the other to make claims about the naturalness of non-monogamy, continually situates the presumed poly reader as implicitly white and Anglo-American (Noël 2006).[51]

The mythic them, there and then, before or outside of compulsory monogamy is a favorite trope of poly fiction and non-fiction alike. It is of course very powerful to point out that values like monogamy are culturally and historically contingent. The specific power of this strategy often rests at least in part on the racial resonances of this truth claim. In a white supremacist culture where racism is deeply sexualized, it is not difficult for "us" to buy that, for example, pre-colonization Hawaii (Anapol) and "Africa" (Anderlini-D'Onofrio) were and are sexually more "free" than "we" imagine ourselves to be. Saying that "we" want to be more like "them" (and/or "then" as the case may be) further legitimates highly contested scientific and anthropological constructions of otherness that posit the popular notions of primitive sexuality with which we have become familiar. Whether we look with feelings of disgust or longing, if we are reading these racial constructions as unproblematically "true," something is wrong. When we rearticulate it as utopian, it has the same racial resonances.

Merl Storr's (1997) analysis of universalizing claims around bisexuality helps to illustrate this point. As the ground of enlightened bisexuality is the place where *Plural Loves* opens, Storr's critique of universalizing discourse on bisexuality warrants review here. Storr argues that claims about the naturalness of bisexuality, as we now understand it—as desire for both men and women—reflect and reinforce the historical racialization of bodies. Storr makes her argument by tracing a genealogy of bisexuality's meanings. Sexologists explained bisexuality as the existence of characteristics of "both sexes" in one body, usually in terms of secondary sex characteristics. Bisexual bodies—what we would now call intersex bodies—were thus not wholly or acceptably male or female. As sexual differentiation was widely understood to correlate with evolutionary development, "bisexuals" were less fully evolved, more "primitive" as it were. Claims of bisexuality as universally natural today (i.e. "everyone is 'really' bisexual"), Storr explains, necessarily play on this notion of a primitive sexuality (Storr 1997, 85). They "make sense" in part because of the racialized imaginary of primitive sexuality that is so familiar in Anglo-American cultures (Storr 1997; McWhorter 2009).

In psychoanalytic discourse too "bisexuality" is the "original" state of both girls and boys, during the stage of phallic masturbation (Freud 1962, 7). Having been seen historically as an immature, transitional, or underdeveloped sexuality or as a primitive, less evolved state of being, "bisexuality"—and here its relation to claims about polyamory—carries the baggage of a fraught history in the biosocial science of human variation. As Anderlini-D'Onofrio suggests, polyamory has its own investments in "primitive" cultures and sexualities. I will go on to explore these in more detail, with the

assumption that where the idea of primitive sexuality is evoked, it carries racial resonances.

I will look closely at one non-fiction essay and one short story from the collection to illustrate my concerns. While much can certainly be said of the value of these works, I am reading here for their racial resonances and will confine my analysis to those themes which are illustrative of the discourses I have described. I will begin with Deborah Taj Anapol's "A Glimpse of Harmony" and move on to discuss Taliesin the Bard's fictional "Just Like a Hollywood Movie."

Anapol's "A Glimpse of Harmony" posits pre-colonization Hawaii as a poly utopia of sorts. Based on her research, the language, child-rearing practices and variety of accepted relationship formations in pre-European contact Hawaii all suggest a harmoniously "sex-positive" culture. She contrasts this culture with the "sex negative" culture of the US, which she argues mandates monogamy, ignores or punishes the sexuality of children, and is generally repressive. At first glance, her characterization of the US seems fair enough and her description of particular practices, like the existence of a word—punalua—to describe one's relationship to their partner's exes, seem to offer exciting alternative models of kinship. I want to address two problems with her argument—first, her deployment of the concept of "culture" and, second, the role of "the Feminine" in her analysis.

First, I want to suggest that enough context is missing from her portrait of "old Hawaii" to make her romantic conclusions about its sexual harmony suspect. The out-of-context retrieval of particular concepts or practices is an exoticizing move that makes her point at the expense of a nuanced understanding of a culture that we might fairly assume

was complex: that is, not monolithic, but rather full of internal contradiction, like our own (Narayan 1997; Volpp 1996). Questioning the deployment of the notion of "culture" here, good and bad, sex positive and sex negative cultures as it were, pushes us to ask not only what Hawaii is Anapol talking about, but what US? The norms she describes as characteristic of sex negative US culture are coded in terms of race and class. For example, cooperative child-rearing and valued intergenerational relationships are not uncommon in US families outside the white middle class (Taylor 1990, 997). Lesbian kinship in the US has also been read as a model of adopting exes into one's family that challenges heteronormative patterns of relating (Weston 1998). Notably, the existence of practices that Anapol considers "sex-positive" within the US has not made bisexuality *or* polyamory harmoniously mundane. As for the loving grooming of children for adult sexuality that she describes—like genital massage and rituals acknowledging changes in adolescent bodies—it is unclear when and where and by whom these rites were practiced or what they might have meant to their practitioners. It is also unclear how they might be interpreted as challenging heterosexual or monogamous expectations for adult sexuality.

The premise upon which Anapol's explanation for the culture of old Hawaii relies is my second major concern, though it is perhaps better read as a symptom of the first. The reason for the radical openness of old Hawaii, she argues, is the Feminine, for which the Hawaiian Islands are apparently well known. The Feminine is both geographical and cultural in her argument and the link between them is important. Geographically speaking, all the features of the climate "combine their power with the land, to create a sensual, even erotic atmosphere. An atmosphere favoring relaxation and play over ambition and linear thought" (Anapol 2004, 113). Culturally speaking, this Feminine, the

essence of which is connection, was honored in Hawaii through the worship of female deities. While the "practices" upon which this honor is evidenced are no longer a part of Hawaiian culture, according to Anapol's research, the Feminine remains strong there: it is "the bridge between past and present" (113). Masculinity does not seem to exist there—in fact, Anapol's own need for "internal male support" was unmet "amidst all the softness!" (114). I will leave aside any critique of her use of masculinity and femininity to categorize various traits and concern myself with only two of the things that I see happening in her telling.

First, she has painted a portrait of a world where violence, sexism, and homophobia seem not to exist in a world in which people seem more concerned with their sensuality than paying their rent. Not surprisingly, on the beach, where she encounters people on vacation, Anapol senses a powerful "transcendence" of "ambition and linear thought" (113). The lives of real residents of Hawaii, old and new, seem to have informed her analysis only marginally. She misses the contested nature of culture—that is, that power dynamics within a political geographical space play a role in determining what counts as culture (Pollitt 1999).

This leads me to my second concern with her deployment of 'the Feminine'. The lack of gender differentiation Anapol perceives in Hawaii, and which she situates as both evidence and cause of a purer, less polluted sexual culture, is discursively dangerous in its invocation of evolutionary theory. As I explained in the early part of this chapter, the analogous relationship posited between race and gender played a major role in scientific theorizing about human variation in the 19th and throughout the 20th centuries. Racial and gender 'differences' were used by scientists to explain one another on many counts, one

of the most enduring of which is the notion that less sexually differentiated bodies are evidence of racial and evolutionary inferiority (Schienger 1993; Stepan 1996; McWhorter 2009). The universal femininity of Hawaii feminizes Hawaiian men, thus evoking a lack of sexual differentiation historically associated with "lesser races." Further, sexual "promiscuity," spun rather as openness, lack of taboo or inhibition when described appreciatively, is of course a hallmark of "primitive" sexuality. In other words, the discourses of colonial corruption and civilizing missions refer to the same historic moments. The implication either way is that the intruded upon "culture" was, due to the evolutionary inferiority of its members, sexually freer and innately simpler than our own.

Fictional narratives about polyamory no less than non-fiction have challenged monogamy through recourse to naturalizing discourse. The premise of Taliesin the Bard's "Just Like a Hollywood Movie" is three people in a triadic relationship working together in the adult film industry who decide to make a movie—the first feature-length film about polyamory. It is called "The Compersion Effect."[52] Establishing the credibility of the fictive film's claim—that polyamory is natural and therefore good—is discussed by the characters throughout. They hire a cultural anthropologist and an evolutionary biologist as "expert advisors" on the film in order to make sure they have "the facts" (Taliesin the Bard 2004, 191). The facts, as such, serve as a catalogue of examples of non-monogamy in "nature." According to the experts, whose knowledge they share with the public at press conferences about the film, "aboriginal cultures existing today," "early humans," and "bonobos" (194) all share similar patterns of sexual relating. They have no concept of paternity and therefore have no need to exercise ownership of women through monogamy in order to establish it. Several things happen

in this story within a story, perhaps the most interesting of which for my purposes is that evolutionary theory is deployed very directly.

The assumption that early humans were like non-human primates alive today and that there exist groups of people now largely untouched by the evolutionary and cultural changes that have affected most human primates is a very fragile premise for many reasons, but here, I am more interested in what it *does* than why it is not "true." The argument that humans are like non-human primates, and particularly that some humans are closer to them than others, directly evokes "The Great Chain of Being" wherein a line from non-human primates to the European male was effectively established as an explanatory regime for social inequities. Arguments about the naturalness of monogamy based on this logic are powerful because evolutionary explanations are powerful. The classification of humans into these groupings makes sense in part because racism does.

Within the fictional account, the characters critique scientific naturalizing discourse on monogamy as science through "religious filters." They assume that evolutionary arguments about non-monogamy are, however, an unmediated representation of the natural world. What about science through white supremacist filters? As Sandra Harding (2006) asks in *Science and Social Inequality: Feminist and Postcolonial Issues*:

> under what conditions could it occur that a society with widespread and powerful forms of structural racism—a race segregated social structure—could produce sciences that did *not* participate in justifying and maintaining such white supremacy?

What kinds of scientific proclamations might resist the idea of types of people more or less human than others? The assumption that science is the Truth and the privileging of culturally entrenched facts about primitive sexuality as science function in the story as

the foundation upon which monogamy is critiqued. In order to make the film work to "advocate polyamory," the characters determine they will need "unbiased science," that people will see the light of polyamory if the film can in its presentation of evidence achieve "transcendence" of political, social, and religious beliefs (Taliesin the Bard 2004, 195). Despite the potential for engagement, rather than transcendence, in an attempt to paint polyamory in a positive light, nature remains the basket in which all of our proverbial eggs are placed. Before, underneath, and, if our dreams come true, *after* the smokescreen of culture, so the story goes, is the truth of how "humans were intended to live, polyamorously, polysexually" (186).

Whether it is the sexual openness of an abstract "before," the sacred Femininity of Hawaii, or the enlightening proclivities of "early man," what is presented in these texts is a racialized sexual other who, like the bonobo, can teach us something about ourselves. They stand, populations and individuals, as representatives of our "natural" sexual selves. These stories—fiction and non-fiction alike—serve an important narrative function—they reverse the moral hierarchy. They make it right to resist the socialization that makes us bow down to monogamy. But they do so at significant cost. The logic problematically privileges scientific explanations over other critiques of monogamy—producing the mandate to be sexually exclusive as more important than any other aspect of monogamy-centric or mononormative culture. It also relies on a racial typography that reinscribes historic assumptions about what race is and the relationship of race to sexuality. If our aim is to destabilize monogamy-centric culture, we do not need more scientific evidence that non-monogamy is natural. We need more nuanced analyses of the role of normalizing practices—which often take the form of scientific pronouncements—in

maintaining monogamy's status. In addition to critiques of scientific and non-scientific naturalizing claims, we need alternatives to this mirroring effect: another way of seeing monogamy. In the next chapter I propose that the fictional world of Alison Bechdel's comic strip *Dykes To Watch Out For* offers a different sort of queer feminist response to compulsory monogamy.

Chapter Four

Destabilizing Naturalizing Discourses on Monogamy:
Anti-Monogamy and Bechdel's Lesbianism as a Foucauldian "Way of Life"

> A way of life can be shared among individuals of different age, status, and social activity. It can yield intense relations not resembling those that are institutionalized. It seems to me that a way of life can yield a culture and an ethics. To be "gay," I think, is not to identify with the psychological traits and the visible masks of the homosexual but to try to define and develop a way of life.
> -Foucault[53]

> Being sexually non-exclusive is not enough to change society…It is anti-monogamy…which aims to break down this very system that dictates how we should conduct our relationships…
> -Rosa[54]

> At first, I admit, what attracted me about lesbianism was the sex…While I stood on the sidelines gaping with awe, it became clear to me that sex was merely the tip of the lesbian iceberg.
> -Bechdel[55]

While vole research on the monogamy gene establishes monogamy as essential to healthy human-ness, poly literature makes the opposite claim, that monogamy is unnatural. The natural remains in both contexts an epistemically privileged site, leaving historically entrenched assumptions about monogamy fully intact and unquestioned. In the tradition of reflexivity in feminist theory, I have come to this reading of the normalizing imperatives of the monogamy gene and polyamory discourse through struggle—intellectual, emotional, and always political. I share with the poly women writers whose work I critique a feminist political desire for something more than instability. I also share with them a hope for relationships not built on the primacy of the couple, economically and otherwise.

Guides to polyamory offer us some models, but as they gain popularity in our (queer) communities, recipes for polyamory are increasingly prescriptive. I have argued that the idea that humans are naturally desirous of multiple sexual partners (and that this is indeed the problem) reflects and reinscribes racialized assumptions about sexuality. I find Rosa's distinction between non-monogamy and anti-monogamy useful here. Anti-monogamy is not a set of psychological traits at all, but rather a rejection of certain tenets. In her essay, Rosa asks feminists to consider how the nuclear family undermines friendship, why we associate "falling in love" with sex, and how "compulsory sexuality" functions to make sex a central organizing principal of our relationships. She asks us to resist the "pressure on lesbians to be as 'normal' as possible" and instead to "invent our own relationships," individually and collectively (Rosa 1994, 114).

Writing against the risk of simply adding to the "program of proposals," I want to consider the "instruments for polymorphic, varied, and individually modulated relationships" (Foucault 1996) made available to us in the fictional world of Alison Bechdel's comic strip *Dykes to Watch Out For* (*DTWOF*), which ran from 1983 to 2008. The strip has been compiled into 13 collections and is also accessible online. In "Friendship as a Way of Life" Foucault argues that "something well-considered like a magazine"—or a comic strip—"ought to make possible a homosexual culture," offering these "instruments" without creating a "program of proposals" that "become law." I argue that Bechdel offers us a self-consciously performative reclamation of sexological "lesbianism"[56] as a way of life that makes possible a culture not premised on the logic of the couple, but without prescribing alternatives.

I want to be clear that lesbianism here does not refer to "a set of psychological traits," but rather explicitly to a "way of life." In the Introduction to *Dykes and Sundry Other Carbon Based Life Forms to Watch Out For*, Bechdel explains how she came to realize that you did not have to be a lesbian, "at least in the technical sense," to care about the things – racism, sexism, militarism, classism, imperialism, and homophobia—that "lesbians" care about (Bechdel 2003, 5). And in the introduction to her 2008 retrospective *The Essential Dykes to Watch Out For*, Bechdel notes that the romantic version of "lesbians" that saw her through the 80s was not wholly "true." See Figure 9:

Figure 9.

Here Bechdel points out that not all "lesbians" care about these things, they can be "reactionary provocateurs" and "arch conservatives." Not all women who sleep with women share in Bechdel's "lesbian" worldview, nor are all of those who do share in this worldview lesbians per se.

Yet under this banner, Bechdel offers us a world in which monogamy is visible as a powerful social rule and a compelling cultural story. This is a world in which alternatives to monogamous coupling are considered as a matter of course and in which affective ties and networks of social support are not organized primarily around sex.

While various versions of non-monogamy or polyamory play a part in this lesbian culture, they are not the opposite of monogamy or the antidote to feminist critiques of it.

Especially since the publication of her celebrated graphic memoir *Funhome: A Family Tragicomic* in 2006, Bechdel has received accolades for her contributions to lesbian and queer cultures.[57] Bechdel's work, reviewers seem to agree, "provides a welcome alternative to public discourses about LGBTQ politics that are increasingly homonormative and dedicated to family values" (Cvetkovich 2008). Part of Bechdel's anti-"homonormative" ethos, I argue, is an anti-monogamy sensibility. That is to say, she offers a sense that monogamy is a feminist issue and a norm that should not be taken for granted, but without offering easy or prescriptive answers. This explicitly de-naturalized take on monogamy decenters monogamy in a way that naturalizing polyamory rhetoric does not.

I begin with a graphic novella entitled *Serial Monogamy* published as part of Bechdel's fourth collection of *DTWOF* comics in 1992. She uses humor here to guide us through the protagonist's[58] inner struggle between a lesbian-feminist anti-monogamy politics and a desire for "the picket fence." The novella does three things: 1) it articulates a feminist critique of monogamy in a non-academic venue, 2) it renders compulsory aspects of monogamy visible, 3) and it refuses a finite resolution. By refusing a resolution I mean to say that this tension between compulsory monogamy and critiques of monogamy is set up as context, not as a problem to be solved once and for all. This context is part of the ethical world in which the cast of *DTWOF* lives. I will discuss two parts of the novella—three frames that show the protagonist at different ages and then the concluding frames.

These first three frames, showing the protagonist at 21, 11, and 31, are interspersed throughout the narrative as documentary-style self-reflection. In the first she is 21:

Figure 10.

This frame shows the protagonist becoming "a lesbian," part of which was learning that "monogamy and romantic love were just male-supremacist constructs designed to keep women in their place." While naturalizing poly rhetoric redresses this feminist critique of monogamy by naturalizing non-monogamy, Bechdel's story opens up the critique without presuming that these cultural mandates are reducible to the naturalization of sexual exclusivity.

Knowing that monogamy is a powerful social rule, and seeing it in action in the lives of her parents and other coupled people, the protagonist contemplates why she still longs to find the love of her life and to "live happily ever after." In a comedic reflection

on the role of popular culture in perpetuating monogamy's compulsory status, she blames "The Brady Bunch":

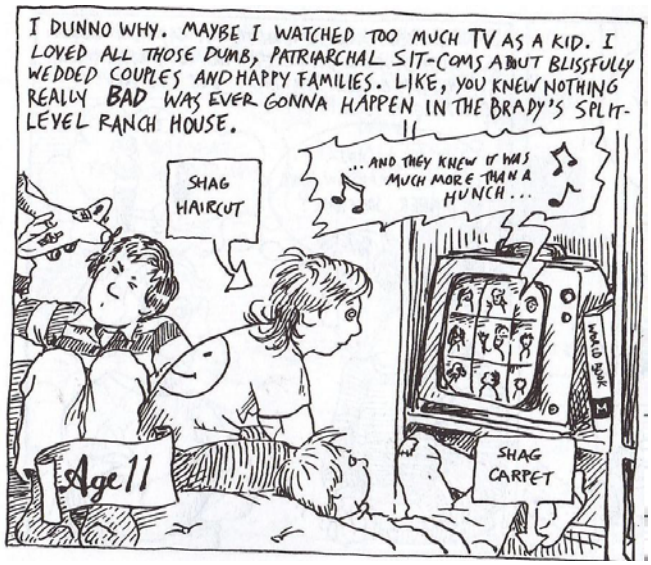

Figure 11.

As a child – a decade before she became a lesbian – the protagonist was indoctrinated into the patriarchal, monogamy-centric culture of family values. This evocation of the power of these values in culture effectively denaturalizes the deep and embodied desire the protagonist experiences to "pair off."

At 31, having read in the paper about a sex scandal in the cast of "The Brady Bunch" and thereby becoming finally convinced that monogamous bliss is a myth, the protagonist contemplates her situation:

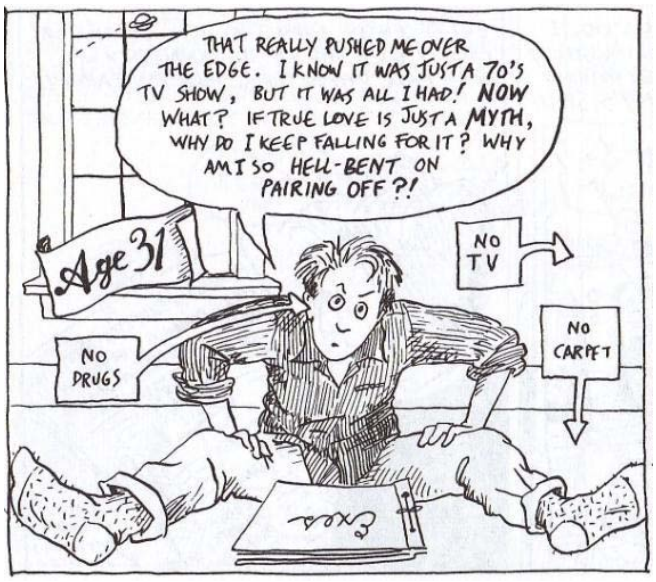

Figure 12.

All grown up—her maturity comically marked by the absence of the television of her youth and the drugs of her early twenties—she sits with her scrapbook of exes and contemplates her patterns and desires in light of this reaffirmed knowledge that the promise of "true love" is a ruse. Still sitting on the floor, bewildered, she raises a series of questions including: How many of your needs can you "reasonably expect [one person] to meet?" "What does it mean to trust someone?" How do you know when to break-up with someone?

These are familiar questions in our monogamy-centric culture. They are versions of questions we might encounter in any women's magazine and about which feminist critics of monogamy have raised questions. The first question is framed in such a way that we realize the speaker is familiar with the critique of monogamy as the expectation that one person will meet all of your needs. Still, she does not ask a question about how she can get her needs met otherwise, she asks how many needs can she expect to have met within the context of a coupled relationship. Here the idea that overinvesting in one

relationship is “bad” for women and for feminism leads the protagonist not to pursue multiple sexual or romantic relationships, but to try to determine what modifications her expectations of “true love” require. She is not relinquishing the fantasy just because she knows it is one. In the second question, the protagonist asks what it means to “trust someone.” She does not ask what it means to trust in general or to feel safe in the world—in this question the “someone” is a lover. Trust here is the foundation of a lasting romantic relationship and thus fundamental to the ideal of super monogamy, rather than an important part of relating. This privileging of presumably sexual romantic relationships over other types of relating is foundational to monogamy’s compulsory status. It is made visible as such as part of the protagonist’s desperate attempts to hold onto the ideal of monogamic bliss embodied for her in “The Brady Bunch.” The final question she asks is about how you know when to break up with someone. This question also makes the ideal of super monogamy comically visible. The protagonist wants to know how one decides that the person to whom they are attached is not “the one.” In more pragmatic terms, she wants “to be available when the love of [her] life comes along” (Bechdel 1992, 110).

At the end of the novella, up off the floor, the protagonist questions the questions themselves:

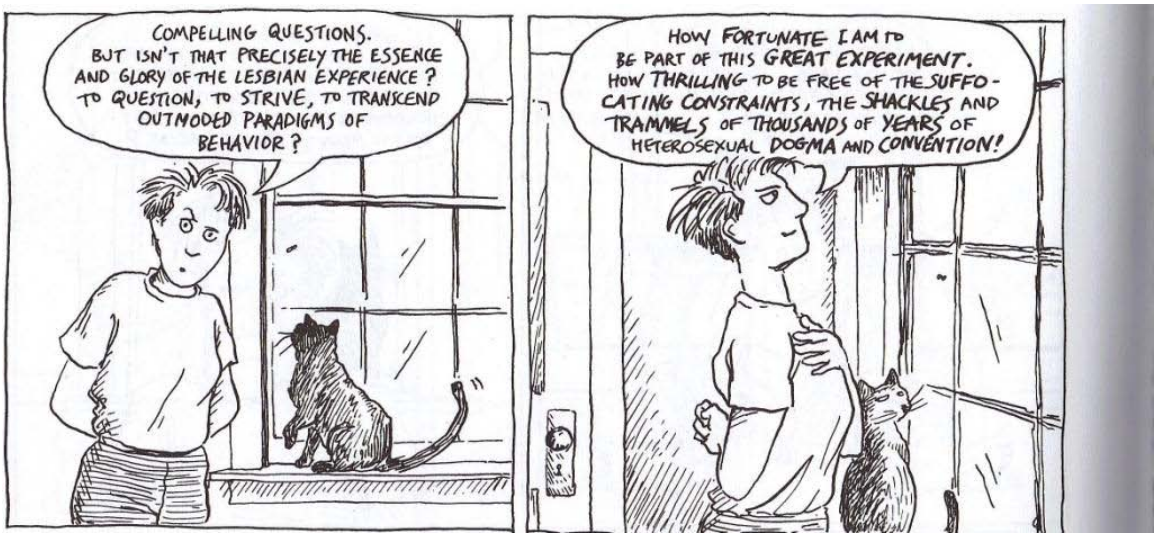

Figure 13.

A lot happens here. We are not in fact free of the "shackles" of the ideal of compulsory monogamy—that is precisely what is funny. We cannot get outside it. Still we cannot take it for granted. "Lesbianism" is marked here as more than a preference for sex with women, but as a cultural "experiment," a "way of life." An essential part of that "way of life" is invention:

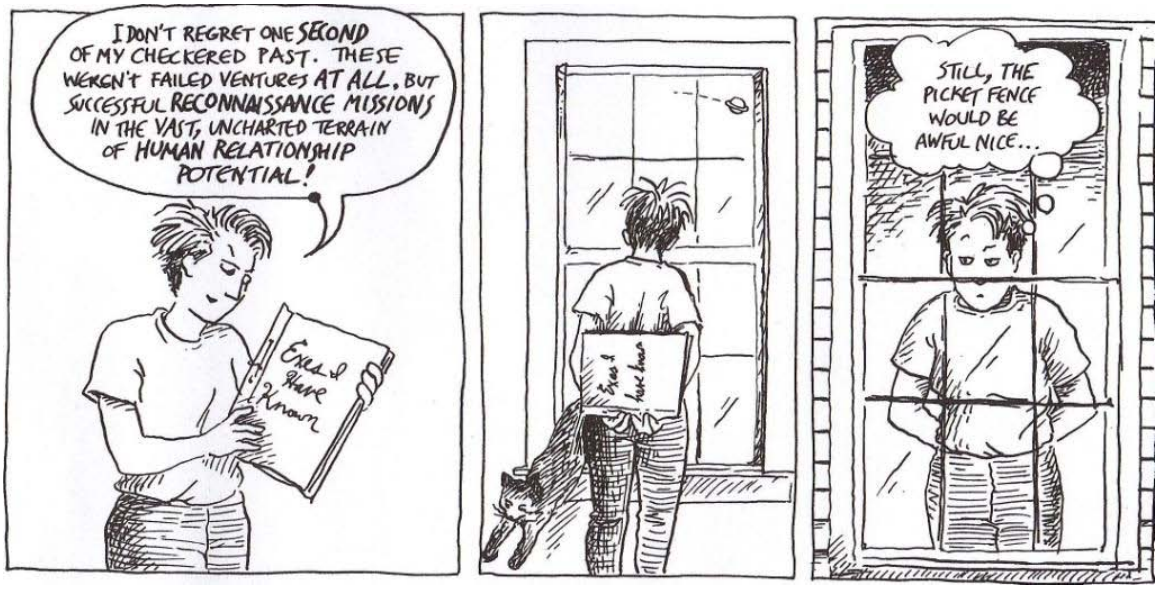

Figure 14.

This inventing takes place in a world with a history, one in which resistance is possible. In this world, the naturalization of monogamy has had a profound impact on the individual and collective desires of people, even "lesbians." We cannot simply erase this history by rewriting it as a story about the repression of non-monogamy. Still we can resist its prescriptions. The "lesbian" may still long for the picket fence, but she has the possibility of reinterpreting what our monogamy-centric culture considers "failure." She has friends and an extended family of exes with whom she shares various aspects of her life and on whom she relies for the companionship usually relegated exclusively to the locus of the couple.

And an entrée into this new way of life is just what we find in *Serial Monogamy* circa 1992. Over the course of 25 years Bechdel gives us unlikely, long-term, intergenerational friendships (between Samia and Cynthia and Lois and Janis), multi-adult households of various configurations, and co-parenting and co-homeownership among adults who are not coupled. These configurations of relationships offer versions of resistance to compulsory monogamy that also decenter sex as the central organizing principle structuring relationship networks. The fact that several of the friendships that connect the characters to one another have lasted so long—and have in fact outlasted coupled relationships—makes friendship visible as the central structuring element in this world. That many of these long-term friendships began as sexual or romantic relationships—Mo and Ginger dated in college and Lois and Sparrow had a brief affair which began when they met at a protest—blurs the line between friendship and "love" so central to the scientific naturalization of monogamy discussed in Chapter Two.

Lois, Ginger, Sparrow, and more recently Stu, are housemates.[59] Ginger and Sparrow bought the house (see "Buyers Remorse" 1998) after renting it together with Lois for many years. Sparrow and Stu are a couple (Sparrow identifies as a "bi-dyke"), while no one else living in the house is dating. Jasmine, who briefly dated Ginger before getting romantically involved with Lois, is also often there (from 2001 on) with her daughter (Jonas, later Janis):

Figure 15.

In this strip, Sparrow discovers that she is pregnant and everyone weighs in. She and Stu have the baby—Jiao Raizel—and they all stay living there together for some years, actively sharing in co-parenting. Mo (the main character, Lois's best friend, and Ginger's first lover) is also frequently at the house.

After nearly two decades, Ginger moves out to move in with her girlfriend Samia, Samia's husband (from whom she is now separated), and Cynthia (a conservative undergraduate whom Samia has taken under her wing and befriended). And Clarice, after her separation with Toni, her partner of 20+ years, moves in temporarily. Both newly constructed households are depicted in the strip below:

Figure 16.

Notably, the intimate networks out of which these households formed and which they reorganized are not primarily sexual. The ideal of friendship on which they are premised is also quite expansive. Cynthia is Ginger's ex-student and Samia tutors her in Arabic.

They are not “friends” in a traditional sense. When Cynthia “comes out” to her conservative family and they will no longer support her, Samia invites her to stay with them. This ethic of investing emotionally and otherwise in community directly and materially challenges the privatization of resources within the couple and is foundational to this “lesbian” way of life. In the second half of this comic, we see Ginger and Jasmine, both with teenage children, interacting in the communal home Ginger now shares with Lois, Sparrow, Stu, Jiao Raizel, and sometimes Jasmine and Janis.

In addition to multi-adult households and kinship networks that decenter the domain of the couple, there is plenty of non-monogamy and polyamory in this world. Over the years we see Lois in a variety of relationship formations—“fuck buddies” (with Yoshi and Jerry), multiple non-hierarchical romances (with Naomi and Angela), and as a secondary partner (to Dorothy). Mo is a committed serial monogamist hungry for the picket fence until she ends up with Sydney, who talks her into exploring polyamory. This is their first conversation about it:

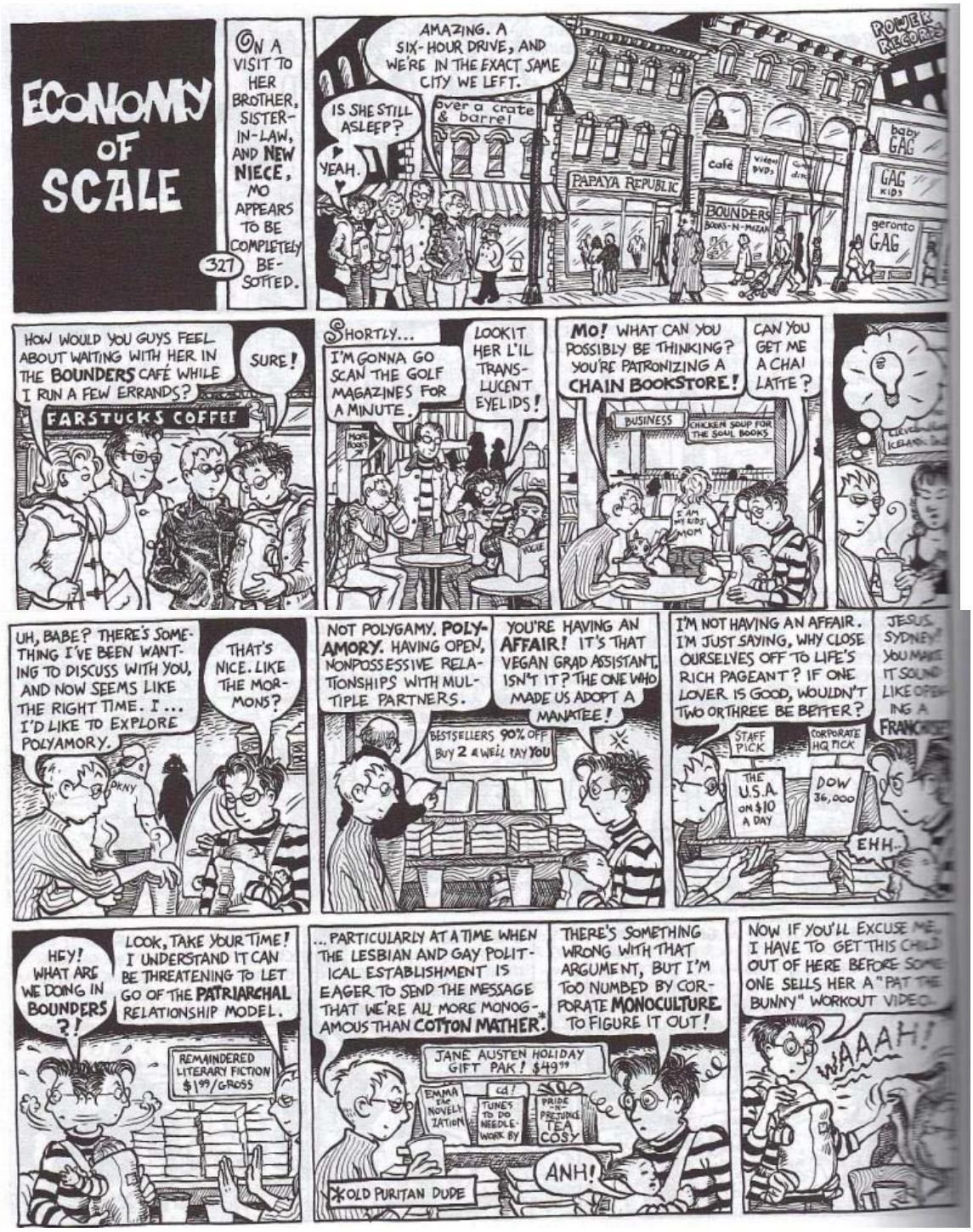

Figure 17.

While critiquing monogamy and always showing its fissures, Bechdel never romanticizes alternatives to it. She shows them as also embedded in structures of power: both

monogamy and polyamory are denaturalized. Sydney's desire for multiple partners is as much the object of self-reflexive humor as Mo's resistance to it:

Figure 18.

In this strip, Sydney's pronouncement of her desire to be "normal" and buy Christmas gifts is followed immediately by one of her not infrequent monologues on the radical potential of polyamory. Here, both monogamy and consumerism are marked as symptoms of a larger cultural machinery that we should resist because it harms people. Martha Stewart's crafting magazines (see Figure 18) and polyamory are comically marked as *part* of that machinery. They do not offer us a way outside its logic: they mirror it in their opposition. Sydney's privileging of sexuality as a locus of resistance to capitalism (and patriarchy) is also part of the joke.

Toni and Clarice's 20+ year relationship is a *DTWOF* institution. Throughout the years it has destabilized the ideal of monogamy by rendering it visible, both through its internal processes and then as an occasion for discussion by other characters. This early strip shows both:

Figure 19.

Here, Mo's longing for the monogamic bliss that Toni and Clarice share and Lois's "transcendence" of it denaturalize it by making it visible as a cultural ideal. Clarice and

Toni are not only coupled for decades, they have a child—Raffi—together, move out to the suburbs when he's young, and have the most mainstream liberal politics of all of the major characters: Clarice is a staunch supporter of the democratic party and Toni an active member of a right to marry group. Their relationship comically represents the normative family model we are all supposed to want and the strife internal to it reveals the inherent instability of the ideals of both super and simple monogamy (see in particular the 1998 collection *Split Level Dykes to Watch Out For*). Over the course of their relationship they each have affairs, Toni with her close friend Gloria and Clarice with Ginger. They fight over housework and childrearing and sex.

They talk about opening up their relationship, notably as a solution to their relationship problems, as a way of sustaining the couple and not upsetting its fragile stability. Here they are discussing opening up their relationship with their couples' therapist, who offers a variety of strategies for improving their connection:

Figure 20.

Given their ongoing crushes on other women, they both lean toward polyamory as a solution. Here they are perusing Dossie Easton and Catherine Liszt's[60] *The Ethical Slut* (known by some as "the polyamory bible") and Deborah Anapol's *Polyamory: The New Love Without Limits.*[61]

Figure 21.

Encountering these books in the relationship section of the local feminist bookstore and seeing "opening up" on the list of relationship improvement strategies, alongside such middle class personal growth activities as traveling and going back to school, makes their polyamorous quest seem increasingly mundane.

The notion that open relationships are at least potentially stronger and healthier than purportedly monogamous ones is often part of polyamory discourse and has been critiqued as reinscribing "mononormative" values (Ritchie 2009; Finn and Malson 2008). In a recent article entitled "Many Successful Gay Marriages Share an Open Secret," *The New York Times* reported on a new study from San Francisco State University that found monogamy is "not a central feature" of many gay and lesbian relationships, at least in the Bay Area (James, 2010). Popular science author Joe Quirk is quoted in the article,

arguing that non-monogamous "homosexual marriages" offer insights that may help "us" to rescue "traditional American marriage" from crisis. Toni and Clarice's marriage—up until its demise (or sabbatical) in 2006—might have been (on the surface at least) just what Quirk had in mind: a "normal" marriage with the possibility of consensual extramarital sex.

Bechdel gives us instruments for resisting the appropriation of non-monogamy by defenders of "traditional American marriage" by offering us a world in which this sort of marriage is but one relationship model and but one relationship in the lives of each of these two characters. In this world monogamy is problematized as "lesbians" negotiate it in their daily lives. In the introduction to *The Essential Dykes to Watch Out For,* Bechdel worries about the power of stories to "pin down" and thus change things, rather than simply represent them:

Figure 22.

In a world where both genetic research on monogamy *and* lesbian and gay polyamory are being cited in an effort to keep "traditional American Marriage" afloat, we need a historical memory. We also need "role models." We need feminist critiques of monogamy and models of relating that denaturalize sexuality. Thank goodness the dykes (and sundry other carbon based life forms) of Bechdel's *DTWOF* are a part of the discursive resources from which we draw in the making of our lives.

Conclusion

I have argued that feminist critiques of monogamy make a compelling case for questioning its naturalized status. I have sought to reframe a set of concerns with compulsory monogamy that offer universalizing claims about the naturalness of alternatives as an approach to challenging that naturalness. I have offered analyses of both the scientific naturalization of monogamy and its meanings mirrored in naturalizing feminist claims about polyamory. Following those analyses I have offered a reading of Alison Bechdel's comic strip *Dykes to Watch Out For* as an alternative queer feminist ethics of anti-monogamy that offers the possibility of alternatives while actively resisting naturalizing discourses.

In my analysis of the scientific naturalization of monogamy in the context of a particular scientific laboratory's publications and practices, I found that assumptions about sexuality as instinctive shaped the naturalization of monogamy. I concluded that the norm of monogamy is marked not only by prohibitions on promiscuity, but by a mandate to be sexual. I found that similar meanings of monogamy and non-monogamy were reproduced in naturalizing feminist polyamory rhetoric, wherein sexual exclusivity was produced as unnatural, and the mandate to be sexual was reproduced rather than challenged. I argued that Bechdel offers a decentering of monogamous forms of relating that not only challenges the logic of sexual exclusivity, but also disrupts the centrality of sex to the organization of social relationships.

In both science and polyamory I found that monogamy and non-monogamy, respectively, were naturalized through recourse to an evolutionary logic that analogizes, associates, and sometimes conflates categories of difference produced as innate and

hierarchical in the 19th century. In the laboratory I studied, non-monogamy was pathologized in part through its association with autism. In feminist polyamory rhetoric, non-monogamy was naturalized in part through its association with a racialized primitivity. Challenges to compulsory monogamy that resist reproducing the logic of these naturalizing claims may also avoid reinforcing the pathologization of other naturalized differences.

To feminist critics of monogamy, I suggest that there is more at stake in theorizing compulsory monogamy than rendering prohibitions on sexual non-exclusivity obsolete. Investments in "twoness" are not only reflective of investments in gendered stories about romance, but also enmeshed with investments in whiteness, health, and the normal more broadly. Attention to denaturalizing these associations should inform our challenges to compulsory monogamy. To theorists and historians interested in sexuality's production through scientific naturalizing claims, I posit that monogamy has been undertheorized. Attention to the points of intersection of the distinct genealogies of sexual instinct and the naturalization of sexual exclusivity and "love" might help us to understand more about how coupling as we know it became natural. To feminist science studies I propose that recouping the body through the reappropriation of scientific data may leave intact assumptions built into experimental models, but invisible in the reporting of results. For example, nowhere in the vast literature produced by Young's lab could one discover that sex is inessential to the formation of pair bonds. On the other hand, if we read vole behavior through the lens of Bechdel's variety of modes of relating and embraced the lost link between love and human biology, who knows what we might come to know and what new myths it might engender.

If pair bonding is not fundamentally sexual and thus not fundamentally different from friendship, which structures the world of Bechdel's comics, we might understand the "nature" of love and what it means to experience it quite differently. The division between sexual and non-sexual loves would no longer have a basis in biology. Recourse to human nature could not be called upon to explain monogamy or non-monogamy in sexual terms. If we thought of monogamy as something other than a sexual arrangement, something like friendship, it would no longer be exclusive in principle. It could no longer function in the ways with which feminist critics of monogamy have taken issue. Conversely, this way of thinking about monogamy would open up questions previously in tension with conceptions of human nature: questions about how best to get our needs met and in what and whom we want to invest our energies.

Notes

[1] See Okin (1999) for an example of the kind of feminist rhetoric around polygamy that tends to inform public debate (Narayan 1997) and Honig (1999) for a response to Okin that directly addresses the assumption that monogamy is an inherently more desirable form of marriage than polygamy.

[2] Not all scientists make this claim: it depends upon how monogamy is defined. See Chapter Two, especially pages 48-50.

[3] Why then we do not all live in communes where more than two adults are available to feed, protect, and otherwise ensure the success of our young is beyond the scope of this dissertation.

[4] This connection is made quite directly in *It's Not You, It's Biology: The Science of Love, Sex, and Relationships* (2008), where Joe Quirk describes men and women as "sperm spreaders" and "egg protectors" respectively in order to explain their different dispositions toward monogamy (which he defines as sexual exclusivity). See Quirk (2006) for a fuller exposition of the logic of active and passive male and female sexuality and as an example of how this logic re-enters public discourse as scientific.

[5] In fact, as dissenting scientific voices since at least 1948 have pointed out, this is but one way of interpreting the "lives" of the egg and the sperm. Contrary to the active/passive tale of fertilization, two cells fuse (active/active) and sperm are not as strong, goal-oriented, or potent as some scientists have imagined (Martin 1991).

[6] The most common scientific explanation for male monogamy is that it is linked to territoriality or jealousy. See for example Daly, Wilson, and Weghorst's "Male Sexual Jealousy" (1982).

[7] Configurations of poly relationships are quite diverse—they range from "open" (non-sexually exclusive) dyadic relationships, to triads and "vees," to group marriages and "polyfidelitous" relationships. See Kassoff (1989) and Munson and Stelboum (1999) for discussions of a range of polyamorous identities and relationships.

[8] See the introduction to Eve Kosofsky Sedgewick's *Epistemology of the Closet* (1990) for a more general discussion of minoritizing and majoritizing rhetoric around sexualities.

[9] Poly is short for polyamory and polyamorous and is the common parlance in the literature on polyamory.

[10] See Brenda Maddox's *Rosalind Franklin: The Dark Lady of DNA* (2002) for one telling of the story of the discovery of DNA and how credit for the discovery was granted to Watson and Crick due to sexism and posthumously attributed also to Franklin.

[11] For histories of the regulation of this ideal by the church see Dowell (1990) and by the state see Cott (2002).

[12] Historically this is true, although now paternity testing can identify patrilineage.

[13] Overall frequently conflates conscious and critical non-monogamy with cheating and infidelity, resolving this only by pointing out that even when non-monogamy is agreed to by both (or all?) partners, jealousy and pain are present (ibid. p. 2). The existence of jealousy, even if it were universally true, does not justify the erasure of consent as an important factor in the way relationships are organized. Overall also ignores the potential of non-monogamy to *challenge* jealousy (Robinson 1997, 148).

[14] This is a phrase used by Arundhati Roy in *The God of Small Things* to refer to expectations and rules about "who should be loved. And how. And how much."
[15] Bisexual desire, of course, need not manifest itself in a need for both female and male lovers (Halpern 1999, 162; Hemmings 2002, 27; Murray 1995, 293; Rust 1996; 2000); "even bisexuals with multiple partners often have partners of only one sex" (Rust 2000, 414).
[16] "Loving More" magazine has documented specific cases of discrimination and Lana Tibbets (2001) and Elizabeth Emens (2004) note the risks for poly women of being "out."
[17] Scientific discourses have indeed also been used to challenge racism (Stepan and Gilman 1991).
[18] See Krafft-Ebing and Havelock Ellis in Bland and Doan's *Sexology Uncensored: The Documents of Sexual Science* (1998) for descriptions of these three types, especially Ellis (1915).
[19] See Pamela Scully and Clifton Crais's *Sarah Baartman and the Hottentot Venus: A Ghost Story and a Biography* (2009) for an account of the significance of the "Hottentot Venus" to this history and of the life beyond Sarah Baartman's status as a symbol of European scientific racism.
[20] Foucault's (1998) Malthusian couple is the archetype of heterosexual normality.
[21] See Morisson (1993) and Frankenberg (1993; 1997) for analyses of whiteness and its invisibility and the relation of that invisibility to racism and white supremacy. See Newman (1999) for an analysis of slippages among the categories of "Christian" and "white."
[22] The "moment" to which Krafft-Ebing attributes the attainment of this "mental and material superiority" is the recognition of woman as the "peer of man." This does not refer to suffrage or the allocation of other political rights to women, but rather explicitly to marriage. The "freedom" of women and men to consent to fulfilling their proper roles in marriage and to pledge their commitments to do so to and for one another (and before the state) is what ostensibly puts them on equal footing. The hinging of civilization itself upon this moment connects the cause of women's rights with the construction of "civilization" and whiteness. It also implicates the discourse of women's rights in the making of monogamy's meanings. I have discussed this in some detail elsewhere (Willey 2006).
[23] See Cornell West's "Genealogy of Modern Racism" (2002) for an analysis of the importance of phrenology to the history of measurable anatomical difference and specifically to its institutionalization of a racialized aesthetic in comparative anatomy. See also Stern (1971).
[24] According to the theory of phrenology as originally outlined by its founder, Franz Joseph Gall, the brain is the "organ of the mind" and made up of smaller organs with specific functions that are topographically localized. Phrenologists held that the relative size of an organ was indicative of the organ's power over the person's behavior. The external shape of the head could supposedly be read, by phrenologists or self-educated laypersons, to diagnose the state of these mental faculties (Combe 1839). According to the mapping and charting of these organs, there were 37 (according to Gall) and later 41 (after additions had been made), falling into eight different sections of the brain (Fowler 1847). Practical phrenologists devoted a good deal of attention to the "domestic organs,"

three of which, I have argued, encode as natural a model of heterosexual, companionate, lifelong monogamy, that reflected an ideal of "perfect love" popular at the time (Willey 2006). For a brief history of practical phrenology in the United States, see Vukin (2004).

[25] While its actual findings proved inaccurate—the development of the brain cannot in fact be detected on the outside of the skull—the proposition that the brain was made up of parts each of which had a unique function was by and large accepted (Stepan 1982, 20). Phrenologists also introduced the idea that the functions of the brain are linked to human behaviors, situating biology as the key to understanding the behavior of both humans and animals. More than this attribution of behaviors to biology, phrenology also posited for the first time that *all* observable behavior, things like will and faith that had remained distinct from questions of biology, must be linked to some corresponding function in the brain, the organ of the mind or soul (Greenblatt 1995). The assumption that nothing is outside or beyond the scope of this explanatory regime, though sometimes problematized, is commonplace in gene discourse today (Hubbard and Wald 1993; Lewontin 1991).

[26] Part II (Hammond's section) of Hammonds and Longino's (1990) piece on conflicts in the feminist study of gender and science provides a nuanced discussion of tensions in the debate about women in science and between feminist critics and working women scientists. She argues that women scientists are as faithful to science as they have learned it as men scientists, perhaps even more resistant to feminist critiques due to the similarity of discourses espoused by proponents of a feminist science and those who claim that women are incapable of doing "real" science.

[27] A key theme in both Hubbard and Birke's respective works is the contestation of scientific reductionism—the process of breaking nature down into smaller and smaller pieces in the belief that we will, in that fashion, be able to better understand organisms and organisms in their environments. This is not a timeless or "natural" goal for science or a universally held belief, though it holds much sway today.

[28] See Koedt 1960 for a critique of how the assumptions underlying this discrepancy function in heterosexual relationships as "The Myth of the Vaginal Orgasm."

[29] See also Irigaray (1985, 15) for another approach to deconstructing the logic of active/passive sperm and egg.

[30] While Haraway makes a similar call for new metaphors to help us envision the world anew, Birke explicitly rejects Haraway's metaphor of the cyborg. Birke argues that our mechanistic and systems-focused models for thinking about and representing the body tend to enter social theorizing as either (most commonly) the basis for rejecting naturalizing views of the body as biologically determinist or, in contrast, as metaphors extending to potentially transgressive worlds of cyberspace. Both, she argues, contribute to seeing the inner-body as outside of culture, thus both are reductionist. Postmodern narratives of the body's flexibility, she contends, echo the primacy of the "movable gene" in biomedical discourse. She fears that work like Donna Haraway's reiterates (albeit in new ways) the dream of transcending the body, a gendered dream with consequences like genetic engineering and the atomic bomb. "Cyborgization" she argues does not disrupt, but rather coexists easily with explanatory frameworks based on control. Postmodern flexibility may be highlighted in immunology and genetic engineering, but not in other areas, and can actually serve to fix other aspects of biology as more predictable and stable than they are.

[31] She outlines three ways in which racially discriminatory practices in science have been categorized and addressed. First is the categorization of racial types, an area that Schiebinger explores in some depth. Second, science critics have addressed the racist misuses of science, a theme that Hubbard and Birke address, each in their discussions of the implications of applied technologies of science, including eugenics.
[32] See Hemmings (2005) for a discussion of the political ramifications of the stories we tell about feminist "waves" in general and of a reactionary 1970s in particular.
[33] See Chapter 5 of Elizabeth Spelman's *Inessential Woman* (1988) on the role of somotophobia—fear of the body—in reproducing an implicitly white subject in feminist theory.
[34] Young, L. J. and C. Smith. "Molecules that Mediate Monogamy" an interview on *The Naked Scientist: Science and Radio Podcasts* (February 2009).
[35] Young, L. J. "Being Human: Love: Neuroscience Reveals All." *Nature* 457, no. 7226 (2009): 148.
[36] See Lewenstein (1995) for an analysis of the mutually beneficial relationship between science and the media, even when the science is reported less than accurately.
[37] The vast majority of the laboratory's extensive budget comes from the National Institute of Mental Health (NIMH), now directed by Thomas Insel, Young's mentor and the neuroscientist who began the vole research at Emory over a decade ago.
[38] There was no distinction between sexual and social monogamy in Darwin's catalogue of monogamous and polygamous species in *The Descent of Man* (1981, 217-221) and until DNA testing, pairing to raise young with assumed sexual exclusivity seems to have remained more or less the referent for the term.
[39] What is now usually referred to as microsatellite DNA was once and is still sometimes called "junk" DNA, because before it was thought to potentially mark genetic variability, it was dismissed as meaningless because it is non-coding—meaning that it does not actually provide the program or instructions for a protein that actually performs some function in the body.
[40] Though the lab reports this as if it were clear, I learned in interviews that cross-receptivity in receptors means they cannot know for sure which hormone is acting on the receptors in a given instance—vasopressin, oxytocin, or perhaps even dopamine.
[41] Others counter Young's lab's claims, arguing that mammalian monogamy is "not controlled by a single gene" (Fink, et al. 2004; 2006), but these laboratories are almost never cited by the press. So this is not uncontested in the scientific community, yet achieves the status of Truth through the reporting of the discovery of a gene. The idea of genetic determinism has a lot of currency in the US (Conrad and Markens 2001; Hubbard and Wald 1993).
[42] The same test has been done using female animals as test subjects—researchers argue that different hormones bind with the same receptors in males and females. So it is the same neurochemical pathway that is acted on, although the evolutionary significance is different. The hormone said to control female monogamy is oxytocin, which controls maternal care behaviors. In males the hormone is vasopressin, which is said to control species specific behaviors, like territoriality. Both males and females have both hormones and, as I mentioned in footnote 6, there is cross receptivity in receptors so they

do not know which bind with the receptors. See Willey and Giordano (2011) for a detailed analysis of the gendered hormone story of monogamy research.

[43] Other than technicians and others who work at Yerkes and care for the animals and the space, non-scientists are not generally admitted into the animal lab for more than a guided tour for a variety of security reasons.

[44] Animals with the genetic variation the press calls "the monogamy gene" were found on average to spend more time in the same section of the cage as the familiar animal—their "partner"—than those who do not. This finding is the result of another process of mediation- statistical analysis in which the data on extreme outliers ("noise" in the data, see Perrault 2002) is disposed of and then based on statistically significant group averages. This means that not all voles with the "gene" spend more time with the familiar female and not all who lack it spend more time alone or with the "stranger" (Hammock and Young 2005; Willey and Giordano 2011). Those genetically "monogamous" voles that actually spend far more time with the stranger and those "promiscuous" ones who spend more time with their "partners" are not counted because they are anomalies. What is reported is statistical results that highlight group averages and ignore individual variability (see Fausto Sterling 2000, Chapter 5 for a great discussion of this in the study of sex differences). This is one of the very powerful ways in which human variation gets written out of science and "normal" becomes naturalized.

[45] The voles are sexed by measuring the space between their tails and their indistinguishable external genitalia. The voles live in sex-segregated cages and sometimes one will have pups, so they re-sex the voles. As with humans, sex assignment of voles is binary and privileges some aspects of "sex" over others (Dreger 1998; Fausto-Sterling 2000; Kessler 1998).

[46] Newitz, A. "Love Unlimited: The Polyamorists." *New Scientist*, July 7, 2006: 45.

[47] Somerville, S. "Scientific Racism and the Invention of the Homosexual Body." In *Sexology in Culture: Labelling Bodies and Desires*, ed. L. Bland and L. Doan, 60-76. Chicago: University Of Chicago Press, 1998: 73.

[48] For a discussion of the portrayal of black men and women as masculine and thus hypersexualized, see Collins (2004).

[49] For a discussion of the portrayal of Asian men as feminine and therefore desexualized, see Nemoto (2009).

[50] *The Ethical Slut* (Easton and Liszt 1997), *Polyamory: The New Love Without Limits* (Anapol 1997), and *Lesbian Polyfidelity* (West 1996) all predate these two readers and have their mark on them. In fact in a review essay at the end *Plural Loves*, Maria Pallotta-Chiarolli pays tribute to these authors as the "pioneering poly women" who paved the way for what was to come.

[51] This critique has been made not only of literature on polyamory, but also of queer (Johnson and Henderson 2005) and feminist (Aziz 1997) theories, where polyamory is increasingly being addressed.

[52]Compersion is a term used in poly communities and literature to refer to the feeling of joy one gets from seeing their partner happy with someone else – it is the opposite of jealousy. See Ritchie and Barker (2006) for a discussion of compersion and other concepts in "polyamorous languages."

[53] Foucault, M. "Friendship as a Way of Life." In *The Essential Works of Foucault,*

Volume I, Ethics: Subjectivity and Truth, ed. Paul Rabinow. New York: New Press, 1996: 158.

[54] Rosa, B. "Anti-Monogamy: A Radical Challenge to Compulsory Heterosexuality." In *Stirring It: Challenges for Feminism*, ed. C. Griffin, 107–120. London: Taylor and Francis, 1994: 112-113.

[55] Bechdel, A. *Dykes and Sundry Other Carbon-Based Life-Forms to Watch out For*, ed. Allison Bechdel. Los Angeles, CA: Alyson Publications, 2003: 2.

[56] See Judith Butler (1999) for a discussion of the performative re-deployment of lesbian as a banner under which we might organize.

[57] Bechdel's *Fun Home* (2006) became a *New York Times* bestseller, was reviewed widely, and won several awards. It is also receiving a good deal of academic attention (Chute 2006; Lemberg 2008).

[58] The protagonist seems to be a loosely autobiographical character, like Mo, the main character in the regular strip.

[59] For more detailed cast biographies see Bechdel's website: http://dykestowatchoutfor.com/cast-biographies

[60] Janet Hardy used this pseudonym in the original publication of the book, but it has been reprinted under her real name.

[61] Recall that Anapol is the author of "A Glimpse of Harmony," one of the texts with which I engaged in Chapter 3.

Appendix I

A. IRB Lay Summary

The study will look at the relationship between scientific research on monogamy and broader cultural understandings of monogamy. Its objective is to find commonalities and differences between popular and scientific interest in monogamy.

Participants in the study are research scientists in Larry Young's laboratory at Yerkes Primate Research Center at Emory University. All lab members will be contacted via email. If they want to participate they will contact me. When I meet with each participant, they will be asked to sign a consent form for me to observe their experiments and interview them. They will consent to be identified as researchers in this lab or by name when their responses relate directly to material published in their name.

The study will consist of open-ended interviews and direct observation. Observation and interviewing will take place at Yerkes Primate Research Center. We will discuss the research they are conducting, from experimental design to publication, and coverage or their lab's work in the press. The total time spent interviewing individual respondents will vary, but not exceed four hours per respondent, over the course of several months. Observation of experiments will be non-intrusive and will not involve any commitment of time on the part of my respondents.

Interviews will be recorded and tapes will be stored in a locked filing cabinet in my office. Participants will be referred to anonymously as “a researcher in the lab” or, when their responses are directly related to their own published work, by name.

B. IRB Protocol

1) Background

Larry Young's lab's research on monogamy and voles has received a great deal of attention in scientific journals and in the popular press over the last several years and their research continues to develop and draw a lot of interest. A lot of research on monogamy in the humanities has looked at legal, religious, and moral dimensions of how people think about it and how it is maintained as a social norm. I want to look at how scientific ideas about monogamy shape how people think about it. Stories about scientific research on "the monogamy gene" in the press show us that people are interested in the idea that monogamy is either natural or unnatural for different species, groups, or individual people. In order to further examine the relationship between science and broader cultural ideas about monogamy, I have to understand what scientific claims are being made about monogamy and how monogamy is being studied by scientists.

2. Design

a. My research subjects will be faculty and graduate student research scientists and research staff in Larry Young's lab at Yerkes Primate Research Center.

b. Observation of experiments and follow up interviews will be carried out at Yerkes Primate Research Center.

c. Recruitment
Having discovered that one of the labs out of which genetic research on monogamy was being published was here at Emory, I contacted the head of the lab to see if we could meet and talk. At the time, I planned to write about the labs published work and its popular reception (on David Letterman, in The Nation, on Public Radio, etc.). After meeting with Larry Young and exchanging newspaper and magazine articles on their research, I began to think that it may be more interesting to include the scientists' own thoughts on their process, goals, and how their work was being taken up. At the time, I was very unsure of what that might look like, as I had not visited laboratories. Larry Young invited me to come to the lab and meet other researchers and see the animals. Out of this meeting in December of 2007, during which they told me a bit about their projects and I told them about my interest in their research, grew this project.
My next step will be to contact Larry Young and ask him to forward an e-mail to the lab, soliciting volunteers to be interviewed and to have their experiments observed (see attached). I will meet with researchers individually or in pairs to observe experiments and conduct interviews. Arrangements will be made on an individual basis, depending on the subject's availability and research schedule.

Because the interviews will be discussed in conjunction with the lab's published work, subjects will consent to have their names used or to be referred to as "a researcher" in this particular lab, which does not guarantee confidentiality, as there are less than twenty researchers working in the lab. That this is the nature of my use of their interviews will be clearly explained in the consent form.

d. Procedures

I will:

1) Observe unobtrusively during experiments and occasional lab meetings in order to:

a. Document discourses about animal behavior, specifically formal and informal vocabulary used to describe behavior
b. Compare this vocabulary to my own observations of the experiments
c. Document the discussions about formulation of experiments and conclusions within the lab setting and in preparation of publications

2) Undertake interviews with researchers following such observations in order to:

a. Record their individual responses to experiments they are undertaking

b. Document points of agreement and contradiction concerning the use of technical vocabulary

c. Document individual response to popular reception of specific studies undertaken by individual researchers

d. Evaluate individual response to applied use of conclusions of experiments

I will record my interviews using a hand-held digital recorder and observations by taking notes. I will evaluate my observations and interviews alongside published research and its public reception. This will be a part of my analysis of how contemporary biomedical research on monogamy and popular understandings of monogamy are linked.

3. Confidentiality
Subjects will have consented to be identified in my study. As I collect data, tapes of interviews and related notes will be stored in a locked filing cabinet in my office.

4. Informed Consent

Written consent will be obtained from every participant in the study; see consent form for details.

C. IRB Consent Form

Informed Consent to Be a Research Subject

You are invited to participate in a research study conducted by Angela Willey, in the Department of Women's Studies at Emory University. You were selected as a possible participant in this study because of your affiliation with Larry Young's lab at Yerkes Primate Research Center.

Study Title:

"Science Says She's Gotta Have It": Monogamy, Non-Monogamy and Biomedical Discourse

Description of the project:

I am interested in your lab because of the attention your research on monogamy and voles has received in scientific journals and in the popular press over the last several years. Research on monogamy in the humanities has looked at legal, religious, and moral dimensions of how people think about it and how it is maintained as a social norm. I want to look at how scientific ideas about monogamy shape how people think about it. In order to further examine the relationship between scientific and broader cultural ideas

about monogamy, I want to understand what scientific claims are actually being made about monogamy and how monogamy is being studied by scientists.

Procedures:

If you decide to participate, I will observe your experiments and interview you about your research and how the lab's work in general is taken up in the popular press. We will meet at Yerkes at your convenience. The time commitment will not exceed four (4) hours over the course of several months. Interviews will be tape recorded.

Risks and Benefits:

I will observe with as little intrusion as possible, so that you are minimally inconvenienced. Participation in this study entails no risk to your health or wellbeing.

While participation in the study offers no immediate benefit to you, your participation will contribute to knowledge about the relationship between science and culture, particularly around how monogamy is understood.

Confidentiality:

People other than those doing the study may look at study records. Agencies and Emory departments and committees that make rules and policy about how research is done have the right to review these records. The government agencies and units within Emory responsible for making sure that studies are conducted and handled correctly that may look at your study records in order to do this job include the Office for Human Research Protections, the Emory University Institutional Review Board, and the Emory Office of Research Compliance. In addition, records can be opened by court order or produced in response to a subpoena or a request for production of documents. We will keep any records that we produce private to the extent we are required to do so by law. We will use a study number rather than your name on study records where we can.

Please note that my observations and interviews will be used as part of an analysis in which I discuss the lab's published work and popular reception. By signing below you consent to be identified as "a researcher in the lab" or, if and when your statements relate directly to your own published work, by name.

Voluntary Participation/Withdrawal:

Your participation is voluntary. Your decision whether or not to participate will not affect your relationship with Emory University or Yerkes. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without penalty.

Rights and Complaints:

If you have any questions, please feel free to contact me at 646.660.2610 or awilley@emory.edu. You can also contact my advisor, Lynne Huffer, at lhuffer@emory.edu. If you have questions about your rights as a participant in this research study, please contact Dr. Colleen DiIorio, Chair of the Emory University Institutional Review Board, at 404-712-0720 or 1-877-503-9797.
You will be offered a copy of this form to keep.

Your signature indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you will receive a copy of this form, and that you are not waiving any legal claims,

_____
Participant Signature

_____
Date / Time

_____
Investigator Signature

_____
Date / Time

Appendix II

Interview Guide

Section I: The Media

In reference to the headlines from the slide (see below):

- How do you interpret all of this interest in your lab?
- Do you think they get the science right?
- Do you think your research affects general views about monogamy? People aren't talking about the autism connection so much, why do you think that is?

Section II: The Science

- What are the main research projects in your lab? How long has your lab worked on monogamy?
- How would you describe your research interests?
- How did you become interested in monogamy? / Why monogamy? / What are your goals? / What do you find most important?
- How are the questions you're interested in related to those addressed in Insel's earlier work? I'm thinking in particular of addiction?
- How are promiscuity and autism linked?
- How does your research on voles relate to humans?
- Are you involved with clinical trials?
- Can you explain the link genetic links you've found? In the popular press the idea of "a gene for something" is rather oversimplified – what is the connection between genes and monogamous behavior in your own words?
- The gender questions:
    - your original test subjects were male, right? (How do you determine the sex of the voles? Do you find ambiguity? What do you do if you do?) Why males?
    - Have you repeated the partner preference tests with females? Did results differ?

- Are there gender differences is pair bonding behaviors? Why oxytocin (F) and vasopressin (M)? Do both males and females have both?
- Are there same-sex pair bonds?

- Funding
  - How difficult has it been to fund your vole research?
  - Have you seen changes in funding over the years?
  - Do you think the press coverage / pop interest has had a direct or indirect impact on your funding? Can you use the popularity of your research to help you attain funding? What kinds of things do you say when you write a grant?

Headlines (for media questions):

"Could voles help create the perfect husband?"
-Anne McIlroy, *Globe and Mail*, 6/17/04

"Love rats turned into Mr. Rights"
-Tim Radford, *The Guardian*, 6/17/04

"Tale of vole reversal and possible cure for promiscuity"
-Allan Laing, *The Herald*, 6/17/04

"DNA tweak turns vole mates into soul mates"
-Alan Zarembo, *Los Angeles Times*, 6/17/04

"Monogamy likely a genetic trait, research into voles shows"
-John Fauber, *Milwaukee Journal Sentinel*, 6/18/04

"Gene cure found for cheating lovers"
-*Daily Times (Pakistan)*, 6/18/04

"A drug to tame a cheating heart?"
-*CNN Money*, 6/17/04

"Faithful male? All it takes is the right gene, study says"
-Alan Zarembo, *Los Angeles Times*, 6/17/04

"Injection could trigger end to adultery"
-*Al Jazeera*, 6/17/04

"Gene treatment for male monogamy"
-*The Australian*, 6/18/04

"Extra DNA makes voles faithful"

-Rosella Lorenzi, *Discovery News*, 6/23/05

“For voles, a cheatin’ heart may be in the genes”
-Nicholas Wade, *The New York Times*, 6/10/05

“How geneticists put the romance back into mating”
-Ian Johnson, *The Scotsman*, 7/30/05

“Love is a drug for prairie voles to score”
-Ian Sample, *The Guardian*, 12/05/05

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