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Abominable Knowledge:

Popular Culture in the Science of Human Origins

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A Thesis

in

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Abstract

Abominable Knowledge:
Popular Culture in the Science of Human Origins

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This thesis argues for the generative powers of popular culture and asks what they can bring to a critical understanding of modern science. Drawing on literature in science studies, cultural studies and feminist theory, the project considers in particular how sensational discourses – from monster culture to detective fiction to celebrity exposé – are productive in human origins research, and what kinds of knowledge they produce. It begins by theorizing connections between the scientific and the sensational through a cultural history and theory of missing links. Following is a combined textual and discursive analysis of "Lucy", a partial skeleton whose discovery in the 1970's led to the naming of a new species of ancient hominid. Lucy's case is seen simultaneously as a credible science of human prehistory and an incredible discourse of Western modernity. Her investigation and publication constructed an ape-like specimen (and her scientists) into multiple modern-day subjects, revealing in the process some highly cultural conceptualizations of being biologically human. Moreover, the case demonstrates the intolerable horrors implicit in researching half-human creatures, and the ensuing sensational efforts to humanize our apish beginnings.

Acknowledgements

Although I am told academic research and writing can be an alienating experience, thanks to several people it has not been for me.

Thanks so much to Chantal Nadeau for outstanding thesis supervision. Her razor sharp insights, intellectual generosity and appreciation for the bizarre have been formative in my critical thinking and a source of inspiration. I am also grateful to Kim Sawchuk for providing valuable bibliographic references in the early stages of this project and for helping me see a worthwhile place for pleasure in studies of science. Thanks as well to Peter Van Wyck for introducing me to the limits of discourse and the issue of missing bodies, researched and researching. More thanks go to Bill Buxton, Monika Kin Gagnon and Dennis Murphy for thinking of me at various times.

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fig. 1 The science critic as fan (adapted from Russo and Landsman 2001).

Introduction

> *Abominable* – from the Latin *abominabil-is*, deserving imprecation or abhorence; formed on *abomina-ri*, to deprecate as an ill omen; In medieval Latin and Old French and in English, regularly spelt *abhominable*, and explained as *ab homine*, quasi 'away from man, inhuman, beastly,' a derivation which influenced the use and has permanently affected the meaning of the word (OED 1971).

This thesis articulates and makes sense of some abominations of modern science. Of primary concern to me are the ones that lurk between the privileged domain of the scientific project and the disparaged one of popular culture; the ones that trouble scientific knowledge's appeals to transparency and nature with counter appeals to representation and culture. From its inception, this research has asked the two-fold question of *how* science knows what it knows, and what overlooked strands of the popular roam around in its realm, wreaking havoc on sterilized notions of the scientific.

The science at issue is paleoanthropology, a decidely earthy field that searches for fossil evidence of our human origins, finds it, and proceeds to situate specimens into intricate timelines of hominid development. Paleoanthropology's principle objects are much like my own: missing links between seemingly disparate things. As any Darwinist will tell you, humans are not special. They are subject to the same evolutionary principles as the rest of the animal kingdom, and can be studied accordingly. So too, I submit, can the science of human origins. Somewhere in its history and practice are mixtures that challenge its isolation from other knowledge communities, even the lowliest ones in the epistemic hierarchy. Indeed, to extend the metaphor to its fullest, this study has searched for those "animalistic" forms of knowing that have no place in the official understanding

of modern science, a Cartesian understanding that separates passion from reason, bodies from minds, subjects from objects.

My engagement with paleoanthropology begs to differ, having put me in contact with these and other failed dualisms. It suggests that science constructs its credible facts through highly *in*credible means, that the scientific is never free from the sensational – nor should it aim to be, for the sensational offers aesthetic, conceptual and practical frameworks that establish the scientific certainties we come to know and trust. Moreover, this study invites us to reconsider the degree to which we define those certainties in exclusively biological terms. Knowledge of our collective origins is a dialogue between bones and gaps, materiality and speculation. Telling, though, is that these speculations are never wild, never arbitrary or beyond belief. Rather, they are all too familiar, fitting snugly into modern Euro-American systems of race, class, gender and sexuality, and demonstrating that if the category of human is biological, it is also highly historical, political and social.

Herein lies a second set of abominations examined in this thesis: the ways in which humanity – first and universal humanity – is culturally constructed and inscribed with all the normalizing violence typical of scientific firsts and universals. There is good cause to frame these abominations in postcolonial terms, as others have done in valuable work on the cultural politics of the natural sciences.[1] Scientific firsts and universals lend themselves to sustained criticism from the angles of race, nation and colonial history. My approach has been to build on this existing scholarship and move its lessons into the

[1] My principal points of reference here are Donna Haraway (1989) Primate Visions: Gender, Race and Nature in the World of Modern Science; Fatimah Tobing Rony (1996) The Third Eye: Race, Cinema and Ethnographic Spectacle; Mary Louise Pratt (1992) "Science, planetary consciousness, interiors".

purview of feminist theory – specifically, the intersections between ancient humanity, maternity and girlhood. These were not identities I set out to consider, but Lucy would not have it any other way. My relationship with the fossil femme fatale taught me that there is something uniquely troubling about a set of bones that can give prehistoric voice to modern normativities of Mother and Girl; that can make them seem like foundational and nearly eternal forms of being human (firsts and universals). In a powerful sense, Lucy was a sex symbol of her times – that is, the Pliocene period around 3 million years ago and the cold war years of the 1970's. Much of this thesis analyses the ways in which that symbolism resonates with the scientific knowledge of humanity. The events of Lucy's discovery, investigation and publication offer a spectacular knowledge production narrative through which to trace the makings of a natural human visa ve the makings of a natural woman. In his own essentialist way, the scientist who discovered Lucy, Donald Johanson, concurrs. "Her sex," he once wrote, "grants her the rudiments of a human identity. . . she represents Mother, Gaea, Isis – or whatever history has called the fertility that lingers at the beginnings of our consciousness" (Johanson and Shreeve 1989:30). As we shall see, Lucy's humanity is also bound to her girlishness, a diminutive, wholesome and at times flirtatious sensibility.

This brings us to a third kind of abomination prowling through this study – namely, a fear of the *un*human. The excessive, indeed sensational, lengths that scientists went through to humanize the morphologically ambiguous Lucy speaks to a profound dread of finding humanity's apish roots. Ape-like creatures are the underlying abomination of Darwinian science, placing origins researchers in a difficult paradox of searching for the Things that nobody can bear to know. Even today, amidst sunny

rhetorics of ecological friendliness and One-World-ism, it is this darker edge of paleoanthropology that endures, a hangover from Victorian insecurities over boundary-crossing generally. It is also what makes the science so compelling, and available to comparissons with vernacular versions of the same pursuit. These parallels form another discussion topic in this thesis. A half-human is a half-human, I say, be it authorized by the scientific community, performed by black people, imagined in popular film or documented by Bigfoot enthusiasts. One of my goals is to show some striking likenesses between the Lucys of the scientific world and less beloved creatures in monster culture; in other words, Lucy's uglier side. In these creatures are the psycho-social incentives to fully humanize primitive fossils.

Looking for the monstrous in hominid finds locates this project in its own research tradition, of fandom. The fan, after all, is particularly skilled at identifying the built-in sensationalisms of any kind of knowledge. With a sharp eye and an open heart, the fan is ready and willing to be swept up in the object's thrills and chills. She is very emotional that way, a zealous mixture of obsession, delusion, loyalty and unrequited love. Above all, she takes pleasure in knowing: in learning about the minutia of the product and the production process, in clipping out articles, in making collages, in reading biographies, in visiting halls of fame. These amateurish activities are determined attempts to get closer to the object of her affection. At the same time, she realizes on some level that this is impossible, that there may be no object to speak of beyond its representation. The fan identifies with her object all the same, imagines herself as it, fills its shoes, rendering her unable or unwilling to objectify. I am such a fan, in relation to science and scientists, paleoanthropology especially, and of course Lucy herself. It is a

fandom that resembles one in Constance Penley's (1997) cultural study of NASA. For Penley, there is no stronger critic than a fan because she knows her object better than anyone and can administer a tough-love approach towards it. Being a fan, Penley adds, also makes talking to employees of NASA less intimidating and antagonistic; the scientists listen (3-4).

Equally interesting to me is how such a fan might be disturbing to employees of NASA and the rest of the scientific community, as abominations often are. Science fandom is not only about valuing science, but re-defining it along the lines it supposedly does not follow. It treats science *as* a popular phenomena: an indulgence, a fantasy, a creative and marketable production, accessible and entertaining to everyone – women in particular. Scholarship on the modalities of being a fan remind us that this subject position is predominantly occupied by women who *just do not know any better*.[2] This means that to approach the science and popular culture disconnect from the vantage point of a fan is also to approach it as a feminist, interested in how "a woman's perspective" – fed by daytime television, greeting cards, or what have you – can cause some trouble. That science remains a bastion of male-centric values and practices only reinforces the agenda I share with other feminists "to unearth the politics of epistemology" (Alcoff and Potter 1993:3). Thus, significant time in this thesis is dedicated to cultivating the feminized role of the fan as a critical methodology, and exploring its potential for other media studies of science.

[2] See, for example, Jackie Stacey (1989) "Feminine Fascinations: Forms of Identification in Star-Audience Relations" and Janice Radway (1984) "Interpretive Communities and Variable Literacies: The Functions of Romance Reading".

The science criticism scene is certainly ready for such explorations. In the wake of a science war that pitted scientific realists against social and cultural constructivists (in simplistic and parodic ways no less) an atmosphere now exists that finds any research with constructivist leanings vulnerable to accusations of being anti-science, punitive or obtuse. Add to this what appears to be an emerging intellectual interest in sensory experience amongst cultural theorists, and constructivists are denounced further for being "out of body" – which is to say, in denial about the importance of bodies as a means through which to know the world. What might a research strategy of fandom be able to do to refute those charges? How might being a fan ultimately instill or revive a responsible, embodied appreciation for the world of science? Howlings of this sort echoe through these pages too.

And so, these multiple abominations – four all told – unfold as follows: In chapter one, I consider the curious figure of the missing link as a vehicle to conceptualize broadly about what is sensational about modern science. Ape-men are truly amazing creatures in their tendency to violate discursive taboos. My brief contact with their cultural history and reflections on their metaphoric power begins the task of conflating popular and scientific ways of knowing. It also asks about the legacies of nineteenth century concepts on contemporary cultural theory; whether we dismantle or actually consolidate the divides that haunt us today. As a theoretical effort, the chapter stands as the most abstract of the three. It may also be the most ambitious, attempting as it does to place science studies literature in conversation with some very unruly objects. Less patient readers may want to skip ahead to chapters two and three, in which I re-visit the production of Lucy,

how she has been made legible and legitimate, and the sensational dimensions of that process.

Organized loosely around Isabelle Stengers' (1997) idea that scientists' work is two-faced, with one turned towards their object and the other turned towards their colleagues, I start Lucy's story with a focus on the first. "The Hominid Who" connects her investigation to the narratives of detective fiction. Informed by Diana Fuss' (1995) interpretation of identifications, the chapter moves through Lucy's multiple i.d.'s to illustrate how mysteries carry epistemic value in ancient hominid research. Mysteries function as the humanizing agent in Lucy's case. They build human identities from fossil identifications and thus help answer a defining question of the field: Who was our oldest ancestor? Chapter three, "It Girl", redirects the story to the second face of Lucy's production. Considering her circulation in scientific journals, the chapter examines a connection between the phenomena of scientific publication and star-making. Lucy's popular appeal was fundamental to her acceptance within the scientific community – in fact, identical to it. Using Richard Dyer's (1991) essay on what makes a star a star, I argue that celebrities and hominid specimens are authenticated through the same realist grammar of "behind-the-scenes". Consequently, it is possible to understand the scientific Lucy and the celebrity Lucy on the very same terms. "After the Fact" offers some concluding remarks about this research. There, I perform a textual analysis of up-to-date origins imagery in order to synthesize the abominations of paleoanthropology and grasp some wider implications of its knowledge.

fig. 2 Back cover of the paperback novel The Throwbacks, 1965.

Chapter One

Missing Links: Theorizing Sensational Science

"Meet your newfound ancestor," reads the July 2001 cover story in Time magazine, "a chimplike forest creature that stood up and walked 5.8 million years ago." By the looks of it – its toe bone to be exact – the fossil find represents the oldest known connection to apes in the history of humankind, a missing link that "would eventually develop a large, complex brain. And from that would spring all of civilization, from Mesopotamia to Mozart to Who Wants to Be Millionaire" (Lemonick and Dorfman 2001:50). Such epic brushstrokes are the norm when painting portraits of our beginnings. The lines are dramatic, confident, linear: from murky origins to soaring progress, apish unconsciousness to human intentions. Missing links, we are told, lie at the intersection of these monumental transformations. Part ape, part Man, they are our original heroes, the ones who by chance (or will?) severed their ties to savagery and "started on the road to becoming human" (55). For this, these primal creatures win our fascination, adulation and scientific respect. Here, we might say, is the official discourse on missing links; official because it follows a defining narrative of Western modernity: onwards and forwards. But there have been others.

Alongside all this primordial grandeur lie some different engagements with ape-men. Less prehistoric than historic, these discourses do not stretch back to human beginnings, they hang around the beginnings of evolutionary thought. When Darwin put forth his theory of humanity's descent from ancestral primates he fuelled a vibrant popular interest in missing links that had little to do with origins. Victorian society actively constructed the creature in the image of bourgeois anxieties, turning the link into

symbolic expressions of contemporary concerns. Racial hierarchies, for example, were reproduced along evolutionary lines, with the missing link functioning as a stand-in for blackness. The freak shows of P.T. Barnum are the most vivid incarnation of this masquerade, in which dark-skinned performers were cast as living throwbacks under the exhibition banner, "What Is It?" (Cook 1996) (fig. 3). Some bourgeois do-gooders understood the missing link in class terms. In their hands, the half-human became a representation of the working class, a forgotten connection between beastly poverty and civilizing wealth. Still others associated the missing link with the threat of matrilineal descent and female sexuality. Humanity's bloodline, some feared, had been contaminated by women's indiscretions with lower order primates (Beer 1996).

Anthropologists have long argued that Darwin's concept has thus been widely used but greatly misunderstood. He never proposed a single – let alone living – ancestor that blended the characteristics of modern humans and modern apes, nor did he explicitly envision missing links as a tool for social power. These efforts to distance the study of human development from popular readings are not surprising for a field that profits by keeping up with what Thomas Gieryn (1999) calls a science's "boundary-work". They also conveniently forget or outright deny the ways in which more legitimized readings of Darwin are just as culturally loaded. As one historian explains, for example, anthropologists of Darwin's era got it "wrong" too: "Roaming Britishers at the world's far-flung margins were to see half-men slouch through the forests. Long-armed, bandy-legged, these nightmare creatures were subjective mental projections straight from the bookshelves of *philosophes* and Darwinists" (Eiseley 1958:256). To my mind, dismissing a cultural history of misunderstanding neglects the range of possibilities offered by the

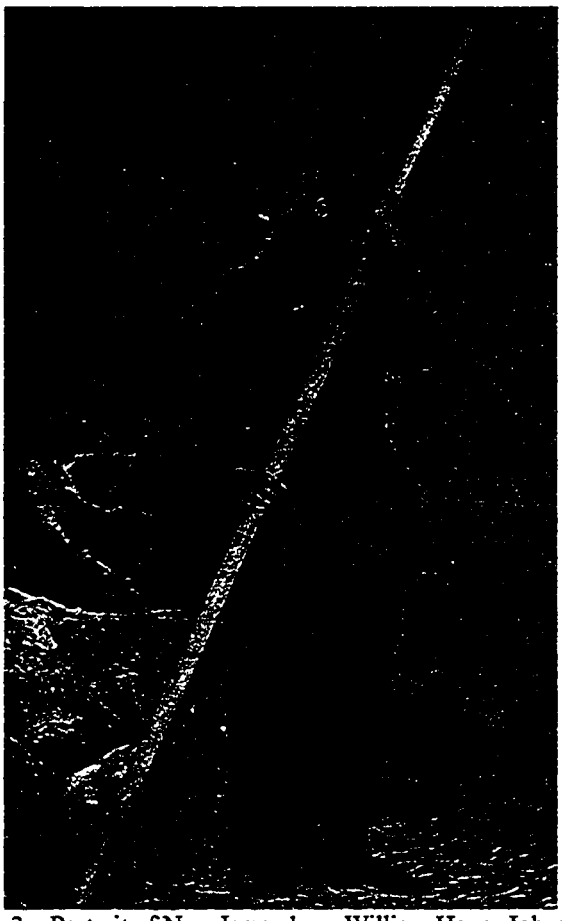

fig. 3 Portrait of New Jersey born William Henry Johnson performing P.T. Barnum's "What is It?", c. 1865 (from Cook 1996).

missing link concept. Mistakes matter too, and it is in fact these nineteenth century visions of the creature that spark my theoretical interest, more so than sagas about the dawn of humanity (an overdone script). In their Victorian versatility/neuroses, demonstrating an outrageous range of ways to assert racial, class and sexual difference, they inspire me to ask questions about what the missing link can do and undo in more recent times.

Incidentally, the times seem ripe for just this curiosity. My interest in ape-men comes in the midst of a current cultural revival of all things evolutionary. Cover stories like Time's, for example, are enjoying a renaissance of sorts as a new generation of hominid fossils are being discovered. The creationism vs. evolution debate is being rekindled through popular science publications and curriculum controversies. Re-interpretations and appropriations of Darwinism are appearing in a range of sites, from management theory to public policy to the creative arts. My intention here is to accomplish a similar "bastardization" of Darwin's ideas, in the spirit of popular Victorian misreadings, with an eye to these contemporary ones, and towards the bastardization of science itself.

The particular questions that I would like to address through the missing link centre on the subject of scientific knowledge and its production, and the sense that what modern science calls a credible fact revealed by credible means is also somehow an incredible one by incredible means. Examples in current technoscientific practice abound: neuro-imaging technologies are being defined through the paranormal mystique of mind reading; organisms engineered through genetic manipulation are understood as frankenfoods or viral time-bombs; missile defense programs are dubbed "Star Wars".

How can we account for these overlaps between the scientific and the popular without seeking shelter in claims that science fact is much like science fiction? While this may ring true, it is also a rather conservative approach to theorizing scientific knowledge, given that the two milieus are so ideologically compatible; a mutual celebration of technology, frontiers and the like.[1] Drawing parallels between them leads to analyses that invariably espouse the same predictable perspective: the fictional is the showpiece for the factual, and the factual is the "dreams come true" version of the fictional. My sense is that the science fact = science fiction route overlooks other meaningful ways in which the "real" thing might relate to the unabashedly fake.

For these reasons I turn to the missing link, on a hunch that this multitalented figure may have something else to give. As an idea and a history, the creature is adept at generating uneasy – at times terrifying – confusions across seemingly disparate poles: ape and human, black and white, poor and rich, woman and man. How, then, can we re-think modern science as a popular phenomena using the link as our guide? What kind of abominations exist in its realm that can address and re-interpret scientific knowledge and knowledge-making? This chapter works through these questions, trusting that ape-men have better things to do than poeticize our origins or naturalize social difference. Indeed, my analysis of the missing link ultimately aims to sensationalize the subject of origins (a trashier pursuit) and socialize those things often assumed to be natural or self-evident – namely, the scientific fact.

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[1] To clarify, I understand science fiction here as a popular genre with a set of particular thematic and formal conventions. See, for instance, Scott Bukatman (1995) "The Artifical Infinite" and Vivian Sobchak (1980) Screening Space: The American Science Fiction Film.

Linking the Great Divide

The theoretical promise of the missing link, as I want to use it, is directly tied to modern science's identity as an autonomous arena of knowledge production. Articulated through what Bruno Latour (1986) has called the "great divide", this identity is built on an imbalanced dichotomy between science and other epistemic communities: local, folkloric, religious, popular. It is mobilized to explain why science is so successful. Science works, says the divide, because it is populated with rational minds and methods. Its strength lies in such principles as logic, reason and objectivity, all of which claim independence from history and allegiance to something supposedly deeper. The success of science, continues the divide, is also a benefit of its cultural isolation – actually, the erasure of culture. The knowledge it produces is distinct from and more valuable than fantasies, fictions, passions and other "distorting factors" that exaggerate reality. Science can draw straight lines between its subject and objects, informing the world about what it *is*, not what it believes itself to be.[2] Other modes of knowing are too circuitous, or worse, they interrupt the lines with all kinds of diversions: personal matters, political interests, commercial investments, feelings. Real science, the divide concludes, (for it so enjoys closure) has shown itself to be immune from such contagion; its workspaces and headspaces are clean and efficient.

How to deal with such a seamless identity? Outright dismissal might be one option if the divide was not such an influential way of framing scientists and their work. Indeed, we can understand a whole generation – maybe two now – of post Structure

[2] Straight-line science is otherwise known as scientific realism; a theory which posits an independent material reality that is directly accessible through the scientific method.

scholarship as an attempt to take the divide's identities seriously and problematize them accordingly.[3] One place to begin is by acknowledging the significance of the very term "identity", a line of critique pursued in the writings of Isabelle Stengers (1997). For Stengers, modern science has no rational essence, cognitive or otherwise. There is nothing intrinsic or atemporal about its constitutive parts. Rather, what the great divide calls "scientific" are qualities that are collectively constructed, defended and authorized at every turn in the knowledge-making process. It is this social dimension of science that deserves more analytical attention, partly because it demonstrates "that it is pointless to search for a noncontextual, general definition of the difference between science and nonscience" (Stengers 1997:80). The current status of parapsychology is a case in point. Despite meeting all the formal criteria of scientificity that are currently in vogue, the field remains on the other side of the great divide. "Scientists have decided," writes Stengers, "that parapsychology is not scientific, and this decision has been taken primarily by those who would otherwise be situated very close to it, namely, psychologists, neurophysiologists, anthropologists and so on" (80). What emerges here is a portrait of a knowledge field whose cardinal, essentialized distinctions – rational vs. irrational, objective vs. subjective, knowledge vs. belief – buckle under the pressure of "science in action", to borrow Latour's term. In this light, the border between the scientific and the nonscientific, though still intact, becomes more about social power than cerebral or methodological purity, because:

[3] I am referring here to Thomas Kuhn's (1962) work The Structure of Scientific Revolutions, which many argue inaugurated the interdisciplinary field of science and technology studies by examining scientific discoveries from an historical perspective.

> There is no science without fiction and there is no fiction without passion. Science is not defined by a particular passion that one would call scientific. Each science is born from the fact that the passions that created its field have found the affective, intellectual, and social means of making history together (Stengers 1997:149).

Supplementing Stengers' eloquent argument are studies which historicize the great divide itself, particularly the wedge it drives between elite science and popular culture.

The literature in this area is extensive and worth mentioning briefly, if only to contextualize my own. Scholars like Barbara Maria Stafford (1996) and Guiliana Bruno (1992) remind us that scientific and popular cultures have not always been at odds. The early Enlightenment period saw scientists openly embrace ontologies and epistemologies that are now dismissed as sensational.[4] Lorraine Daston (1998), moreover, has convincingly argued that the crucial barrier between "hard facts" and "wild imagination" emerged in its abstracted ideal around the mid-nineteenth century, with the professionalization and mechanization of scientific research. More contemporary histories include work by Susan Squier (1999) and Emily Martin (1996). Considering the intersections of recent scientific research and science fiction on declining male fertility, Squier makes the case for reading the popular in the scientific. Similarly, Martin's work on scientific representations of the egg and the sperm illustrates – to use the article's title – "how science has constructed a romance based on stereotypical male-female roles."[5] As a body of diverse and largely feminist research, studies like these give strength to

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[4] Stafford and Bruno are predominantly interested in the historical spectacularization of science. See, for example, Barbara Maria Stafford (1996) Good Looking: Essays on the Virtue of Images. and Guiliana Bruno (1992) "Spectatorial Embodiments: Anatomies of the Visible and the Female Bodyscape".

[5] See Lorraine Daston (1998) "Fear and Loathing of the Imagination in Science"; Susan Squier (1999) "From Omega to Mr. Adam: The Importance of Literature for Feminist Science Studies"; Emily Martin (1996) "The Egg and the Sperm: How Science has Constructed a Romance Based on Stereotypical Male-Female Roles".

Stengers' holistic philosophy by effectively pointing out instances, and sometimes whole eras, of its viability.

I would like to propose the missing links are both metaphors of Stengers' holism and additional historical sites of discursive crossover, and as such they point to specific ways through which to challenge the great divide. Dislodging science from abstraction, as Stengers et. al do, encourages just this kind of work, for how can one seriously engage with inaccessibles? Ape-men, on the other hand, are highly accessible – that is, locatable in particular periods and places. In them we find a history of discursive kinship and resemblance so appropriate to their name. From science to side shows, they defy the wedge and allow us to make some taboo connections, problematizing the either/or-ness that we ought to retire. This is to say that the track record of this curious creature is one that mirrors its own metaphor: evoking relations between categories over classifications of them.

Ape-men are also accessible in ways similar to Ann Cvetkovich's (1992) reading of the worker in Marx's Capital.[6] Considering Capital as a mystery narrative, Cvetkovich asserts that the worker is a sensational metaphor for the social relations of capitalism. Marx provides graphic descriptions of the worker's physical pain in order to make the violent workings of the market system apparent. This is a powerful use of sensational representation because it can embody the obscure dynamics of capital in the form of a suffering person. Touching us, it breathes life into complex concepts and forges openings

[6] Cvetkovich's reading appears in the final chapter of her book Mixed Feelings: Feminism, Mass Culture and Victorian Sensationalism, which asks about the political value of sensationalisms found in women's popular literature in the nineteenth century. Closing her study with an analysis of an economic text provides another strong example of the incredibilities within credible knowledge forms.

for criticism from those who might otherwise be apathetic. The missing link can be viewed in the same light: a figure that is able to give the relatively intangible workings of scientific research emotive force in the imagined (always imagined) life and times of a beastly biped.[7]

Indeed, the missing link has been recognized for its sensational power since its early days in the Victorian imaginary; so much so that its physical absence was an absolute must. In her 1996 essay "Forging the Missing Link" Gillian Beer recounts the dilemma, arguing that the creature was such a provocative means of undermining carefully managed boundaries that it could only exist in the realm of representation. To discover the ape-man in its skeletal form would be to materialize all that the link had come to signify, an intolerable though inevitable scenario with each more primitive fossil find. In this way, the scientific search for man's earliest connection to the apes carried with it assurances of psychic, social and political upheaval. Beer writes:

> Chains are two chains, not one, without a link. The fascination with the idea of the link was also often the dread of finding it. Once found, mankind would indissolubly be part of the material order. So long as the gap remained, mystery prevailed and the supremacy of the human could remain intact. Perhaps for that reason, the "missing link" was most often imagined as monstrous, a discovery to be dreaded not welcomed (129).

This is the very attraction missing links hold for this thesis: a possibility of making monstrous and demystifying not only the "origins" of humanity, but also the great divide's exaltation of science generally. The first possibility is one I take up in later chapters on Lucy, paleoanthropology's famous hominid fossil of the 1970's. Denied

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[7] To be sure, science and its knowledge practices are a mystery comparable to the one Marx unravels on the industrial shop floor. Its seemingly impenetrable layers of method, protocol and technical knowledge leave many outsiders wondering (or not caring) how it all happens, and insiders often safe from scrutiny – fertile conditions for the great divide.

missing link status herself, Lucy's frantic construction as human-like reflects precisely the ominous quality of our beginnings, as well as the popular discursive efforts to model ancestors in the image of modern man. The second possibility is one I turn to for the remainder of this chapter. By drawing mainly on scholarship in the social theory of science, my analysis will attempt to consider how disruptive the missing link can be to our understanding of science's privileged identity.

Visualizing the Invisible

We cannot underestimate the significance of the missing link's missing-ness in origins circles, nor its value in understanding how scientific facts are generated through sensational means. Surely what is most remarkable about this creature is its perpetual invisibility, the sense that it is always and, as Beer reminds us, necessarily just outside of view. It is a sense generated through a lack of fossil material as well as an absence that was built into the evolutionary concept. Darwin, for his part, was always evasive about the creature's existence, saying only in the Origin of Species that "much light will be thrown on the origin of man and his history" (1859:373). Twelve years later in Darwin's The Descent of Man, the link became more substantial in theory, but remained speculative in empirical terms: "...man is descended from some lower form, notwithstanding that connecting-links have not hitherto been discovered" (1871:514). Even today, after over a century of fossil hunts dedicated to finding those links, the ultimate connection is nowhere to be found. Consider, for example, the ancestor featured in the recent issue of Time. At 5.8 million years, the primitive hominid species, *Ardipithecus ramidus kadabba*, is positioned near the beginning of the evolutionary line,

but not the very beginning. That spot is reserved for an as yet undiscovered piece of evidence expected to date around 7 million years, the "last common ancestor" that "should have features reminiscent of both apes and humans. . ." (Lemonick and Dorfman 2001:54).[8] We can begin to posit all sorts of reasons for the missing link's perennial no-show in origins research. One possible explanation is that, like the Victorians, contemporary Euro-American publics also need the link to stay missing (which begs the question, what kind of boundaries does the link symbolically undermine today?). Another possible reason centres on a scientific field's imperative for self-preservation. Often described as a "gap in the fossil record", the link's continued absence gives paleoanthropology insurance against its own extinction. There will always be yet another ancestor to find, and thus another expedition to launch.

If we can accept that the missing link, for whatever reason, benefits from being missing, we can also begin to ask what makes it possible for us to entertain the idea that it exists at all. How is it that a supposedly invisible object is still somehow visible, that is, available for discussion, debate and discovery? What makes this fantastical Thing plausible enough to be taken seriously by a scientific community, and "corrupted" by popular ones? At issue here are the ways in which a creature understood as absent can simultaneously be made present. Latour's 1986 essay "Visualization and Cognition" tells us that this problematic is in fact the defining one of modern scientific research. This is because modern scientific knowledge-building and dissemination has, as a basic

[8] Lest we forget the second major fossil find of recent years, *Orrorin tugenensis* a.k.a. Millienium Man, a 6 million year old contender in the scientific competition for true human ancestor status. Brought forth by another team of researchers, the specimen disputes the position of *Ardipithecus ramidus kadabba* (Lemonick and Dorfman 2001:54-5). More important for this discussion, though, is that it too does not qualify as the last link between humans and apes.

functionalist rule, the need to bring things that are far away closer. We might think of this need, as Latour does, in a postcolonial sense of transporting geographically foreign things back to centres of power, or we might think of it more broadly as the movement of visualizing invisibles. For Latour, the dilemma is solved through the production of "inscriptions": diagrams, tables, labels, photographs and other visual materials of scientific practice. In a literal way, inscriptions actualize and legitimize those objects that would otherwise seem purely fictional by bringing them into perceptual, and thus conceptual, view (seeing is believing). What once lay beyond the scope of vision is re-situated up close. So effective they are at this crucial task that scientists favour inscriptions over the natural objects and/or phenomena they seek to know. Latour elaborates:

> Scientists start seeing something once they stop looking at nature and look exclusively and obsessively at prints and flat inscriptions. In the debates around perception, what is always forgotten is this simple drift from watching confusing three-dimensional objects, to inspecting two-dimensional images which have been *made less confusing*. . . The "objects" are discarded or often absent from laboratories! Bleeding and screaming rats are quickly dispatched. What is extracted from them is a tiny set of figures. This extraction. . . is *all that counts*. Nothing can be said about the rats, but a great deal can be said about the figures (16-7).

The case of the missing link seems just as extreme, though with no bleeding and screaming, also unique. Origins researchers do not get to drift from the three dimensional to the two dimensional, since there is no natural object to work with. All that is at their disposal in their quest to know an absent link are the images that represent it, of which there is no shortage. Some take the form of bodies and their behaviours, others take the form of empty spaces in the human evolutionary line to be filled in at some later date. Inscriptions like these begin the work of making the link credible. They make it less

confusing, less *far-fetched*, much like bleeding and screaming rats become, ironically, more real once depicted.

The directive now, it would seem, is to analyse missing link imagery in an effort to pull out what is at once scientific and sensational about them. Not so, according to Latour, who is critical of strictly textual approaches. They tend to "offer a mystical view of the powers provided by semiotic material" and overlook the fact that these inscriptions move around in the world in patterns that are equally if not more relevant (6). Better to look at how these tools of visualization circulate to mobilize support for a given scientific single image.[9]

I agree to some extent with this line of argument, if for no other reason than my disappointment with the "content" of much missing link media. Pictures and descriptions of ape-men are only so interesting, a point to which I will return. And yet, the ape-men of science become more interesting when we begin to notice how they look relative to the ape-men of popular entertainments. This, Latour might argue, is one pattern of circulation that warrants consideration, and gets it periodically in this thesis. Another is one I want address now – namely, how those very patterns are framed, and how we might call them sensational.[10]

Evelyn Fox Keller's (1992) work on secrets provides an intriguing point of entry to this question of sensational patterns. In a set of historical papers she notes how the

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[9] The etymology of the term "evidence" continues Latour's argument. From the latin word "evidere" meaning "to see" this currency of scientific knowledge is bound to a *process* of visualization (not a static characteristic).

[10] A tension emerges at this point in the discussion, a subplot to my analysis. On the one hand stands bleeding and screaming rats and similarly sensational objects of scientific investigation. On the other stands patterns of image circulation that, I am arguing, are equally if not more thrilling. The tension, it would seem, lies in the question of what makes something sensational, the unknown/confusing thing itself or the vocabulary that represents its unknown-ness?

gesture of making invisibles visible in scientific research has been consistently framed as process of disclosure. Predating the Enlightenment, this instrumental language of secrecy has a long record of turning scientific inquiries into dramatic and gendered seductions:

> The ferreting out of nature's secrets, understood as the illumination of a female interior, or the tearing of Nature's veil, may be seen as expressing one of the most unembarrassedly stereotypic impulses of the scientific project. In this interpretation, the task of scientific enlightenment – the illumination of the reality behind appearances – is an inversion of surface and interior, an interchange between visible and invisible, that effectively routs the last vestiges of archaic, subterranean female power (Keller 1992:41).

Whispers of female essentialism aside, Keller presents a fabulous articulation of the sensationalism written into the scientific method, "a *method* for 'undoing' nature's secrets" (41). To begin, it effectively re-casts sober procedures of knowledge-making as a series of titillating revelations of hidden things. Revelations, moreover, are made inevitable in so far as the construction of secrecy is also an invitation to exposure that few would decline. What is more alluring than a secretive nature? Feminized as such, it lies waiting to be discovered, available and enticing in its promise of astonishment then conquest – the scientists', that is. A more aggressive expression of this interlude comes from a science-watcher tracking origins research in the 1980's:

> In their laboratories I have observed an array of scientific wizardry with which scientists are wrestling unexpected secrets from teeth, scraps of bone, and flakes of stone. And from this flood of new knowledge comes a far-reaching result: With considerable confidence, scientists are now tracing our lineage as bipedal creatures back at least four million years (Weaver 1985:579).

Nature in this instance seems less willing to share her secrets, but ultimately conceeds. The ensuing "flood of new knowledge" indicates that the dirty deed was successful, spawning new information about our prehistoric past. Note the rhetorical link here

between scientific learning and the release of sexual fluids, evoking perhaps a fuller meaning of the term "seminal knowledge". These and other erotic narratives of visualization ultimately suggest that secretive objects of inquiry are secondary to revelations themselves, that it is the very act of disclosure that invests them with their particular epistemological worth. Without it, the object would remain meaningless, outside of science's knowledge range, invisible.

Knowing this, we can pause to appreciate just how emblematic the missing link can be for a "visual culture" reading of sensational science. An object that is not there, the creature speaks directly to the demand of making things apparent by highly discursive means. The link, we might say, is a radically representational organism. It shifts our attentions away from materiality – that which the great divide considers the backbone of credible science – and towards the generative potential of inscriptions and their movements. The link also seems to embody the scientific value of secrecy. For if Keller is correct in saying that dramas of knowledge production need to be re-enacted again and again "at ever-receeding recesses of nature's secrets," then the link stands as the ideal knowledge quest. Its drama is never-ending because its recessions are never-ending, a secret that is never entirely divulged, and produces volumes of credible scientific facts in the effort.

Exaggerating the Banal

We can be sure that in the process of becoming visible, the missing link has a history of becoming *extraordinarily* visible. As if to compensate for the material lack, written, verbal and visual representations have gone the extra mile in making this creature

known, the effect of which has been to construct an otherwise banal being into something awesome. I use the word banal here in the belief that the various bodies and lives of this creature are, at a certain angle, dull. Can one honestly be enthralled by the idea of a primate going about its business, searching for food, shuffling along, looking around? Major motifs in the imagined lifestyles of these creatures, these boring activities are rehearsed over and over again with a gravity reserved for only the most profound contributors to the human experience. The Leakeys' 1976 debut of hominid footprints carry the point. A fitting example of the missing link's absence, these impressions of something-once-there were found in northern Tanzania. The prints were embedded in volcanic ash and identified as visible traces of the oldest direct ancestor, unleashing a torrent of aggrandizing rhetoric. Wrote Mary Leakey in the pages of National Geographic:

> . . . following [the footprints] produces, at least for me, a kind of poignant time wrench. At one point, you need not be an expert tracker to discern this, [the creature] stops, pauses, turns to the left to glance at some possible threat or irregularity, and then continues to the north. This motion, so intensely human, transcends time. Three million six hundred thousand years ago, a remote ancestor – just as you or I – experienced a moment of doubt. The French have a proverb: Plus ça change, plus c'est la même chose – 'The more it changes, the more it stays the same.' In short, nothing really alters. Least of all, the human condition (1979:453).

How these prints are intrinsically riveting escapes me; they seem as lifeless as the volcanic ash that preserves them. It takes a mini drama of uncertainty, appeals to universals, and a dash of French to transform commonplace, *all too human* actors and activities into something special.[11]

[11] Whether it is even possible to access the banality of the missing link is another difficult question. It assumes an ability to read through the discourses that are largely responsible for its existence, in order to arrive at the definitive Thing.

Even more transformative than the Leakeys' footprint fantasy are b-movie versions of the missing link, particularly MGM's monster flick Half Human (dir. Crane 1958). This is the American version of Inoshiro Honda's 1955 original Jujin Yukiotoko, which follows an expedition to the mountains of northern Japan in search of the abominable snowman. The U.S. adaptation takes the same storyline and adds some extra scenes in an American research facility, giving us a fictionalization of Latour's note on the scientific need to bring foreign things (monsters, Japanese scientists, Honda's film) closer. Key to this discussion is one of those scenes, composed of three inquisitive anthropologists, a medical examiner and a dead ape-boy, identified as the snowman's son. It is after the autopsy. Circled around the examining table, the doctor shares his conclusions about the nature of the creature stretched out before them. His words are carefully chosen and delivered over some overly meditative gestures: removing his latex gloves and apron, washing his hands, lighting a cigarette, pausing before exhale. These, we can surmise, are findings of immense importance:

> Examiner: It's simply fantastic. If I hadn't performed the surgery myself I would never have believed it.
> Anthropologist: What did you find Karl?
> Examiner: [pointing to cranium] One half of the skull vault is formed exactly like that of a human being. The other half is animal like. [pointing to throat] The respiratory system is almost identical to ours, as are the lungs. The vocal chords are something that I have never before seen. They are not sufficiently developed for speech, yet the throat palate proves that he could bellow like an animal, and yet cry and whimper like a human being. [pause] It is my belief that this species if one half animal [longer pause] and half human (dir. Crane 1958).

The anthropologists appear shaken by the news, and then proceed to ask a series of pointed questions about the organism's age, development, capacity for language and thought, disposition, even sexuality. The examiner answers each to the best of his

expertise, and in doing so, stretches out the scene to absurd lengths, especially given the focus of their investigation. Indeed, what is most striking about the tedious information session is the stark juxtaposition of excessive "scientific" performance and, by the looks of it, a stuffed monkey – inert and completely uninteresting. Low budget monster movies have a special talent for expressing these contrasts between the hyperbolic and the ordinary. Without the special effects to make the monster materially astounding, films like Half Human rely on descriptive overkill, overemphasizing the incredible quality of the missing link itself relative to what the movie can supply in terms of a physical object. From this comes a decidedly shoddy feel to these offbeat elaborations of the creature. And at the same time, their overkill forms a clear parallel to how "real" science must likewise talk-up its objects and make excessive its knowledge claims.

Pierre Bourdieu (1975) describes this phenomena as science's "logic of distinction". This logic treats knowledge production as a fundamentally social pursuit, undertaken by professionals interested in making a name for themselves. For a given discovery to get noticed and eventually accepted amongst a sea of competing discoveries, it must be able to stand out in the research community. The scientist who speaks for it must illustrate what makes it exceptional. This is largely achieved through being the very first and only one to make the claim public. "A scientist who makes the same discovery a few weeks or a few months later has been wasting his time," writes Bourdieu, "and his work is reduced to the status of worthless duplication of work, already recognised (and this is why some researchers rush into print for fear of being overtaken)" (26). I am less interested in the careerist focus of this analysis than the space it allows for thinking about how facts-in-the-making necessitate overt appeals to novelty and originality. The

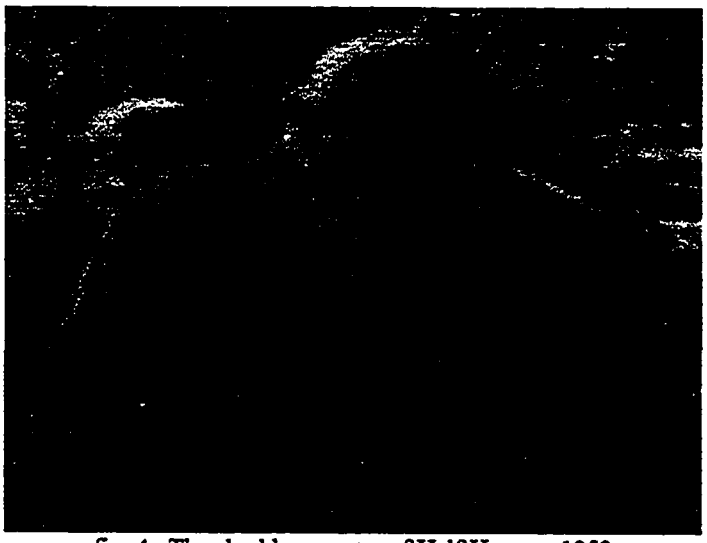

fig. 4 The shoddy monster of Half Human, 1958
(from Mysteries of the 20th Century).

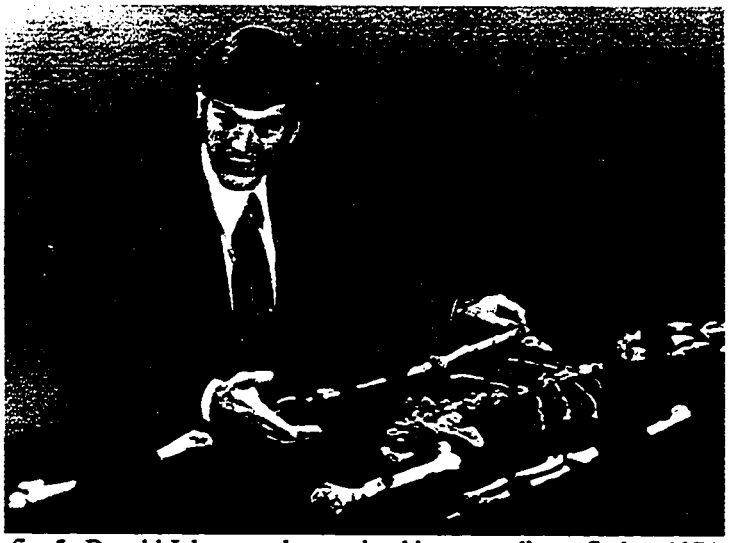

fig. 5 Donald Johanson showcasing his extraordinary find, c. 1974
(from The Academy of Achievement).

conventions that begin to surface are, for lack of a better word, sensational: *All new! Never before seen! Feast your eyes on this! You won't believe it folks!*. . . and so forth. Scientific discourse, we could say, has at its social centre an imperative to make its knowledge impressionable to the greatest number of people – a knowledge that can cause a sensation.

The pressure mounts for a given knowledge claim when we consider that making an impression is not quite enough, that the task of a discovery if it is to be truly successful must *change* the research community into which it is introduced. What does this mean? Simply that the credibility of a scientific fact can be measured in the degree to which it is taken up by a network of scientists, to the exclusion of contradictory claims. The dilemma, however, is that few if any researchers are receptive to new knowledge, preoccupied as they are in their own set of investigations that may very well be pointing to those contradictory claims. New knowledge, Stengers tells us, must therefore be able to address certain questions raised by fellow researchers, questions which she aptly phrases in the language of Things: "Can I incorporate this "thing" into my research? Can I refer to the results of this type of measurement? Do I have to take account of them? Can I accept this argument and its possible consequences for my object?" (83). Stengers insists that these criteria are what make scientific discoveries risky ventures. If accepted, they have the power to destroy years of work, or take it in radically different directions. If rejected, the risk is that useful knowledge – knowledge of potential use to the research community – may be lost. With so much invested, "wowing" the skeptics, it would seem, becomes a major concern.

In his own way, Thomas Kuhn (1962) alludes to this same concern when he explains how anomalies make it onto the scientific radar. Kuhn argues that research findings that are anomalous to "normal science" (a.k.a. the received wisdom and practice of the day) are characterized by resistance at every stage. Guided by the principles and practices of an established paradigm, scientists will actually often overlook any deviations from the norm because they do not fit into that paradigm's framework of expected results. It is only after extended exploration of the anomaly, accompanied by the alterations of normal science to allow for that very exploration, that new facts can emerge – by then hardly novel (52-4). Indeed, by then they should appear to be part of normal science, or at least exhibit the beginnings of a new norm. Under these circumstances – the structural circumstances of all scientific discoveries – it makes sense that a given finding would require layers upon layers of sensationalizing discourse in order for it be incorporated, and eventually rendered *anything but* sensational. The case I am trying to build here is for making mountains out of molehills, for leaving no detail about a finding's value unsaid. This obligation in mind, we can see how scientific knowledge itself constitutes a kind of stuffed monkey turned marvel: humdrum to the naked eye, fabulous to the scientific one.

Affecting the Unaffected

Implied thus far is a third trajectory along which we can theorize science as a sensational practice, and where we find once again the missing link as a promising point of reference. In as much as the figure is about (in)visibles and (un)remarkables, it is also about affect, that phenomena which finds our bodies and minds stirred beyond the usual.

Being the filthy, frightful creatures they are, missing links have the power to do just that. Theirs is a history of thrilling and chilling the many who have imagined them, or as has sometimes been the case, spotted them in the middle of the wilderness. These latter experiences, of sighting ape-men, seem especially charged. Encounters of this sort implicate two sentient beings: perceiver and perceived.[12] They raise hairs and heartbeats, make eyes go wide, jaws drop, feet run. Simultaneously, a cultural narrative exists to channel the experience, giving it a framework to express the horror.

The story begins somewhere near the edge. A person or group of people are traveling to a place of isolation. It may be a forest area, a mountain range, a desert or some other harsh terrain that evokes a "no man's land" sensibility, off-limits to all but abnormal men. The narrative is then punctuated by the sasquatch sighting proper, always sudden and chaotic, if not entirely unanticipated for those who seek it out. These meetings are always beyond the scope of standard inquiry or assimilation (odd considering how standard the meetings themselves have become). Following the encounter are the multiple and ardent efforts to speak about the event, sometimes only after years of denial. All possible discursive means are called upon as the witness tries to describe what happened. Ensuing testimony may read like a science article, folk song, bad movie, cryptic riddle or some combination thereof; less a documentation of the ape-man proper than an emotional flashback for the person who saw it. A dizzying number of such sighting reports are made every year, many of them over the internet. Published on the website Bigfoot Encounters, one man shares his typical tale:

[12] It is interesting to note that sightings scenarios do not always allocate the roles of perceiver and perceived to the witness and creature, respectively. Many people have reported feeling watched by things they cannot make out in return. This seems to add to the thrill.

Lake Tahoe, California
My name is [omitted], I've been keeping this secret since around 1986 and didn't know who I could tell without sounding like a nut, but it's been bothering me, and I hope you are the appropriate person to contact regarding this matter. Here is what my wife and I saw. During the late summer of 1986 my wife Mary and I were driving east on highway 50 heading toward Lake Tahoe at about 11:30 p.m. We were about 25 to 30 miles west of Lake Tahoe when we approached an S curve. As we made a right turn, the road curved toward a mountainside and then turned away to the left. While making the right turn however, our headlights were facing the side of a hill and something else we were not prepared for.
About 40 yards directly in front of us, we saw a huge hairy man like creature walking along the side of this hill at the roadside our headlights were directly on it and there was no mistaking what we saw at that distance, as we made the left turn away from the hill the thing disappeared in the darkness.
My wife and I stared off ahead, and as we drove a short distance, both turned to look at each other and we said, "did you see that" I knew I hadn't imagined it, because she saw it too.
Now the problem was who we could tell without sounding crazy, so we never told a soul, but I've been searching for the right person to tell because it's been eating at me for all these years, I hope you are the person I've been seeking. Thank you in advance, and by the way, just so there is no question about my sanity, I am a sworn peace officer for the state of California, and just telling you this could ruin my reputation and make me the butt of jokes for the next ten years.
Name Withheld by Request (http://www.n2.net/prey/bigfoot).

What is telling in this and other reports is the tension between genuine fear and the necessity to somehow remain objective, or at least convey that intention. Credibility and an expression of intense incredibility are the twin requirements in this endeavor, which in addition to sighting reports, employ various other techniques: leftover hair and stool samples, mythology, anatomical descriptions, dreams, taxonomic and phylogenic guess-work, photographs of the site, and so on. Together, this frenzy of meaning-making, a kind of emergency of representation, draws attention to the ways in which dispassion and passion are necessary partners in constructing knowledge.

My suggestion is that the partnership holds true even as we move further into legitimate science and away from personal anecdotes and the wonky field of cryptozoology (the study of mysterious creatures). On some level, this is not news. Official science has not completely banished emotional experience from its repertoire. Most understandings of legitimate research make some room for its unruly force, limiting it role to the very beginning of an investigation (Eureka!) or perhaps its tail end (Ta Da!). Commonly called the "wonders of science", thrills of this ilk are all about the transcendent possibilities science can offer. They are used to inspire future scientists and validate the activities of current ones. In their evocation of romantic sublimes, they also function as high culture versions of sensationalism, elevating scientific inquiry to magical plateaus where discoveries just happen, technologies just appear and scientists are overwhelmed by the splendor of it all. Luce Irigaray's (1984) favourable interpretation of wonder adds to the glory. In an essay that considers the writings of Descartes, she describes it as:

> The bridge, the stasis, the moment of *in-stance*? Where I am no longer in the past and not yet in the future. The point of passage between two closed worlds, two definite universes, two space-times or two others determined by their identities, two epochs, two others. A separation without a wound, awaiting or remembering, without despair or closing in on the self (75).

Irigaray continues by saying that once an object is no longer unknown, it loses "the quality of wonder, which is no longer pure" (75). The seductions presented by her theory are extremely powerful. They lay down golden paths that lead us away from the tyranny of, amongst other things, history, language and the subject. These paths may very well exist, a possibility which I will neither refute nor interrogate. Who wants to kill wonder? Suffice it to say, however, that the chances these paths have of flourishing amongst

scientists and their institutionalized forms of knowing are slight indeed. It is in this spirit that I question the wisdom of praising a pre-discursive wonder in modern science.

As a metaphor for scientific research at large, missing links do not bring to mind wonder anyhow, denying us such pretty pictures. Heavy with cultural baggage and fleshed out through such a diversity of "vulgar" discourses, they bring us back into the world because they *are* of this world: hairy, smelly, lumbering, repulsive. To suggest that affects of their breed participate in knowledge production exchanges poetic communions for something more base. It reads the scientific project as a lowlier narrative of enthusiasm, cathexis, pleasure, fear, excitement, tears, terror.[13] The narrative, moreover, is a productive one. Whereas wonder functions as an emotional accoutrement, adding shine (or concealer?) to the black boxes that science builds, missing link affects help construct those boxes at every stage. They work with the struggles and messy operations that bring unknowns into the known because they are too restless, even violent, to settle for inspired beginnings and celebratory ends.

Here we should proceed with caution, or at least acknowledge what it means to involve raw feelings in fact-making. Affect's presence can wind up making the scientific fact seem natural, since perception itself is natural. The bodily responses of an inquiring subject have a tendency to announce the truth of what is being envisioned, a scenario expressed in the phrase "I know it is true because I feel it". We believe the senses, especially if they are intense, more than any modality of knowing. Such is the epistemic

[13] I am adopting Cvetkovich's list here, when she describes the possible range of affective experience within sensationalist representations. Cvetkovich also informs my desire to move affect in science away from wonder visa vis the missing link. For her, the feelings associated with what is "sensational" are as valuable as those associated with the sublime. The difference is that the former are often rejected on the grounds of being inferior, feminine and trashy (35).

power of emotional resonance, embroiled in a slippage from the visible to the sensible to the real.[14] This is arguably the approach taken by molecular biologist Barbara McClintock (1902-1992), who foregrounded "I know it's true because I feel it" to the point of her own professional marginalization. According to her biographer (Evelyn Fox Keller), McClintock sought a scientific knowledge of her objects through a kind of emotional empiricism – what she called a "feeling for the organism". She mixed the usual scientific techniques of rationalization with such renegade ones as meditation, empathy and that mystical favourite, female intuition. That McClintock was so successful in her research, making several important discoveries in her field, raises questions about the truth-value of affective modes of inquiry. Does an epistemology guided by feeling generate a clearer understanding of nature? Does it make science itself more natural?

Not nearly, and for reasons best explained by returning to Cvetkovich's own inquiries into affect. Cvetkovich's particular axe to grind is with those that would essentialize affect in relation to mass culture, including some feminists. The idea that mass culture manages or releases affect through it own particular set of representations assumes that affect has a life outside of those representations.[15] Cvetkovich takes issue with that argument, maintaining that affect is not beyond the discourses in which it operates. Affect, rather, is constructed by the images and ideas that provoke it (26-44). A second way that affect can be figured as a construction is through the very role to which it is assigned: "to signify the concreteness or reality of the representation" (23). For

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[14] It is one of the greater ironies that a practice dedicated to explaining the natural world – frequently declaring a monopoly on its knowledge – often downplays the most naturalized signifier at its disposal.

[15] See, for instance, Brian Massumi (2000) "Too Blue: Colour Patch for an Expanded Empiricism", in which the author argues for an unassimilable, free-form quality of affect.

science, these propositions imply that there are no passions we can point to as signs of a real discovery – a discovery of the real – since those very passions are created by the discourses of discovery. They are part of the symbolic structures that given them their expression, or repression, as the mainstream scientific case would often indicate (30). In other words, "I know it's true because I feel it" cannot be easily trusted, and Barbara McClintock is not necessarily more accurate because feelings are explicitly mobilized in her research. Affective science is not more natural science, but one that finds itself deeper still in culture.

Is this Hybridity?

Where has the missing link gotten us? Hopefully, far enough away from the great divide to recognize its artifice, without minimizing the social particulars of the scientific field. But if we can now say that modern science has an intimate relationship with sensationalism – in its patterns of making things visible, in its rhetorics of hyperbole, in its instrumentalization of feelings – the question remains of how to characterize that intimacy. If not a divide, then what? Given the nature of our conceptual tool, it would seem reasonable to entertain the idea that we are dealing with a textbook case of cultural hybridity; two distinct "species" of discourse destabilized through their presence in a single figure. The missing link, however imagined, lends itself to this contemporary postcolonial theory. Like hybridity, it has roots in Victorian intellectual history. Like hybridity, it speaks the language of the in-between. Further, it invites the possibility that the boundary between humans and animals works in tandem with the boundary between the scientific and the popular. On one end lies science and humanity: rational, good with

tools, in control; on the other end lies popular culture and what we think of as animalistic: instinctive, corporeal, wild. As a hybrid, the missing link combines both sets of polarities into a third knowledge practice, challenging their stability and turning difference into a sort of partial sameness. Robert Young's (1995) conceptualization of hybridity is perhaps more nuanced, described as "a bizarre binate operation, in which each impulse is qualified against the other, forcing momentary forms of dislocation and displacement into complex economies of agonistic reticulation" (27).

My analysis of missing links and their critical potential circles these very possibilities of dislocation, displacement and third practices. But there is reason to be suspicious of them, to keep them at bay, and maybe do away with them entirely. To characterize the ape-man as a hybrid, after all, forgets the early history of the figure, which was more about establishing difference between not-yet-humans and "real" humans (white, male, middle-class) than establishing sporadic equivalence. Contemporary renditions of the link are arguably fashioned in a similar vein, suggesting perhaps that normative images of humanity are what count most, and that any deviation from the usual is only that: deviant. In a related point, hybridity in its current usage may also be more connected to its nineteenth century heritage than we would otherwise believe or want. Young explains:

> Hybridity in particular shows the connections between the racial categories of the past and contemporary cultural discourse: it may be used in different ways, given different inflections and apparently discrete references, but it always reiterates and reinforces the dynamics of the same conflictual economy whose tensions and divisions it re-enacts in its own antithetical structure (27).

The risk with hybridity today, continues Young, is that it regenerates the old categories of race from which it came, and worse, misrepresents the extent to which those categories were fixed in the first place.

Young's warning brings us to a second reason for doubting hybridity's value in relation to the missing link and modern science. Hybridity may not be able to transgress the very binaries it presumes to trouble, be it race or in our case, forms of knowing. How might the ape-man, as a hybrid, perpetuate the divide between the scientific and the popular? Does it too reiterate and reinforce both categories through analytical exercises of compare and contrast? And does a hybrid reading of missing links also naturalize those sides, by virtue of hybridity's conceptual ties to biology and the undeniably naturalistic/organic quality of the missing link itself? Answering these complex questions goes beyond the scope of this thesis, but they are certainly ones to keep in mind as we turn to the discovery of Lucy, the missing link that was not allowed to be one. My reading of her production attempts to elaborate on the sensational discourses embedded and active in scientific research, and more, the necessity that knowledge of our shared origins be much more human than hybrid. Whether Lucy's story can thus vindicate the transgressive power of hybridity, through its disavowal, remains to be seen.

fig. 6 Illustration from The Strand Magazine, October 1914 (from Pinacotheca Holmesiana).

Chapter Two

The Hominid Who: Investigating Lucy

These are the facts: In 1974, a joint French and American expedition of paleoanthropologists traveled to Hadar, Ethiopia in the hopes of discovering more human ancestors to add to the fossil record. Lead by Donald Johanson, an ambitious young scientist who had recently been awarded his Ph.D., the group had high hopes for the area, which held out the possibility of the oldest hominid fossil find to date. That fall, Johanson and a fellow researcher discovered a partial skeleton of extremely primitive morphology. The fossil consisted of 47 bones and was initially dated at around three million years old, making it the most complete and most ancient find yet. As one science journalist later put it: "It was not an ape, but it was not yet a human either. And it was a female" (Edey and Johanson 1989:1). The specimen was studied intensively for years before her formal addition to the hominid family tree in 1979. Named to a new species of early human, *Australopithecus afarensis*, Johanson's find, by then known as "Lucy", thereafter became a credible piece of scientific knowledge and human prehistory.

Predictably, Lucy's case activated a colonial self-interest in female primitives, positioning her in a tradition that includes such varied notables as Europe's Hottentot Venus of the 1800's, Raquel Welch in One Million Years B.C. (dir. Chaffey 1966) and the iconic, bare-breasted black woman who lives in the travel section of Euro-American culture.[1] Much has been written about the ways in which female bodies – old and new – have been objectified and subjectified along codes of the primitive. Postcolonial studies

[1] Usually nameless and sometimes faceless, she is a staple figure of the colonial imagination, appearing in a cross section of leisure-oriented sites, like National Geographic (1888-present), museums of natural history, primitivist art and, more recently, television programming on the Discovery network.

in particular have done a thorough job of analysing the makings of a female savage, and by extension, the concurrent makings of a male colonialist.[2] Less discussed is how these anomalous bodies are sometimes inscribed with codes of the modern, codes that are mobilized in any investigation of a hominid fossil. It is this latter set of identifications that I want to explore with Lucy. "Not yet a human" in the early stages of her discovery, how did Lucy become one? How did *we* become human in relation to this fossil? And what role has sensationalism played in that process?

As we saw in chapter one, hominid fossils are predominantly about the modern – specifically the modernity of contemporary humans in reference to their ancestral pasts, and more implicitly I think, the modernity of those ancestral pasts. Other scenarios, of ape-ness or hybridity, are too traumatic to find expression in mainstream origins discourse. Finding Lucy triggered a foundational question of the origins field that encapsulates anthropocentrism: Who was our oldest *human* ancestor? The question has a long history – biblical at least – and continues to captivate the scientific community, visible in increasingly ancient installments into the hominid family line. It is a question about thresholds, about what qualifies as ape-like and human-like, about the development of our differences from other primates over millions of years, and above all, what it means to be a real human being. It is also a question that scientists address exclusively through a rote series of material identifications, the identifications of Lucy's skeleton being one example. For paleoanthropology, this has always been a normal and fitting strategy. Like other natural sciences, its version of identity is linked to physical stuff, best

[2] See, for example, Anne Fausto-Sterling (1995) "Gender, Race, and Nation: The Contemporary Anatomy of "Hottentot" Women in Europe, 1815-1817"; Marianna Torgovnick (1990) Gone Primitive: Savage Intellects, Modern Lives; Melanie Wiber (1998) Erect Men, Undulating Women: The Visual Imagery of Gender, "Race" and Progress in Reconstructive Illustrations of Human Evolution.

expressed in the concept of "biological identity". The answer to the riddle of ancestral humanity is presumed to be located in the bones proper, and it reads in empirical terms: Prehistoric hominids walked upright on two limbs and had relatively large brains (Johanson and Blake 1996:18). Each new discovery attests to this fact – case closed.[3] And yet, no fossil ever discloses its humanity without some additional help. The definition of humanity always exceeds corporeal or behavioural markers. "What makes us human?" is one translation of paleoanthropology's key question, to which we culturally reply, "a sense of self". To be human is to have a subjectivity – which is to say, both an awareness of the individual that is I, and the presence of hopes, dreams, frailties, ethics, compassion and spirit. Hardly the domain of bones, but not in spite of them either. Bones, we could say, are the material sites for all the humanity that identifications generate; the most valued product being not so much the humanity of long-dead creatures, but our own.

Here, we do well to consider how identification – the central and repeated activity of any origins inquiry – may be messier than expected; how "Who was our oldest human ancestor?" is a psycho-social operation that implicates both objects and subjects of investigation. Diana Fuss' (1995) book Identification Papers is helpful in this regard. Far from a rational, realist or unidirectional procedure, Fuss' notion of identification involves tremendous turmoil and creativity: ". . . identification sets into motion the complicated dynamic of recognition and misrecognition that brings a sense of identity into being" (2). From identification comes identity, constituted for the other and, at the same time, for the

[3] This is not to suggest that the scientific criteria of hominid status has never been contested. Like all facts, the biological identity of the family Hominadae has its own history. Indeed, it was Lucy's discovery that helped cement the current standard, adding evidence to support the idea that hominids are defined by their bipedalism (Lewin 1987).

self. To identify something is to identify *with* that something, a kind of incorporation of the foreign into the realm of subjectivity. Fuss elaborates:

> Identification is, from the beginning, a question of relation, of self to other, subject to object, inside to outside. . . the subject *is* identification; the I *is* another. Subjectivity is the name we might give to the place of the other, to the place where I desire as another, to the place where I become other (3).

My liberal interpretation of Fuss understands identification as a double production, constructing the subject out of the object, but also the object out of the subject. As much as subjects are born from their objects, objects are defined through their resonance with a given subjectivity. Moreover – and here Fuss is more explicit – these productions are not stable. While identifications create some subjects and objects, they call others into question. There is no telling what will spark a connection and no certainty that connections will be maintained or co-operate with each other. We imagine ourselves, and our others, through a multiplicity of sites and circumstances, troubling essentialist claims of who We and They "really" are. In this sense, identifications are highly contingent knowledges that border on the phantasmic, if not the fantastic. The contingency of self and other definition, however, is always tempered by the fact that identifications have a history and that "a subject must bear the traces of each and every encounter with the external world"; so, we should add, must an object (3). Not everyone or everything can choose who or what they want to be. Thus, en route to the clean satisfaction of knowing who our ancestors were, scientists must pass through a foggy, complex territory of subject-object constitutions. This is the territory of this chapter.

The phenomenon that continues to absorb me in Lucy's investigation is a conflation of fossil identifications and human identities, inanimate objects and lively,

emotive subjects. In this soup, we find sensational discourses at their most potent. They enable scientists to wade through identificatory confusion equipped with a simplified and motivating objective: Unlock the secrets of our human origins. The keys used to do the unlocking are familiar to even the most casual origins fan. Treasure hunting is one classic, where brave fossil hunters travel to remote and dangerous locations. They search for rich deposits that will yield fetishistic treasures of immeasurable value, taking great care not to disturb the volatile natives. Time travel is another favoured discourse, in which scientists journey back in time to prehistoric lands. As primitive regions frozen in time, these desolate places offer a window to humanity's distant past, and a chance for researchers to return to their primal roots. Another less fantastic but still sensational discourse is that of the master puzzle. Scientists in this scene work to solve the full picture of human development. Each bone fragment recovered by a somewhat obsessed gamesman is another piece of the giant, cryptic jigsaw of Total Knowledge.[4]

The discourse that I would like to explore in Lucy's investigation is detective fiction, by far the most productive mode of framing origins inquiries. Human origins, we are told, are one of life's big mysteries, and detective fiction offers the promise of solving this baffling case, unraveling the mystery, securing closure. We *will* get the bottom of this. In the meantime, the genre offers a flirtation with danger, a perilous encounter that is never full blown. Modernist literary critics often foreground reason as the principle actor and reward of these stories. A death can always be objectively understood; law and order will always be restored. And the means? No less than the careful consideration of every

[4] In addition to defining the epistemological agenda of paleoanthropology, a more unsettling aspect of these discourses is how they construct (mostly African) geographies of research into colonial fictions of empire: terrains to plunder, conquer, decipher, or otherwise make known.

minute detail by a brilliant yet endearing investigator.[5] The entire narrative facilitates this meticulous knowledge quest, beginning with the identification of a dead body, then additional evidence, then at last the dark reality of what happened. No doubt, origins research finds a handy sidekick in the generic murder mystery; it's contours are conducive to making things unambiguously known, and exhilarating in the process.[6]

What interests me especially about detective fiction, and what I would like to privilege in this chapter, is a dramatic element that Ernst Bloch (1988) has called the "hidden who". The "hidden who" is what drives all crime dramas. Located at their epicentre – the epistemological and explosive core – it is the secret knowledge of identities. Who is the criminal? Who are the innocent? And in more grisly cases, who is the victim? These are the principle reflections/constructions that give sense and sensibility to otherwise senseless crimes. They mandate the investigator to piece together scattered clues in search of suspects and ultimately the offender. No investigation is complete until its who's are unmasked. In origins cases, the "hidden who" is more revealing than usual because it shows the question of our ancestral humanity for what it sensationally is. Scientific studies of fossilized objects are recast as thrilling inquiries into concealed human subjects: *Who was our oldest human ancestor?* – repeat, but with feeling.

In addition to sensationalizing paleoanthropology's key question, detective fiction's "hidden who" invests research participants – skeletons and scientists – with the

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[5] For more on the modernist dimensions of detective fiction see George Grella (1980) "The Formal Detective Novel"; Robin Winks (1980) "Introduction" to Detective Fiction.

[6] As for the effects of detection on the geographies of research, it would appear that African territories are once again modeled into colonial fictions: places of isolation and unease, to which characters are confined until the case is solved. The English country house is one possibility that comes to mind (Grella 1980:37).

sense of who-ness so necessary to the terms of humanity, to the knowledge of family Hominidae. Mysteries, after all, supply a host of identities to uncover and affects to experience, twin ingredients for full human status. Indeed, my argument is that the investigation of Lucy has made its object and subjects *too* human, that a scientific discourse informed by sensational detection overproduces Lucy's and our humanity. As we shall see, the mystery of this specimen is about victims and villains, good girls and bad, guilt and innocence, suspicion and fear, anticipation and disappointment, trauma and grief. This excess formation of subjectivity recalls Fuss' observation on the whole nature of identificatory practice: "Identifications are erotic, intellectual and emotional. They delight, fascinate, puzzle, confuse, unnerve, and sometimes terrify" (2). One shocking discovery in store for this case is how very human both our ancestors and their scientists turn out to be. My strategy, then, is to trace Lucy's investigation *as* a mystery, recognizing that the story is neither historically/empirically "what happened" (however that may be determined), nor the only way of understanding the case. Rather, it is a method to narrativize and sensationalize the scientific research itself, teasing out and befriending what functions as an implicit popular discourse in all origins work. In doing so, the goal is to understand what detective fiction brings to Lucy's knowledge; how she and her investigator became too human visa ve the "hidden who".

I have chosen to read the mystery based on a staple of scientific hyperbole, National Geographic. In its December 1976 issue, an article by Johanson retold the story of Lucy's investigation. It was the first of many future contributions to the publication, as his prize skeleton quickly placed him into the role of human origins expert. For sure, Johanson's 1976 account is not the definitive one. He has recounted the events numerous

times with numerous adjustments, so have many others. But in the interests of coherence and in an effort to access the affective content of the investigation, I consider the National Geographic article a worthwhile departure point for analysis, something to move the mystery along. Furthermore, my reading is organised around the forensic trope of the exhibit, an item submitted as evidence into a court of law. I like the idea of presenting Lucy's humanizing identifications as a kind of proof in this scientific drama of who-ness. It approaches the detective genre on its own terms while giving epistemic weight to the human subject positions it helps compose.

Exhibit H: Human

> *As we walked, I glanced over my shoulder – and there on the ground I saw a fragment of an arm bone.*
> *"Look at that, right there," I said to Tom.*
> *"An arm bone of a monkey?" Tom guessed.*
> *My pulse was quickening. Although the bone was very small, it lacked the characteristic bony flange of the comparable anatomical portion of a monkey. Suddenly I found myself saying, "It's hominid!"* [7]

Like all good detective stories, this one kicks off with a corpse and works backwards. In the late morning of November 24, 1974, Johanson and graduate student Tom Gray stumbled upon pieces of a skeleton in the Afar region of Hadar, Ethiopia. Its broken parts were scattered along a slope, including a thigh bone, arm bones, portions of the lower jaw, ribs and vertebrae. It was an unexpected find that sent both scientists yelling and dancing around "mad as any Englishmen in the midday sun" (793).

[7] This passage, and all other italicized passages from this point on, are excerpts from the Johanson's December 1976 article in National Geographic.

Even before its identification as hominid, this fossil carries meaning in our mystery narrative. It is the death that propels the story, remnants of a nasty original chaos that precedes the narration (Bloch 1988:255). The violence of prior events reverberates in this moment of discovery: The find is "accidental", the skeleton is in mangled disarray, the scientists are madmen. Adding to the chaos is a mixed emotional bag of scientific achievement and morbid pleasure. A body in parts satisfies on at least these two levels, possibly more, furnishing a wealth of research objects and a graphic display of undoing in the same, pulse-quickening event. A more subtle anarchy lurks in this moment too – that is, the confusion over whether the thing is a nonhuman or human primate. From first sight, this is a borderline body, evoking elements of the grotesque that Susan Stewart (1993) describes as "an exchange between animal and human" (105). In what would be an ongoing struggle to clarify the fossil's morphology, Johanson makes the first urgent attempt: It "lacked the characteristic bony flange" of a monkey's arm. Herein marks the first signs of a continuing compulsion to know, to establish order through patterns of identification. As our story's opening, Johanson's classification launches what Peter Wollen (1997) calls the quest to "restore meaning to a scene of traumatic chaos, thus warding off the underlying sense of panic brought about by. . . transgressive acts" – or in this case, bodies (24).

There is a kind of safety, then, in a hominid identification. It settles anxieties that Lucy may be the bona-fide missing link between the human and animal world.[8] The irony is that Johanson and company went to Hadar with the expressed intent of finding the

[8] Without dwelling on the point, it seems important to mention that monkeys and apes are not the same animals and therefore Gray's confusion about the fossil being the former should not necessarily be understood as an equivalent, more diffuse, anxiety about missing links, which was nonetheless present.

oldest possible connection to our apish past (Johanson and Edey 1981:35). As I discussed in chapter one, missing link searches are culturally complex enough to accommodate the contradiction. In as much as the figure has functioned as a utopic dream of origins culture, so too has it constituted the darkest fear. A hominid identification preserves the divide between us and them, postponing the day we meet the "real" link – the ultimate horror – to some later date. Johanson articulated this sense of relief years after his important discovery: "The gap between ourselves and apes has narrowed in recent years, but it has never been shut. Lucy brings us close. . . The feeling grows that one more step into the past will see [bipedalism's] disappearance into a quadruped – into an ape" (Johanson and Edey 1981:375). Reflections like his speak volumes about the latent uneasiness of the question "Who was our oldest ancestor?", and the comfort taken in Lucy's hominid-ness as a first answer. With a little help from science and its classificatory apparatus, human origins' greatest villain is kept at bay. *(Phew!)*

Interestingly, the same cannot be said for another well-known mystery. Written in 1841, Edgar Allan Poe's The Murders in the Rue Morgue is a fascinating adjunct study in missing link fears. In a narrative that is frequently referred to as the founding text of detective fiction, the transgression of a gruesome double homicide is surpassed only by the transgression of the criminal's identity: an "Ourang-Outang" brought over from the East Indian Islands.[9] Later screen adaptations of the story depict the brute in various degrees of ambiguity. Universal Pictures' Murders in the Rue Morgue (dir. Florey 1932) uses a live chimpanzee for some sequences and names the character Eric, a side-show representative of "First Man" (fig. 7). Warner Bros.' later Phantom of the Rue Morgue

[9] Underlying the horror was a pre-Darwinian debate about whether or not orangutans were members of the family of man (Beer 1996).

fig. 7 Publicity photograph for Murders in the Rue Morgue, 1932 (from Classic Horror Greats).

fig. 8 Movie poster for Phantom of the Rue Morgue, 1954 (from themonsterclub.com).

(dir. Del Ruth 1954) stays closer to the original by featuring an actor in a gorilla suit prowling over Parisian rooftops – the overall effect of which is faintly anthropomorphic and obviously incriminating (fig. 8). Ape-men, it seems, are equally outrageous to scientific and popular mystery buffs. Moreover, I would argue that literary and Hollywood treatments of missing link criminality are part of the cultural training of Western fossil hunters, exacerbating the nervous tension in detective drama's like Lucy's.

With relief of what this skeleton was not came the excitement of what it was, or perhaps more accurately, what it was recognized as: a representative of our ancestral humanity.[10] If the grandeur of this identification is lost on some, it is not surprising. I am among those at a loss, having realized that prehistory and its ambassadors do not always move me in ways I am told they should. Paleoanthropologists and the journalists who follow them characterize these bones as touching and magical. And while I consider myself a devoted fan of the science, I fail to see how its fossils can "throb with a life of their own", to borrow Johanson's mystical description (Johanson and Edey 1981:262). Perhaps hominids are not such natural wonders. Perhaps the single act of identifying one does not tap into some "inherent drive to know our beginnings" (Johanson and Blake 1996:21). Indeed, informing the scientist's deep need to know and his subsequent jubilation in recognizing a hominid was a shifting political and research landscape in post-war physical anthropology. By the 1970's, the field had invested hominid finds with

[10] Which kind of ancestor was not obvious and actually changed over the course of the investigation. According to a The New York Times piece about the discovery, the expedition initially understood Lucy not as a direct ancestor of modern human beings, but a closely related lineage of different creature who lived contemporaneously with early humans (Rensberger March 1975:A14). At what point Lucy assumed the rank of direct ancestor is unclear.

a new, monumental significance, making the sublimity surrounding our mystery's first identification neither innate nor inconsequential.

Exhibit F: Family

> *We were working with surface materials three million years old. We knew that a skeleton of that antiquity, whether of the genus Homo or – as it later turned out – another genus of hominids, would be one of the most meaningful finds in the history of man's search for the rootstock of his species.*

Not to diminish Johanson's discovery, but the history of man's search for the rootstock of his species is not that long, especially in the ways circumscribed by a cold war science. In her detailed studies of evolutionary discourse, Donna Haraway (1989, 1997) documents this history, citing the nascent moments in the 1950's. At that time, the "New Physical Anthropology" announced it was no longer interested in constructing overtly racist typologies of human development, its former area of expertise.[11] As Haraway relates, the shift in research program actually came in the form an announcement, in the 1950 and 1951 statements on the nature of race published by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). These documents voiced concerns about figuring race as a scientific object in the wake of Nazi Germany and its scientifically sanctioned policies of genocide and fascism. World War II had witnessed uncomfortably sound arguments over the evolutionary supremacy of whiteness. An emerging cold war was building geo-political divisions and a new threat of nuclear annihilation. Desperately needed was a revised, empirical model of humanity that

[11] The history of early anthropology's racial fixations and productions is a well developed body of literature. See, for example, Stephen Jay Gould (1981) The Mismeasure of Man; Fatimah Tobing-Rony (1996) The Third Eye: Race, Cinema, and Ethnographic Spectacle.

was blind to race and borders. With the institutional support of the United Nations, biologists from Western industrialized countries developed the concept of "universal humanity", a.k.a. "biological humanism". This was an ideology that took great pains to see all people *as* people, to the extent of valorizing former "primitives" as archetypal human beings. Its worldview emphasized the inherent flexibility, progress and cooperation of the whole human species; key values for the survival of post-war liberal democracies (Haraway 1997:238-240).

On the heels of this biopolitical vision came another vision: the first photographs ever taken of the earth from space by the Apollo astronauts during their trips to the moon. As The Boston Globe's David Chandler recently reported, these are "among the most powerful and emblematic images of the 20th Century" – and certainly a representation of space-age power. Especially popular was the December 1972 photograph of the whole earth set against the blackness of space, an impromptu shot that became the most requested picture in NASA's image archive (Chandler 2001) (fig. 9). Together with images of the planet in semi-sunlight, it helped capture everyday interest in the trickle-down project of a common species. World citizens were able to literally see the big picture, so prescribed by major scientific and political institutions. Significantly, Earth's famous head-shot features Africa prominently in the foreground, re-writing the once dark continent as the new, global face of humankind.

For origins research, the shift away from race and nation was profound if not entirely successful. (A science whose principal knowers remain white and Western and whose principal research region is Africa cannot escape these issues no matter how politically unsavory.) Biological humanism meant that each new fossil find was a

fig. 9 Apollo 17 photograph, December 1972
(from JSC Digital Image Collection).

potentially defining moment in the search to understand what makes us *all* human. In this climate of hope, hominid pieces began to turn up in record numbers; more in this era than any previous or since. The "luckiest" years were between 1967 and 1977, dubbed "The Golden Decade" for paleoanthropology and the time in which Lucy was discovered and made famous. With more fossils in hand than ever, scientists turned their collective attention to those ancient biological characteristics that could signify a ubiquitous, essential human nature. The general directive for paleoanthropology became the reconstruction of a hominid family album that would serve the political purpose of reuniting fractured populations with their shared past.[12] Ancient history, it was hoped, would bring us all closer together.

In this context, Johanson's discovery, though not a transcendent wonder, was still incredibly meaningful. On that morning in 1974, he identified a much anticipated and valued member of the human family. The induction of this fossil into family Hominidae is appropriate for a narrative of detection, which has its own historical interest in the ties that bind – and gag. Poe and his less celebrated contemporaries were largely concerned with bourgeois families and their violent disruption. Stories hinged on the disparity between the apparently stable home lives of pedigreed classes and the secrets they sheltered (Cvetkovich 1992). In our cold war mystery, the themes are similarly familial and exploitative. A hominid identification implicates the world-wide family past and present. It is a family that appears, from a cosmic distance, to be secure but whose "domestic" affairs are anything but. Johanson's find makes use of the discrepancy,

[12] As Haraway argues, the album proved to be a "totalizing account of human unity" that "relegated cultural difference to the thin time layer of the last few thousand years, a kind of icing on the cake of the human way of life. . ." (1989:207).

summoning people everywhere to care about this family matter and perhaps even feel a twinge of grief at its passing. *(What kind of person feels nothing towards his own kin? How inhuman!)*

The slippage between fossil find and universal relative parallels one described in Alison Bashford's (1998) analysis of the corpse in nineteenth century medical science. This was a period and profession that did not entirely understand the dead body "as soul-less, as inert, as flesh only, as object without any subjectivity":

> . . . there was no sure conceptualisation of the dead body. There was no certainty of the scientific perception of the corpse as an objectified piece of flesh, a conceptualisation clearly necessary for dissecting a dead human with any peace of mind (112).

Our investigator is likewise denied any peace of mind. His object does not remain one, and his job requirement to be a dispassionate subject is just as precarious. But these ambiguities are less a consequence of unstable concepts than overstated ones. Before him is a partial skeleton doubly discoursed as raw biological material and beloved kin, the stuff of humanity and the First Person of a shared humanity. In this sense, discovering the body is indeed "one of the most meaningful finds" in origins research. Through the lens of history and the motif of family discord, its breadth of significance spans the biological, the political, the poetic and the deeply personal.

Exhibit V: Victim

> *We had brought back some of the fragments, and everyone crowded around to have a look. Lunch was forgotten. . . For the rest of that 1974 expedition, our major effort was screening a collecting all the bone fragments at the spot we called Afar Locality 288.*

The paleoanthropological practice of screening and collecting bones is startlingly similar to the protocol of crime scenes. Once a body has been found, the area is sectioned off with a perimeter of string and experts are brought into the site to gather all relevant evidence. Like a search party, foot surveyors pace the area systematically, looking for additional fragments. Other technicians make detailed records of the body and the site, including photographs, measurements of the specimen and field notes describing the locality. The body is treated with a preservative before it is removed from the ground to prevent further fracture. Following, it is lifted, tagged, bagged and taken to the field laboratory for a complete examination (Johanson and Edgar 1996:25). Together, the presence of authorities, the intensive documentation and the rationalized steps for handling death link anthropological fieldwork to routine forensic procedures.

Understanding Afar Locality 288 as a crime scene gives Lucy the status of victim in our narrative. Certainly, cold war curiosity and lament for a dead family member begins the work of victimization, but it is the creation of the collection site in particular that completes the process. A quiet theater of aftermath, its reserved performances imbue the ancient skeleton with added importance. They make it matter in ways that lofty principles of humanism and kinship could not alone. Without the extensive search for and treatment of evidence, Lucy would remain in exile, a family outlaw of sorts. Indeed, she would remain outside of the law as executed through these forensic operations, leaving a body to exist without a crime. Screening and collecting cultivates the hallmark of post-mortem victimhood, namely the eerie presence of someone who's demise deserves the very investigation it is receiving. It is this rather ethereal identity that adds more momentum to the knowledge quest. *(Don't worry, we'll find the bastard who did this to*

you.) Along the way, victimizing activities label the site at large as a scene of foul play, constructing an atmosphere of suspicion that in turn constructs the most banal objects as peculiar: bits of bone, teeth, layers of sediment, rocks. Everything is suspect here and worthy of scrutiny, a sentiment well articulated in Ralph Rugoff's (1997) description of a crime scene's forensic aesthetic: "Ripe with revelatory potential, the scene of an accident or crime is thus a place where every detail, no matter how mundane, is a potential hub of meaning" (82).

Historically, the victimization of A.L. 288-1 (Lucy's technical name) was an elaborate production, lasting two fall seasons and sifting through more than twenty tons of earth by hand. The obsessive efforts to recover all traces of the hominid is significant to our story's theme of simultaneous object-subject identifications. A scattered fossil poses challenges to both the recovery of the whole skeletal object and the construction of whole subjectivities for the dead and the living. Stewart's theory of the fragmented body offers a point of entry to this problem. For her, the fragmented body is our own body. Personal corporeal knowledge is always partial. It is a knowledge "of pieces and parts, of disassociated limbs and an absent centre" (115). We have no idea what we really look like, and more, we do not want to. Instead, we turn to other bodies to craft our sense of self. In their wholeness we understand our ideal selves, the selves we can live comfortably with. Subjectivity, then, is a fantasy built through visions of a complete other, much like Fuss' conceptualization of identity. From this angle, to encounter an evolutionary ancestor "of pieces and parts" is to be denied the expectation of seeing our ideal self-image in its totality. It is to be denied physical evidence of who we think we

are, faced instead with the ugly realities of segmentation. How crude but true that the dead are employed to service the living like this.

The loss takes on added importance in a period of biological humanism. Afar Locality 288 saw the material essence of our universal humanity in shambles, an awful condition that mirrored a fractured global community in need of its wholeness. Finding all the bones and re-assembling a collective ancestor thus became an international mission in search and rescue, a mission to save political bodies and selves.[13] By the end of the hunt, the fossil fragments numbered 47 in total out of a possible 206. Considered "exceptionally complete" by paleoanthropological standards, the evidence seems empirically sparse for a fantasy of global family bliss (Johanson and White 1979:329). *(That's all we managed to find? Where's the rest of it?)* The implications for our family drama appear serious. Imagined members of a worldwide clan risk grieving indefinitely without some more answers about their lost loved one. Stewart's theory in particular suggests that they simply would not feel complete without that knowledge, that the absence of it would be unbearable for those seeking wholeness. It was in this spirit – the spirit of completing our sense of self – that investigators performed a kind of anthropological autopsy on their victim/evidence.

Exhibit M1-3: Mother, Maiden, Monster

> *Taken together, the recovered parts made up nearly 40 percent of a single skeleton. The form of the pelvis identified it as female. She was small of stature, the short leg bones suggested a height of three and a half to four feet. She had cut her wisdom teeth, so she was grown when she died. . . Surely such a noble little fossil lady deserved a name.*

[13] Never mind that appeals to internationalism were as narrow as the composition of Johanson's International Afar Research Expedition, whose scientists were American and French and whose labouring hands were Ethiopian.

Evidence analysis is standard procedure for both scientific and criminal investigations. In his important 1983 essay "Clues: Morelli, Freud and Sherlock Holmes", Carlos Ginzburg develops this connection historically, examining a common epistemological heritage known as the "conjectural model".[14] Popularized in the late nineteenth century with the rise of bourgeois medicine and police forces, the conjectural model knows the world through its symptoms and clues. Meticulous analysis of slight, mostly material, details can illustrate the personality of a criminal, the nature of a disease, a period of history and other knowledges beyond an observer's direct experience. Only through diligent physical inspection can these distant realities be reconstructed.

But for all its precision, the conjectural approach is often hypothetical and always interpretive. The movement from small material fact to grand conclusion involves some qualitative judgments. As literary and medical critic Pasquale Accardo (1987) argues: "Pattern and meaning emerge, not through the passive accumulation of endless details, but rather through the actively creating human imagination" (73). Still, conjecture is no random guessing game. Rationalized through various discursive regimes, the model's authority reminds us of its constitutive social forces, and Fuss' argument that identifications have a history. To illustrate, Ginzburg revisits the use of conjectural models in Victorian legal systems. Driven by new middle-class security concerns, European and colonial states established anthropometric techniques to identify social undesirables. Authorities studied fingerprints and facial features for evidence of various deviant profiles (107). This and other histories of physical measurement indicate that some clues matter more than others, and some do not get noticed at all. Said Charcot: "In

[14] Ginzburg also links this model to the art connoisseurship of Giovanni Morelli.

the last analysis, we see only what we are ready to see, what we have been taught to see" (quoted in Accardo 1987:29).

Ginzberg's epistemological history goes far in demonstrating how a method central to scientists and detectives alike is neither a neutral nor an abstract practice. There is no such thing as bare relations between inquiring subjects and their selected evidence since every identificatory gesture is both a product and producer of the world in which it acts. With this in mind, Johanson's principle morphological identifications, so seemingly narrow is scope and dull in conclusion, become expansive, vivid creations. The form of the pelvis, length of the leg bone and condition of the teeth each function as sites of multiple interest: scientific, historical, psychological, sexual. Moreover, they transform our victimized ancestor into the identities which mysteries crave and which the biological sciences have co-authored for some time. Generic dead family members are good, but mothers, maidens and monsters are better.

The power of these profiles has everything to do with one particular identification: the sexing of Lucy's pelvis. An object of deep investigation and debate amongst origins researchers, Lucy's partial pelvis inspired the pivotal chapter in the mystery of human origins circa 1974. For sure, it is a chapter suitable for a much larger volume on the major discursive production of organic sexual difference (Haraway 1989: 342). In Lucy, human origins and sexual difference are the same material(ized) thing, bound to each other and wrapped around this skeletal structure. It is no surprise, then, that its identification functions as the climax of our story.

Lori Hagar (1997), a feminist paleoanthropologist, points out that Lucy has been female since the day she was discovered:

> Lucy was sexed as female because the morphology of the skeleton, and the hipbone in particular, was suggestive of the modern female condition. That is [scientists] had pelvic elements and they immediately determined the fossil's sex according to modern standards of pelvic dimorphisms (11).

Hagar questions why modern morphological standards are used to determine the sex of ancient hominids; a strategy she finds problematic, and which we might find indicative of identification's general self-centrism. That the physical yardstick of prehistoric femaleness is our own works well with a theory of identification that positions the other in the name of the self, and the self as a window to the other. But another question emerges from Lucy's hasty pelvic exam: What was the hurry? Part of the haste can be attributed to interpretive pressures within paleoanthropology. Hagar explains that in order to answer taxonomic, phylogenetic and behavioural questions about early hominids, a scientist must first assess variations in a fossil due to sexual dimorphism – that is, physical differences between the sexes (10). Simply put, Lucy's status as female was a prerequisite identification for learning about her kind in general.[15] The scientific literature offers another retrospective reason. Lucy's pelvis is widely agreed to have pushed back the theorized timeline for upright walking, giving us the oldest evidence of bipedalism. This contribution to the field suggests that its primary and immediate value was as much proof of early human-like behaviour – a novel discovery – as sexual dimorphism. Explanations like these, however, only partly make sense of the attention paid to Lucy's pelvis. They neglect the "hidden who" of this origins mystery, which asked our skeleton immediately upon discovery, "Who was our oldest human ancestor?"

[15] Meanwhile, other women anthropologists have contested the exclusive use of pelves for these determinations, arguing that sexual dimorphism has no single behavioural or physical characteristic. It is "a mosaic of features" (Haraway 1989:342).

Establishing the femaleness of Lucy's pelvis was a priority because it went so far in answering that loaded question. Once female, the fossil could embody an ideal of human beginnings that envisioned humankind as an assemblage of brothers and sisters, and a partial pelvis as the mother of us all. The female Lucy became the universal birth-mother to humanity then and now. This production is doubly resonant. First, it complies with the archetype of motherhood itself, which understands the identity of "mother" in ahistorical and ontological terms; a sense of being that has existed unchanged since the beginnings of organic time.[16] Second, it stays true to the cross-cultural theming of the female interior as the cradle of human life (Bronfen 1994:99). Of all interiors, surely an ancient female pelvic bone symbolizes the quintessential origin. It is the osseous site of reproduction through which a fiction of universal humanity can narrate its birth. Compounding this representation is the cultural connotations that bones have. Idioms like "down to the bones", "in my bones" and "bare bones" designate them as a source of enduring and intuitive authenticity, the substance of truth. Cold war anthropology – the actual parent here – could not have found a stronger mother figure than this bony body part.

Perhaps too strong, for just as quickly as her pelvis was sexed Lucy was given her personal name. On the eve of her discovery, the expedition was celebrating over a Beatles' soundtrack when someone suggested naming her after the song "Lucy in the Sky with Diamonds". While it is possible to read this moment as an extension of maternal identifications, I want to suggest instead that the naming of Lucy was a defensive

[16] Appropriately, the archetype of motherhood experienced a re-birth itself shortly after the period of Lucy's discovery. In the early 1980's, an emerging Western eco-feminist consciousness began valorizing human mothers for their power to "mother" the earth. See, for example, Lynn Stearney (1994) "Feminism, ecofeminism, and the maternal archetype".

response to them. My analysis takes its cues from Keller's (1992) discussion of euphemisms assigned to nuclear weaponry. In the world of military science, bombs are called "babies", warheads are called "RV's" and electronic missile systems are given acronyms such as PAL and BAMBI. Pet names like these, argues Keller, enable scientists to live and work with the deadly consequences of these technologies. Named, weapons also lose some of their distinctly phallic power, appropriated by experts through such odd gestures as "patting the missile" (53).

In an inversion of sorts, naming Lucy gives investigators a necessary distance from the reproductive fantasies housed in her partial pelvis (as opposed to the destructive realities housed in nuclear arms). It serves as a protective measure against the awesome life-giving force imagined in her once fleshy form. The diminutive "Lucy" downplays the hominid's pelvis and accentuates her small brain capacity – another noteworthy feature of this fossil (Johanson and Edey 1981:258). "Lucy" assures that the mother of all humankind is also a nice girl, playful, and not a little seductive. At the same time, "Lucy" fortifies the masculinity of scientists. It co-opts the fossil's maternal power for paternal ends. Not Eves but Adams, the naming scientist awards himself the fatherly privilege of creating the world through inscription practices. A.L. 288-1 can reproduce, but Johanson et al. can represent. The relationship between namers and the personally named takes on the quality of an innocent flirtation, with Lucy as the target of manly scientific affections, even desire.[17] Though I am somewhat skeptical of the textual value of the Beatles' song itself, lyrics from the late 60's drug anthem do add something to this defensive strike,

[17] There is also an implicit theme incest running through my reading, which finds paternal scientists getting a little too close to their virginal "offspring".

staying well clear of motherhood imagery and playing up the eroticism between scientists and their object:

> Picture yourself in a boat on a river/With tangerine trees and marmalade skies/ Somebody calls you, you answer quite slowly/A girl with kaleidoscope eyes/Cellophane flowers of yellow and green/Towering over your head/Look for the girl with the sun in her eyes/And she's gone/Lucy in the sky with diamonds (Lennon 1967).

The implications of such a nymphy namesake are exciting for our detective story. They exacerbate the tension between a harmless "little fossil lady" and a dormant matriarch, heightening suspicions that this female hominid may not be all that she seems. Indeed once named, Lucy does have something to hide: the mythic power of her pelvis, which is discursively concealed, or at least upstaged, by a pretty young thing.

This is perfect for our mystery, since mysteries derive much of their sensational appeal through insinuations of duplicity, ideally expressed in a single two-faced character. And as with the fascination towards fossils, the appeal of duplicity also has its cultural contexts and powers. It is part of the anxiety of artifice that has characterized both modernity and postmodernity, a means to appease that nagging sense that ours is not the whole truth. *(Hmm. . . there has to be something more going on here.)* For the modern detective story, duplicity signals a closing in on the "hidden who"; the innocent will be revealed as an imposter through the epistemological strip search of interrogation. For the postmodern mystery, duplicity provokes a frenzy of *speculation* about the "hidden who", which risks exceeding the formal structure of two-ness. The slightest hint of something more can set off multiple possibilities, a panoply of "what if's" rather than singular "therefore's". Where Lucy's investigation sits amidst these narrative styles is difficult to say. Origins research is clearly modern in method – the scientific method of visualizing

invisibles (see chapter one). But it is also highly speculative, to the point of its own marginalization within the broader scientific community.[18] "Who was our oldest ancestor?" remains the dominant concern in any case, to which the modernist edges of the investigation reply with certainty *(Ladies and Gentlemen, observe our killer!)*, and the postmodern with shadings of doubt *(Ladies and Gentlemen, observe our prime suspect)*. Our task, then, is to question this little fossil lady in the hopes that she will crack and reveal – as the female body has continually done in Western science and culture – her diabolical core.[19]

Actual criminal or speculative profile, the "hidden who" of our story turns out to be less a humane mother figure than a barely human monster. Despite efforts of a cover-up, Lucy's supposed criminality cannot be contained. A maiden name cannot adequately mask the fact that her reproductive parts have become exaggerated and, in Michel Bakhtin's words, "come to live an independent life of their own" (quoted in Stewart 1993:105). In death, Lucy's pelvis is menacingly larger than life, a monumentality convincingly illustrated in an actual size photograph of its reconstruction (fig. 10). The image was published in Johanson's 1996 coffee-table tribute to his field, and in addition to reconstructing the body part, reconstructs some of the earlier fear and loathing that

[18] In the wake of the paleoanthropology's Golden Decade, the scientific establishment was particularly critical about the field's speculative tendencies, publishing prescriptive journal articles with titles like "Fact, Theory, and Fantasy in Human Paleontology" (Tattersall and Eldredge 1977). Some warned that the field risked becoming a "lumper's fools paradise" (Tobias 1978:373). Others offered more pointed critiques that the conclusions reached from hominid investigations were too removed from their physical evidence and should therefore be discounted (Wood 1978:351).

[19] Analysing feminist literature on the double meanings of the female form, Jackie Stacey (1997) writes: "The female body has been turned into a particular focus for suspicion in contemporary culture. . . what appears 'pure and beautiful on the outside' may be 'rotten inside'" (86).

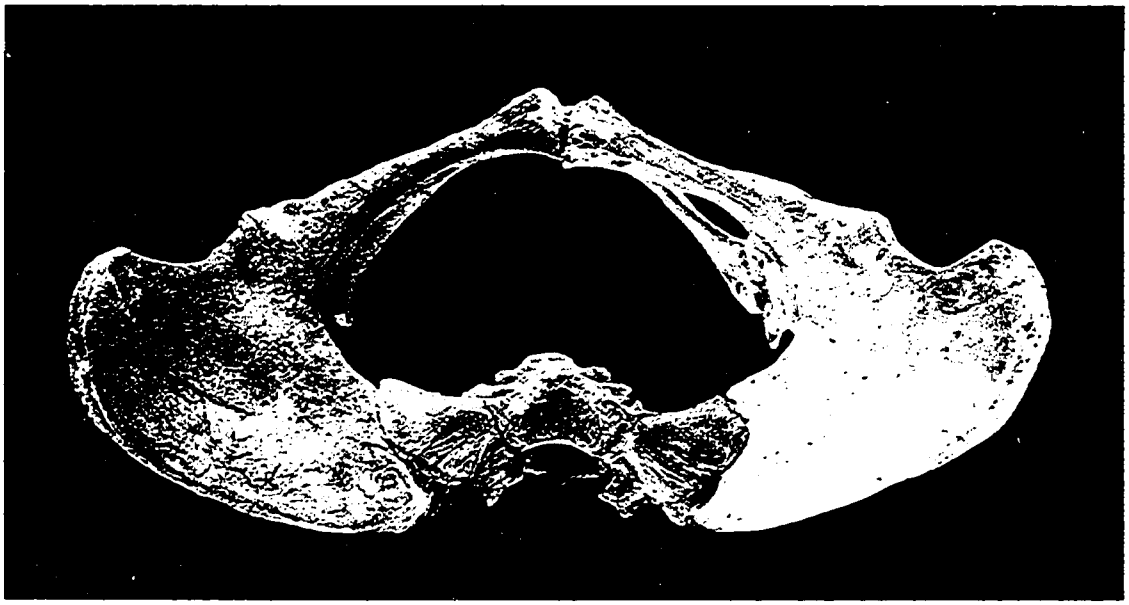

fig. 10 Lucy's reconstructed pelvis in From Lucy to Language, 1996.

circulated around it. Bakhtin's description of Kerch terracotta figurines provides an alternative caption:

> This is typical and very strongly expressed grotesque. It is ambivalent. It is pregnant death, a death that gives birth. There is nothing completed, nothing calm and stable in the bodies of these old hags. They combine senile, decaying, and deformed flesh with the flesh of new life, conceived but as yet unformed [. . .] Moreover the old hags are laughing (quoted in Russo 1994:63).

Lucy's pelvis is as incomplete, impure and irreverent as these pregnant hags. It is missing its right half. Imagined whole, it is short in size with flared blades – something akin to a modern deformity.[20] Pelvically, Lucy is also a "death that gives birth," to an essentialized vision of humankind. We are Lucy's evolutionary offspring, the "flesh of new life" incubating in this decayed symbol of origins. There is no escape then; she is our biological heritage, and we are all in grave danger.

The danger at issue is one that Jackie Stacey (1997) describes elsewhere as the dreaded identifications with a monstrous maternal. Monstrous mothers have unkempt, gaping bodies. They are abject, disturbing corporeal, social and psychic boundaries, stymying their children's progress as full-fledged Individuals. In identifying this monstrous maternal, a nascent universal humanity risks never being able to leave its prehistoric nest, or even being able to order it, fastened instead to an unruly female figure who refuses to let go (86). How can we achieve the mature goal of anti-racist global unity when our mother lingers so ominously in the background? Lucy's corporeality brutally assaults the image and autonomy of cold war Man, in both the universal and gendered

[20] Bipedal she may have been, but as Johanson argues, the pelvic flaring and small size of Lucy's pelvis also represents a major difference from a modern pelvis (Johanson and Edgar 1996:87). Adding to theme of difference is a history of early Neanderthal fossil finds, which were thought to be the remains of deformed modern humans (Edey 1972:12).

sense of the word. Moreover, we cannot fully relish the knowledge of this dangerous mother, since – as we have surely learned by now – to know her is to know ourselves; rather traumatic under these grotesque circumstances. All the same, we must make the effort. In her reading of another crime drama, Fuss explains the imperative: "Success in solving the case is wholly dependent upon the novice's ability to identify fully with the killer, to learn (like any good detective of the genre) to desire what the other desires, to inhabit the place of the other's identifications" (93). If only Lucy's pelvis had not been recovered! Perhaps we did not need this "exceptionally complete" picture of our past after all. This fossil offers way too much personal information. To paraphrase Stacey, we would rather die than be that (77). As identifications indicate, the scenario is even worse: we are born from that; worse still: we become that. Like some sort of maternal vanitas, Lucy reveals both our own disgusting beginnings and our own grisly ends. *(How could she have done this to us? What a monster!)*

The final, lethal blow to the construction of ideal identities can be drawn from the origins of much origins discourse, namely the bible. Lucy's criminality can be figured through the concept of "original sin". She represents the criminal beginning, a lawlessness that defines the Judeo-Christian understanding of human roots, and seeps into paleoanthropology accordingly (Haraway 1989:9). The story of the Garden of Eden is the crime drama of creation itself (Bloch 1988). It is also the subplot of a science devoted to the dawn of humanity. In this case, returning to the garden means returning to a pelvic scene of utopic, unspoiled fertility followed by unforgivable transgression. Naked and guilty, our ingénue morphs into the original evil woman, the one responsible for Man's fall from grace. Too fitting is the biblical story's conclusion, which pronounces the

experience of self-awareness as our eternal and collective anguish. The knowledge from identifications, it seems, will never come easily.

Unsolved Mystery

> *Since her long trip back to the United States (on loan from Ethiopia), we've given Lucy very special study. Even now, though we are not absolutely sure where her skeletal structure fits into the spectrum of early hominids. She has provoked as many new questions as she has given answers to old ones. What should she be called? Australopithecus no doubt.*

Our culprit has "delivered" her chilling confession. Whether or not it is accepted depends on the modern or postmodern orientations of the specific science that produced it, an analysis beyond the range this chapter. That Lucy is not banished from family Hominidae suggests some level of disbelief about her evil constitution, or perhaps a disavowal. Any person who is thought to have committed such serious crimes against humanity would be, in the rule books of detective fiction, permanently exorcised from the story, usually through their own death (Grella 1980). This has never been an option in Lucy's story. Such a drastic punishment would disable the scientific and cultural success of paleoanthropology, which has capitalized on the long and distinctly human life of this fossil. Unlike the dehumanizing portrayals of other notorious criminals in recent history, she remains recognizable and useful as one of us.[21] Consecrating this familiarity was Lucy's formal addition to the human evolutionary tree. Johanson and colleagues filed

[21] The flexibility and politics of the species divide become apparent here. David Berkowitz, Charles Manson, John Wayne Gacy and other criminal contemporaries of Lucy's are depicted as savages, beasts and primitives, while ancient, ape-like skeletons like Lucy enjoy the privileges of being human. More problematic, of course, is the joint animalization and criminalization of people who have done no harm, but who match the socially constructed profile of a deviant.

their case in the spring of 1978 to the major American journal Science and a smaller U.S. publication, Kirtlandia. In those articles, Lucy and other similar fossils were documented as a new species of early hominid, *Australopithecus afarensis*.

But the closure created by scientific nomenclature is hardly airtight, thanks to a narrative device known as the unsolved mystery. Lucy "has provoked as many new questions as she has given answers to old ones", a judgment that rings true for any research field interested in its own staying power. In a 1996 issue of National Geographic, Johanson exemplified the value of loose ends in more human terms. The formal subject of his article was the ongoing search for physical evidence of Lucy's kind, specifically more cranial material. He writes: "Seeing a complete skull is like looking at a person. The constellation of features comes together in a unique way. Without a skull, how could we know what Lucy and her family looked like?" (102). Portions of the article read like a missing persons report, relaying the very material fact that Lucy's true humanity remains elusive twenty-two years after her discovery. Any lingering distinction between object and subject, identification and identity is erased in the expression of a single dilemma: We cannot put a face on this ancestor. It is an absence that keeps her mystery alive for more scientific detective work and the continued pleasures and pathos of knowing who we are.

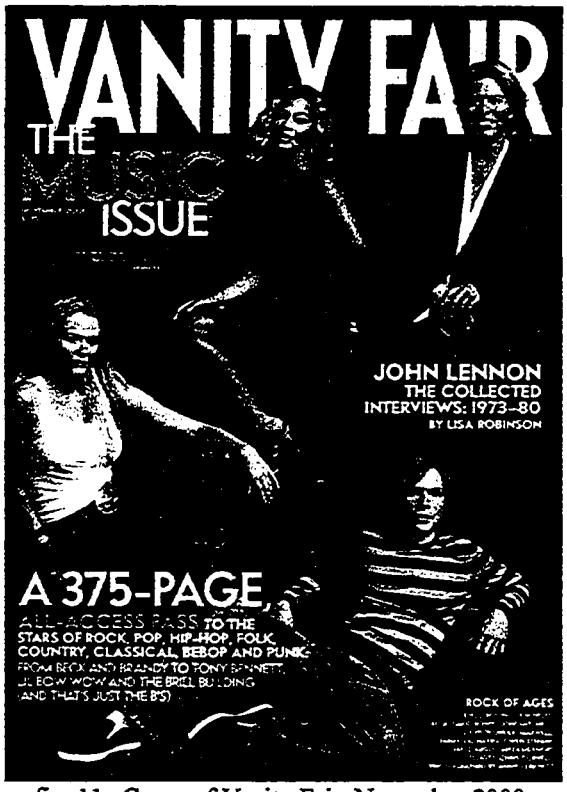

fig. 11 Cover of Vanity Fair, November 2000.

Chapter Three

It Girl: Authenticating Lucy

Vanity Fair's annual music issue has hit the news stands this month (November 2001) and I am seduced on many levels. Almost wet to the touch, the glossiest of glossies features the signature work of celebrity photographer Annie Liebovitz. Displayed over three fold-out panels is an "understated" yet unmistakably magnificent cross section of mainstream music's heavy hitters, up-and-comers and comebacks: Stevie Wonder, Beck, Missy Elliot, Joni Mitchell, Gwen Stefani, Maxwell, Chris Cornell, Emmylou Harris, Jay Z, Jewel, Beyoncé Knowles and David Bowie. Stars in their own right, when splayed out as a highly produced, non-challent ensemble I bite into the feast with all the more voracity, tempted by the corner caption promising "a 375 page all-access pass" to everyone. Indeed, once opened, the magazine leads me into the makings of the cover shot. I learn of Knowles' tight schedule and how she fit the Vanity Fair shoot into it. I read about Maxwell's special words for Mitchell (her music means a lot to him). I savour impromptu photos of the musicians hanging out. This, I gather, is how and why the magazine continues to make the issue a yearly event, and how and why celebrity culture at large is so powerful: a constant movement between finished products and the intriguing location of behind-the-scenes.

I cast my music issue eyes on a similar spectacle of stardom that occurred seventeen years ago, one which I did not consume first hand but, like many other human origins happenings, I am able to imagine with a few clues. The 1984 Ancestors exhibit held at the American Museum of Natural History in New York City was, by most appraisals, a blockbuster. Never before had so many fossil hominids been gathered in one

place and time; forty in total, protected by bulletproof display cases and gaped at by thousands of museum visitors. Just as eventful were the steps taken to get them there. In addition to negotiating loan plans with various fossil-rich countries, many of which refused to hand over their specimens to an American institution, organisers made sure that the bones that did travel to New York did so in style. Historian Roger Lewin (1987) recounts: "Curators arrived at John F. Kennedy Airport, having carefully cradled their charges in first-class seats, to be met by a motorcade of limousines and police escort. No VIP had more attentive care and reception" (21).

Given that the appeal of origins research had been building for decades, such star treatment seems oddly appropriate. By 1984, the subject of our prehistoric heritage was a major draw and a star system was firmly in place for showcasing its ossified talent. Museums were certainly a part of this system, as was science journalism, textbooks and the occasional professional memoir. I am inclined to extend the reach of the system beyond these predictable milieus. More lively ones include science fiction films like 2001: A Space Odyssey (dir. Kubrick 1968), with ancestral hominids on the cusp of humanity, and the Planet of the Apes saga and subculture, with future hominids in the wake of humanity. In their own campy way, lesser known gems made contributions to the origins hype too. The British monster movie Trog (dir. Francis 1970), for example, stars Joan Crawford as an accomplished anthropologist who discovers and educates a throwback from the English countryside (fig. 12). The famous footage of "Patty" is another treat (fig. 13). An evidentiary gold standard for Bigfoot believers, the 1967 film shows a large sasquatch – supposedly with pendulous breasts – retreating into the woods (Hubbell 1999). These are some of the diverse and bizarre participants of what I refer to

fig. 12 Movie poster for Trog, 1970
(from Joan Crawford Online).

fig. 13 Film still of the big-breasted Bigfoot, "Patty", 1967
(from Shackley 1983).

as the cold war origins scene. In this scene, it makes sense that the Ancestors exhibit would function much like the current issue of Vanity Fair, assembling its VIP's with all the hype afforded to fully human celebrities. The comparison helps introduce us to the key problematic of this chapter: What do popular stars and hominid fossils have in common, and why might that matter? How can the onstage/backstage duality of celebrity culture help explain the scientific acceptance of a once unknown hominid and her species?

Continuing my analysis of Lucy's production as a sensational discourse, this chapter accounts for the star quality of this now famous skeleton, how that quality was cultivated and what it accomplished for the field of paleoanthropology. Lucy's position as human evolution's It Girl in the 1970's was not exclusively a product of scientific journalism, education, or a popular "misunderstanding" about the value of hominid fossils. Important as these were, so too was the fossil's circulation and construction in scientific journals; impenetrable texts for the nonscientist, and ones that are widely considered safe from the toxins of celebrity schlock. My contention is that Lucy's stardom was largely generated through these very publications, whose logics and logistics are nothing less than a star forum dedicated to revealing what nature is "really like".

This reading makes for a critique of another socio-cultural interpretation of the scientific article, namely, Bruno Latour's idea that journals are a rhetoric of presentation. By considering Lucy's appearance in these texts as a form of celebrity exposé, a rhetoric of revelation, I am proposing an alternate explanation of the role of these mediations. This one conceptualizes the epistemological value of going *behind* the scenes, not merely staging them. It acknowledges that It Girls are engaging, but the story behind It Girls are

more so. And it endeavours to show that Lucy's stardom was neither an aberration nor ornament to her scientific value, but central to it, if not *the very essence of it.* The species that Lucy came to represent via publication would not have been possible without a sense of her immediacy and candour – which is to say, a star power unveiled through a set of technical yet titillating scientific papers. Key contributors to the success of the origins scene and its favourite celebrity, it was the pages of Science, Kirtlandia, Nature and the American Journal of Physical Anthropology that had the most to tell about the private life of a charming skeleton from Ethiopia. They constituted for their specialized readers a kind of all-access pass to Lucy herself, and at the same time, credible knowledge of a new hominid taxon.

To make the necessary leaps between star and scientific culture, I will be drawing from a behind-the-scenes scene contemporary to Lucy's scientific publication: a snapshot of Warner Bros. producer Arthur P. Jacobs sitting with *his* It Girl, Zira (fig. 14). On set at the production of the third Planet of the Apes film, Escape from the Planet of the Apes (dir. Taylor 1971), this was the last episode for Zira, but certainly not for the franchise.[1] In this film, the walking talking ape-lady, played by Kim Hunter, time travels to 1970's America, where she and mate Cornelius become celebrity freaks. The story ends on a violent note. Zira is killed off for giving birth to a primitive ape-child that threatens the future of the modern human species. Withholding a temptation to make narrative connections to Lucy's story (though they certainly can be made), Zira is more useful to this discussion in ways that are specific to her appearance in the photograph. First, she can function as a theoretical tool to help us envision the space of behind-the-scenes, its

[1] The Apes phenomenon lasted from 1968 to 1975, spanning five films and two separate animated television series – revisited once more in a 2001 remake of the original movie, directed by Tim Burton.

fig. 14 Zira and Arthur Jacobs behind-the-scenes (from Russo and Landsman 2001).

atmosphere, operations and value. What is specific and significant about this locale? A piece of exposé itself, Zira's picture is additionally helpful for what it suggests about how stars are made and what it takes to be one, a second role to play. Finally, referring to the image can highlight affinities between the celebrity in an offscreen Zira – a wholly fictional celebrity – and Donald Johanson's prize specimen. More powerful than the disciplinary divides that have kept these ladies apart is the star quality shared amongst them, turning one into a personal heroine (mine) and another into the leading lady of *Australopithecus afarensis*. As we shall see, the analogy between the two is not perfect, but even its shortcomings prove instructive.

Specimens as Stars

Understanding the nature and worth of Lucy's celebrity presumes, of course, that we accept the specimen as the star of her own production. All the indications of star status are certainly there; first among them being a vague awareness of the fossil that many nonscientists still have. At her peak, Lucy also appeared in crossword puzzles, on the game show Jeopardy, in cartoons, poems, feminist theatre, tattoos, and a commemorative stamp issued by the Ethiopian government (Johanson and Edgar 1996:124). But like most things in modern science, stardom is contested, and a competing vision of scientific celebrity would have difficulty identifying Lucy as the Chosen One, opting instead for the producer who sat beside her, groomed her, discovered her. A feature in a 1979 edition of The New York Times demonstrates this counter-discourse of the scientist-as-star. Over the headline, "Rival Anthropologists Divide on 'Pre-Human'

fig. 15 Scientists as stars in The New York Times, 18 February, 1979: A1.

Find" is a front-page picture showing Richard Leakey and Donald Johanson face-to-face, feigning deep debate, with Leakey holding a pipe for the distinguished gentleman effect (fig. 15). The story's copy confirms the point that the luminaries of scientific inquiry are often researchers themselves: "After decades at center stage in the dramatic search for human origins, the Leakeys have recently been forced to share star billing with Donald C. Johanson, a 35-year-old American anthropologist" (Rensberger Feb. 1979:A1). Journalistic representations like these provide fodder for now familiar critiques over the increasing celebritization of intellectual work, a critique hardly limited to the evolutionary sciences. And while it may be true that academic stardom problematically inhibits the creation of shared knowledge, pitting one anthropologist against another for example, it strikes me that much comment on celebrity culture's presence in the academy is also too fixated on the popularity of researching subjects, blind to the irresistible appeal of the researched object. Scientists are very often the b-list stars in their spectacles, and Johanson and his distinguished rival were barely stars at all. Outshined by the tools of their trade, these origins researchers primarily assumed the job of starmaker for the fossils they so intensively promoted and managed.

How, then, can we think about specimens as stars? How can we consider Lucy as an It Girl much like any other, without resorting to reductive observations that she fits the profile all too well: an industry vessel, skinny and vacant? The characterization has some dark humour to it, but there are other ways of conceptualizing her stardom that work better with the particular demands of scientific production – the exact opposite demands that objects of knowledge be superficial. As we saw in chapter one, scientific objects, if they are to be taken up by a research community, must be understood as having

something worthwhile to offer. They must be able to override objects that lead to alternate conclusions, convincing scientists who are receptive from the onset as well as those who are staunchly opposed.[2] All of this takes a certain degree of substance; the sense that the object has enough epistemic value to redirect research programs towards better, more accurate, outcomes. In other words, good specimens, most useful specimens, must bring the community closer to the truth of nature.

Reading the work of Richard Dyer (1991) it becomes clear that science is not the only realm that makes such demands. Hollywood and its fan base also need substance in their objects of knowledge, a substance that can likewise approximate truth. In an essay that analyses the celebrity of Judy Garland in A Star is Born (dir. Cukor 1954), Dyer traces out a star theory of startling resonance for Lucy's case, and one which warrants frequent visits throughout my analysis. The essay begins with "common-sensical" ideas of what a popular star is thought to be:

> There is a whole litany in the fan literature surrounding stars in which certain adjectives endlessly recur – sincere, immediate, spontaneous, real, direct, genuine and so on. All of these words can be seen as relating to a general notion of 'authenticity'. It is these qualities that we demand of a star if we accept her or him in the spirit in which she or he is offered. Outside of a camp appreciation, it is the star's really seeming to be what she/he is supposed to be that secures his/her star status, 'star quality' or charisma (133).

Oddly out of step with the raw semantics of the word "star" itself – ethereal, magical, of the heavens – the true star evokes an aura of proximity, which Dyer aptly terms "girl-next-door-ness". Whatever unattainability she embodies is tempered by the feeling that she is just like you or me, though somehow more compelling, perhaps by virtue of her

[2] The Leakey family, for instance, was the most vocal opposition to Lucy's scientific promise. Richard and mother Mary downplayed Lucy's potential by maintaining that she belonged not to a new species, but one that had already been named.

ability to remain honest under the spotlight. We love her for that. While lesser notables leave us wondering who is underneath the public persona, or if there is even a real person to find, It Girls have strong continuity between the star-as-image and star-as-real-person (136). Moreover, their effect is to cancel any meaningful distinction between the two, a satisfying union of signifier and referent. This is why, for example, the photograph of our offscreen Zira does not find her out of costume, for there is no costume out of which to change. The gentle yet feisty hominid is the same in front of the camera as she is out of its range; onscreen and offscreen are in sync. From this parallel comes the definitive star quality of substance, of realness at all times, a merger of performance and being that can generate and sustain the adulation of a fan.

Whether or not the parallel is sustainable itself is another matter, especially amongst less fictional stars. Taking stock of the range of representations for a single real-life celebrity, it is hard to always transpose the star-as-image on the star-as-real-person, or vice versa. Dyer draws attention to the more frequent case in which they are at some kind of odds, a scenario that helps explain the growth and subject matter of tabloid journalism, unauthorized biographies, Entertainment Tonight and its variants (136). Media forms like these exist to find the scandalous gaps between a star's two orders of operation. But a savvy It Girl and her entourage are not seriously hampered by the discovery of contradictory claims. At times, they even serve her well. Britney Spears is one celebrity to point to here. In the words of one Entertainment Weekly reporter who went backstage: "It takes a minute or two to make sense of the visual disconnect between the video vixen who shimmies on MTV in rip-away nudie suits and the giggly girl before you" (Nashawaty 2001:31). It is worth noting which of Spears' identities enjoys the status

of authentic, and how her backstage ways are another illustration – a nearly parodic one – of the importance of being true. The pop star is the ultimate girl-next-door precisely because she is revealed to be one. Behind the sexpot lies the "real" Britney in all her innocence.

If we rotate Dyer's account of stars ever so slightly, switching our focus from Zira and Spears to something more scientific, things get interesting. The reality imperative at work in celebrity culture begins to resemble a similar imperative at work in modern science. What I would like to tease out here is a link between the realism of star quality and a Western philosophical tradition known as scientific realism. A core value in all scientific practice, scientific realism believes first and foremost that objects of knowledge actually exist. As philosopher Ian Hacking (1983) puts it: ". . . the entities, states and processes described by correct theories really do exist. Protons, photons, fields of force, and black holes are as real as toe-nails, turbines, eddies in a stream, and volcanoes" (21). More materialist versions of this concept underscore the truth-value of physical things in particular, and scientists' unmediated access to that materially-based truth: "Realists tend to emphasize the impact of the material world on the resulting representation, and minimize the effects of human agency; for realists, scientists and their work are essentially transparent" (Sismondo 1996:6). This amounts to a second principle of realism: that scientific theories are one-to-one reflections of reality.

How familiar these definitions sound next to Dyer's notion of stardom! Like the Hollywood star, a proton is valued because it is understood as part of the real world in which we live. Its circulation in physics is corroborated by its existence in nature, just as a celebrity's circulation in film, television or music is complimented by her life out of the

popular eye – a natural life. This is to say that a both a proton's representation in science and a star's representation in the mass media stand, in realist circles, as parallel lives to their actual ones, effectively erasing all signs of representation. Here we can begin to make out the connection between our two realisms. Each functions through a commitment to "invisible" mediation, and more fundamentally, a commitment to the very possibility of a reality in embodied forms. "Sincere, immediate, spontaneous, real, direct, genuine and so on" (Dyer's list) become characteristics of both a star and any given proton. This is not because the proton migrates into celebrity culture and thus becomes constructed like Hollywood icons. Nor is it because celebrity culture has seeped into the scientific field, transforming the proton into a true-to-life fiction. By privileging authenticity, one of modern science's major philosophical tenets enables the production of stardom in an object without ever having to move to Hollywood, or have Hollywood move into science. The object can be understood as a star on its own terms, the terms of scientific realism. And it is this stardom that can help authorize the knowledge of that object, since celebrity as a quality makes the star and everything about her seem more true. In the proton, we could say, is a strange but commanding kind of girl-next-doorness.

Protons aside, celebrity and its realist powers become particularly important when the object at issue is a species.[3] This is because the idea of "species" is perhaps one of the least essential knowledges in the scientific field. Writing on taxonomic language, Alan Gross (1990) maintains that species cannot be thought of in realist terms. To define a species as an actual thing existing outside of science would be like "trying to find the real artichoke by stripping it of its leaves" (paraphrasing Wittgenstein) (34). Instead, species

[3] To clarify, evolutionary sciences have multiple objects depending on the context. While fossil specimens are arguably the primary objects of knowledge, the species they represent constitute a second, less material, kind of knowledge object.

creation involves comparisons and contrasts between one set of specimens and another – quite a different epistemological strategy. These relativist and interpretive exercises, however, must produce the *illusion* of the species having always been there, as an object to be discovered rather than constructed: "... scientists create an ontology that persuade their fellows, an ontology in which plants and animals have been brought to life..." (41). Simply put, a given species, even though it is highly produced, gets legitimized through the sense that it exists independently of its producers. Stardom, then, has much to offer a fledgling species. With its air of substance, it finds an eager receptacle in the un-speciated specimen. The specimen-as-star carries the realism it would otherwise lack, and extends it to the biological category it comes to materialize.

There are specificities to Lucy's science that make her realness even more potent, a charisma that surpasses nonhuman(ed) specimens. Meditating on the "It Girl" moniker shows some of them. Lucy, it would seem, is part It and part Girl. Part It, she is endowed with the requisite materiality, a sense of thing-ness, to satisfy the scientific realist. Part Girl, she also stands as a persona of feminine purity and goodness that appeases the popular realist, much like Spears' inner girlhood does. Not quite a seamless fusion, however, the awkward contiguity of these ideas can be heard in the abrupt, staccato-ish sound the two words make when set side by side. Imagining Lucy herself voicing the name adds something to the effect: *It. . . Girl* or perhaps . . . *IT GIRL!*, two renditions that call up images of prelinguistic creatures struggling to make themselves known amongst more enculturated, mediated types. The project of fossil hominid discovery revolves around this very objective. It seeks to make distant ancestors present enough to recall a time and place of deeper authenticity, giving us a sense of who they and we "really" are.

This search for The Original – despite evolutionary theory's principle that the origin is never fixed – gives paleoanthropology a strong realist colouring.[4] Out of the ground and back from our beginnings, Early Man is a most down-to-earth specimen, the one who has "been there" and now lives to tell about it. Lucy even exceeded Early Man status. Not fitting into the *Homo* genus, her morphology brushed closer to the edges of animality and thus emphasized her naturalness all the more.

In addition to the realist appeal of origins, is the realist appeal of humanity, another mainstay of hominid research. The idea of humanity and the idea of authenticity are often confused, and at times made synonymous. To be human, we presume, *is* to be authentic. It is a mode of being that summons those unplanned, unmediated qualities that we cannot hide, that betray any effort to be more or less than what we "actually" are. Only monsters and superhumans can escape the conditions of reality, we say, neither of which are our prehistoric kin. Proto-humans, humans-to-be, fossils like Lucy are conceptualized through the realist spill-over that full humanity discursively contains, a star quality that one is simply born with.[5]

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[4] Paleoanthropology's realism is one of the more underexamined aspects of the field, whose main profile continues to be that of speculation. Human origins research is most often discussed in terms of its unrealistic dimensions, such as conjecture about the behaviour of ancient hominids.

[5] More recent versions of the science attempt to break the habit of drawing progress lines from early to modern man, showing that primitive humans were *not* in fact future humans, but successful creatures in their own right, surviving for millions of years. But the legacy of ladders, chains and other metaphors of progressive humanity endures.

Scientific Publication as Exposé

So much for specimens, now what of scientific articles? In one of the more extravagant passages of Latour's writing, the sociologist of "science in action" argues for their profoundly artificial and lively character:

> The more we get into the niceties of the scientific literature, the more extraordinary it becomes. It is now a real opera. Crowds of people are mobilised by the references; from offstage hundreds of accessories are brought in. Imaginary readers are conjured up which are not asked only to believe the author but to spell out what sort of tortures, ordeals and trials the heroes should undergo before being recognised as such. Then the text unfolds the dramatic story of these trials. . . The author adds more and more impossible trials just, it seems, for the pleasure of watching the hero overcoming them. The authors challenge the audience and their heroes sending a new bad guy, a storm, a devil, a curse, a dragon, and the heroes fight them. At the end, the readers, ashamed of their former doubts, have to accept the author's claim. These operas unfold thousands of times in the pages of Nature and Physical Review (for the benefit, I admit, of very, very few spectators indeed) (1987:54).

The synopses is entertaining, validating too for those who spend time analysing apparently soulless documents, but it is Latour's passing comment about the size of these shows that grabs my attention and marks the beginning of my critique. Successful opera companies, to extend the metaphor, cannot survive on miniscule audiences and multiple programs. Divas do not perform well under such conditions, the costs of producing lavish epics are generally high. Then there is the issue of competing cultural activities. Why sit through a packed season of archaic melodramas when science fiction movies feature similar themes but with better effects? We can see here the liabilities of Latour's strategy of drawing discursive equivalencies between scientific and popular mediations, which in and of itself is not at all misguided. The problem lies in overlooking the ways in which modern science and its activities already always exist within a popular context. A scientific article is not published in a vacuum. Its role and attraction for the scholarly

audience stands in relation to other entertainments that are not considered scientific – which is to say, what the article can offer the scientist that he or she cannot find anywhere else. Consequently, mine is an argument for the *specificity* of scientific publication that can simultaneously explain an article's position in the broader, borderless phenomena of scientific knowledge production/specimen star-making. So, while Latour would describe the scientific article as a "*staging* of a scenography in which attention is focused on one set of dramatized inscriptions" (1986:19), I ask: Is it not possible that the stage has already been set in a wider cultural milieu, leaving scientists craving other forms of entertainment in their literature?

This was certainly the case for the Hadar finds of 1974. By the time Lucy and other similar specimens appeared in scientific publication, knowledge about the collection was already in production. The discovery of these promising fossils fragments was announced as early as the winter of 1975 and as prominently as Section A of The New York Times. When Lucy was formally submitted as evidence of a new hominid species in the American journal Science in 1979, the skeleton had accumulated a full four years of advanced publicity in the scientific and news media, though not always under the banner of a direct ancestor.[6] But regardless of her fluid signification, Lucy was pegged as star material – literally and figuratively – well before the Science article hit laboratories. "You just don't expect to find this much of a single individual, just bits and pieces," Johanson was quoted as saying back in 1975, "We were just astounded when we realized

[6] How Lucy's status as evolutionary knowledge changed is another story to tell, and one which warrants brief mention here. Initially, the fossil was not believed to be a direct ancestor of modern humans, nor a new hominid species. Johanson argued as much on more than one occasion. Later with the 1979 publication of the new species name, Lucy's status was revised to what she is currently known for: evidence of *A. afarensis*, one of the earliest links on the trajectory of human evolution. These shifting lines of one fossil's meaning remind us that if our origins are to be discovered, they are also to be debated, modified and otherwise actively constructed.

what we were finding" (Rensberger Feb. 1975:14). Then, in National Geographic's December 1976 issue, Lucy was featured as the major discovery of the Afar International Research Expedition. Expanding the scope of production even further were the popular fads of the cold war origins scene and a longer cultural preoccupation with the theory of missing links (see chapter one). Given that the perilous adventures of this heroine, in Latour's words, had been presented to a much larger audience – of which scientists were a part – the idea that their literature would engage in similar histrionics seems unlikely. Already known "superficially", there was no cause to construct Lucy to scientific readers through melodrama, when what origins experts needed was more realistic (read: realist) knowledge of what the budding celebrity was like. This requirement, of learning Lucy's true story, confers a very different logic to the scientific article. It constructs these technical documents not as outlandish public rhetorics of presentation posited by Latour, but something more up-close-and-personal: a low-key rhetorics of revelation. My wager is that the scientific community consult and take seriously those mediations promising refuge from a storm of popular artifice, that redirect the tenor of knowledge production away from boisterous *TA DA's!* and towards understated whispers of *ahaaa*...

Consulting Zira's snapshot helps refigure the conceptual space and ontology of scientific publication in greater depth. Here we have the photographic incarnation of technical articles as I understand them: a behind-the-scenes disclosure of the star as she "really" is. The picture reaches desperately for such realism: Zira and her producer, two professionals at ease in director's chairs chatting informally, perhaps about an upcoming scene, perhaps about one that has been shot. Zira holds a cigarette, Jacobs is turned attentively in her direction. Everyone seems relaxed and off their guard. These kinds of

authenticating markers can be organized into a triad, as Dyer does in his study of Garland. For Dyer, celebrity authenticity is expressed through 1. a sense of privacy 2. a lack of control 3. a lack of premeditation. Marshalling these markers "return us to notions of the truth being behind or beneath the surface" and confirm that what we are looking at is the real deal (137). The success of Zira's offscreen image, her star power, hinges on the degree to which the photo's anti-performance can communicate these carefree qualities, giving us a glimpse of the star's essential self.

But alas, she fails quite miserably; the fabulous monkey suit gives it all away. Most celebrity-at-work tableau's feature human beings, not an ape-lady dressed in a snappy double-breasted coat with what looks like her handbag hanging over the chair's arm. The absurdity of the ensemble reminds us of the mediated dimension of this locale too, that behind-the-scenes is a site of representation and performance as much as any stage, emphasized here through a kind of caricature of representation itself: hours and hours worth of simian make-up. This literal excess of layers ensures that nothing in this photo could be more artificial than Zira as she "really" is. She is neither a real woman, since real women are not so shaggy, nor is she a real ape, since real apes are supposed to be naked, feral and nonsmokers. The all around lack of celebrity authenticity disrupts the possibility of revelation and pollutes the feeling of proximity created by the other naturalistic markers in the image. As a result, the entire photo and the knowledge it suggests is rendered suspicious. Zira, sadly, is not a true star – or at best does not have the same celebrity potential as Lucy. Behind the cold war origins scene, it was Lucy that consistently passed these reality tests with flying colours, strengthening her star power and taxonomic knowledge with the publication of each scientific exposé.

How did Lucy pass these tests? More to the point, how did she satisfy Dyer's criteria for being authentic? In the context of a her popular public image, it is easy to see how her documentation in journals can be read as a form of privacy. Less obvious are the ways in which her publication jibes with being unbound and off-the-cuff, qualities that are counterintuitive to a general notion of scientific writing. The modern scientific author, after all, is the penman of command and control, enlisting charts, graphs, maps, technical terms and photographic proofs. There is little that we could call relaxed about this literature. At a certain angle, standard elements of the scientific article even begin to look like Zira's hyper-representationalism. It too goes through hours and hours of careful construction. Without disputing these valid observations, we can focus instead on the sheer volume of control mechanisms deployed to capture and communicate the essence of this fossil hominid. Lucy's publication creates an excess of language that demonstrates precisely what science cannot control: its appetite to know. In this sense, there are promising openings to think about the scientific article as space without restraint, a space of neurotic overkill on the same order as Judy Garland's behind-the-scenes musical number in A Star is Born:

> ...several of Garland's gestures and facial (particularly mouth) expressions are redundant in terms of directly expressing or underlining the words or musical phrases of the song...she brushes a lock of hair off her forehead after bringing her hand to her throat on the words, 'No more that all time thrill'; but her hair is cropped, there is no lock on it (Dyer 1991:138).

Appearing early on in the film, this is the number in which the audience and the story's starmaker discover the singer's raw talent and never look back. In its surplus of speech, its exaggerated signs of being natural, Garland's performance engenders confidence in the credibility of her stardom, a faith that her talent is the stuff of legend, or will soon be.

The same can be said about some of the first published scientific descriptions of Lucy. Appearing in the March 25, 1976 issue of Nature, these descriptions also had the task of identifying the "little something extra" in its ingénue, paving the way for future papers that would consolidate her iconic status. These were paragraphs that appeared early in Lucy's career and assured a specialized audience that she too had a star quality of monumental proportions. Mirroring the profusion of Garland's expression, the scientific descriptions scrutinize every nook and cranny of the hominid's "inner self". In this one, the partial skeleton is overdetermined as female:

> The left innominate is complete, although it is somewhat distorted in the pubic region and particularly in the area of sacral articulation, In size the specimen resembles Sterkfontein (Sts) 14; the ilium, however, gives the appearance of being higher, and the anterior border is relatively straight. A strongly developed anterior inferior spine is apparent. The acetabulum is shallow when compared with modern man and with Sts 14. The sciatic notch is broad, the subpubic angle obtuse and the pubis exhibits a pronounced ventral arc, all of which suggests the skeleton belonged to a female. When viewed from the superior aspect, the base of the sacrum is divided into thirds, with the diameter of the sacral body equal to each of the alae. This again suggests that AL 288 was female (Johanson and Taieb 1976:296).

This is no opera. Highly technical, claustrophobically close, diligent in its inspection, the sensationalism of this profile springs from its descriptive excess, the sense that we are bearing witness to the reality of Lucy at her most ordinary (girl-next-doorness). Exposures of this kind are part of a rhetorical technique in science writing that seeks to create a presence for knowledge objects that are not physically accessible to the reader. Extensive detail becomes a surrogate for the actual experience of being with Lucy, bringing her and her femaleness to life for those who have not studied the object first-hand (Gross 1990:43). In science studies literature, the strategy is referred to as "virtual witnessing", historical examples of which date back to the Enlightenment and the

experiments of Robert Boyle.[7] Crucially, virtual witnessing is also the gift of celebrity exposé Hollywood-style: the ability to construct nearly tangible, one-on-one encounters with an extraordinary ordinary. Microscopic morsels of "real life" celebrity information are dished out by starwatchers in the very same spirit as Lucy's scientific debut. Where did she go last night? With whom? What did she eat? What was she wearing? That this feeling of being right there is accomplished through an excessive display of authenticity is one of the paradoxes of exposing/composing specimen stars.

Lucy Tells All

I get many productive laughs out of Zira's photograph, one source being the conversational dynamic at play in the image. The film producer listens to his talent as the ape-lady *speaks*. Even if she is not actually speaking (the image is uncertain that way) the intimation of talk alone is enough to humour me. Everyone knows that the lower order primates cannot talk, but the picture before me suggests otherwise. Furthermore, it appears as if Jacobs is taking her quite seriously – hand to chin in some kind of straightfaced contemplation. Is this the kind of shocking scenario that unfolds behind the scenes? In a way, yes. Unscripted, the star is free to speak out of character – or as the case may be here, just to speak! In this space of privileged information, we find out what the star is truly capable of.

The sight of this talking ape-lady sparks connections to a basic principle of scientific inquiry: that nature has something to say, and that the scientist's job is to listen without prejudice, i.e., no laughing. Origins researchers seem especially fond of the

[7] I am referring here to Steve Shapin's (1985) book length study entitled Leviathan and the air-pump: Hobbes, Boyle, and the experimental life.

verbal powers of nature, specifically the secrets that prehistoric bones can unambiguously divulge. Johanson, for one, has written often about this. Years after her discovery, "Lucy and her family still have much to tell us" (1996:117) and more generally, "We want to know what the fossils have to say to us" (Johanson and Edgar 1996:21). At its extreme, the relationship between fossil material and the paleoanthropologist assumes shadings of confessor and confidant, with a touch of the supernatural thrown in for added kicks. Johanson's interlude with a collection of Hadar jaws is one of the stronger illustrations of this:

> Alone in my office one night in the basement of the Cleveland Museum, I got out all the jaws and lined them up on the table. It was utterly quiet down there. The laboratory was like a bomb shelter: concrete-walled, belowground, windowless. In that silence I stared at the jaws. At the rows of pearly gray teeth, the rough brown jaw-bones. Sitting there, unlabeled, unidentified, they seemed to mock me. 'What are we?' they whispered. 'We are three million years old' (Johanson and Edey 1981:237).

With the hermetically sealed laboratory, the expectant scientist and the haunting confessions, this vignette could almost be a satire of scientific research itself, save for the fact that Johanson is not at all being critical. If we consider how scientific journal writing aspires to this same vignette but with slightly different participants, we can begin to understand how the notion of a talking nature makes its way into publication too. The vignette found in journals is similar to Johanson's in the sense of trying to create actual encounters between scientists and specimens, but different in the sense that the researching scientist is exchanged for the reading one, equally anxious to hear what nature has to say. This is what I mean by suggesting that the doctrine of "letting the evidence speak for itself" is not confined to investigations. It also exists in articles that give readers the simulated laboratory experience, the up-close-and-personal event of

virtual witnessing. So, while fossils whisper to Johanson in the privacy of the "bomb shelter", they also whisper in the semi-privacy of scientific publication – a stark contrast to the more public hype that the popular press created for Lucy at the apex of her fame. Newsweek, for instance, began their story on "Finding Eve's Cousin" with typical fanfare: "Lucy spent an idyllic life in lush grassland near the edge of a lake. She feasted on crabs' claws and turtle and crocodile eggs. But she suffered from arthritis of the spine and died at the age of about twenty. Three million years later, Lucy has become a celebrity" (Gwynne and Begley 1979:81). Amidst such showmanship, how could an It Girl get a word in edgewise? And what scientific reader would take this fantastic profile and the knowledge it offered seriously?

More conducive was the 1976 article appearing in Nature, where at times Lucy appears to be speaking as freely as Zira in Jacobs' offscreen company. In much the same tone as the passage on her feminine attributes, Lucy "says" of her dentition:

> The mandible is not heavily built; it is 30.0 mm deep and 19.0 mm thick in the region of M1. The M3s are fully erupted and occlusal wear facets are just appearing. The symphysis is intact with a slight post-incisive planum. Although the incisor crowns are absent, it is apparent that this region was quite small. The remaining dentition is small and not very worn. The P3s are interesting with a sloping buccal surface and almost no development of a metaconid. The form of the dental arch as well as the body of the mandible is distinctly V-shaped (Johanson and Taieb 1976:296).

Interesting here is the heightened presence of Lucy's anatomy – a skeletal apparatus for speech no less – relative to the near total absence of the scientific writers who create that very presence. Where are the authors here? By disappearing, Johanson and his co-author, Maurice Taieb, strike the model pose of exposé reportage – namely, that of the ghost writer. Ghost writers are the quiet technicians behind many celebrity confessionals, transcribing and narrativizing the lives of their employers, but taking none of the credit.

This is the It Girl's own story as only she can tell it. From their anonymous pens comes an ambience that finds the reader and star specimen in cozy conversation. Writers, it would seem, are the last of many media layers to be peeled off before the material evidence of A.L. 288-1 can speak directly to inquiring minds. And, just like her pelvic disclosures, what Lucy has to "say" about her mouth involves a mixture of pearly wisdom and banal detail.[8] In any event, she is admirable for being so open with us.

Another way of thinking through Lucy's speaking engagements in the scientific literature comes from Science, 26 January, 1979, pp. 321-330. Under the title "A Systematic Assessment of Early African Hominids" Johanson and this time Tim White give the partial skeleton not only the ability to talk for herself but also the ability to talk for others. Though she shares the article with a large sample of other "individuals" from Hadar and Laetoli it becomes increasingly clear that Lucy is the spokesperson for the whole group. Early in the paper, she is revealed as the stand-out specimen:

> Nearly all anatomical regions of the body are represented in the collections from Hadar. This situation is unprecedented for the earlier portion of the fossil hominid record. For example we have nearly 40 percent of a skeleton known as 'Lucy' from Afar Locality (A.L.) 288 and more than 200 specimens representing an absolute minimum of 13 individuals from A.L. 333 and 333w (321).

Besides being the first and only personally named example, Lucy is also listed as the last example in the article's overview of anatomical descriptions:

> One of the potentially most significant bones, the A.L. 288-1 innominate, is currently being reconstructed. It's morphology is commensurate with a bipedal mode of locomotion. The specimen displays a straight anterior margin between the anterior superior and inferior spines, lending a heightened appearance to the illium. These and additional postcranial features will be elucidated by biomechanical and anatomical studies (324-5).

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[8] To elaborate any further on what the passage means from a *semantic* perspective would be pointless for my purposes, not to mention an arduous lesson in hominid morphology.

Bookending the collection in this way gives Lucy first and final word on the nature of the finds. Moreover, readers get the feeling that she has the most of all to say, as suggested by her number of parts and the reconstructive and analytical attention promised to them. This is why the decision to *not* pick Lucy as the official type specimen of the new species was disagreeable to many origins experts. Notable scientists like Ernst Mayr were convinced that Lucy was the best fossil for the role, and publicly expressed their misgivings with Johanson and White's selection of L.H.-4, a jaw fragment from Laeotoli.[9] Lucy, meanwhile, was chosen as one of many paratypes of the species, a less prestigious position. But whatever the specimen lacked in official titles she made up for in unofficial ones. The only fossil described repeatedly as "the most complete" adult skeleton and the fossil most frequently detailed on its own, Lucy's appearance in the Science paper constructs her as someone to listen to, someone who is capable of speaking about her kind. By comparison, L.H.-4 seems like a minor celebrity, if that. Never described by itself, the jaw is relegated to parenthesis that it shares with other specimens, muzzling the crucial sense of one-on-one conversation. For example: "The ramus usually joins the corpus at a high position, defining a narrow, restricted extramolar sulcus (A.L. 266-1; L.H.-4)"; "The lateral contours in the region of the mental foramen are usually hollowed (A.L. 333w-60; L.H.-4)"; and "There is strong posterior angulation of the symphyseal axis (A.L. 400-1a; L.H.-4)" (323-24). Anatomical one-liners like these indicate that the Laeotoli jaw, while certainly talkative, has nowhere near the star power of Lucy. Her confessions, pronounced and personalized as they are, generate much more legitimacy – for the fossil and her prehistoric contemporaries.

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[9] Mayr's documented comments on this are succinct: "It is so obvious to choose the Lucy skeleton. There is so much more of it that this scrap of jaw from Laetoli" (Lewin 1987:294).

Lucy Bares All

Paired with the value of whispered confessions is the favoured tool of all serious realists: the visual record. Images are the stock and trade of exposé, traditions unto themselves in both celebrity and scientific culture.[10] Writing on visual representations of missing links in particular, Stephanie Moser (1996) argues that pictures of these human-like creatures carry unique epistemological significance and affective power. In ways that words cannot accomplish, missing link imagery has historically been consulted to address origins science's guiding question of what it means to be human. Legible symbols of nonhuman and human status abound in these spectacles of "deep time": from vacant, animalistic expressions to sophisticated tool use, from savage hunting scenes to nuclear family relationships. Their speculative quality notwithstanding, these reconstructions normalize the knowledges at issue, making them visible and thus understandable to the student of partial humanity. This is why textbooks on human evolution, for example, are so heavily illustrated. The arguments are far more convincing when made visually.

I agree with Moser that the problem of our beginnings is addressed and authenticated largely through visual means, and I am curious how hers and other similar interpretations take shape in the context of Lucy's scientific publication.[11] Journals responsible for revealing the specimen's true nature did not feature reconstructive illustrations, but they did make use of what I fondly identify as Lucy's portrait (fig. 16).

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[10] See, for instance, Harris, Thomas (1991:1957) "The Building of Popular Images: Grace Kelly and Marilyn Monroe"; Wolfe, Charles (1991) "The Return of Jimmy Stewart: the publicity photograph as text"; Brian S. Baigrie ed. (1996) Picturing Knowledge: Historical and Philosophical Problems Concerning the Use of Art in Science.

[11] The other interpretations I am speaking of are Melanie Wiber's (1998) in Erect Men, Undulating Women and Donna Haraway's (1997) in Modest-Witness.

The "full body" figure prominently appeared in the literature alongside her anatomical descriptions; in one article occupying over one third of the page, in another located in the centre framed by written text. Neither article finds Lucy sharing the page with images of another fossil. If this portrait of hers is, like illustrations, key to the production of human origins, then how so? A conspicuous part of a behind-the-scenes scene, how might this picture have addressed and authenticated the proposition of a new hominid taxon in a fashion we could call *revealing*?[12]

Lucy's portrait is bound up in the truth-value of photography generally. In photos, Dyer tells us, is a predisposition towards reality: "A photograph is always a photograph *of* something or somebody who had to have been there in order for the photograph to be taken" (135). There is less cause for skepticism looking at a photo than, say, an illustration because it qualifies as one of the most naturalistic forms of representation. Even after over a century of learning otherwise, "...the residual sense of the subject or person having-been-there remains powerful" (135). For an It Girl on the rise, photography's ability to validate what or who is represented makes it an ideal instrument for establishing both the star-as-real-person criteria and the necessary proximity between star and fan. Little, it seems, comes between this documentation of celebrity existence and what Jann Matlock (1995) calls the "realist gaze". This partly explains my own attachment to the photograph of Zira. Not quite satisfied with her portrayal on film (how can I accept the violent death of my heroine?) I look to her offscreen image for signs of another life. That the photograph is, to my eyes, fairly uncomposed makes me all the

[12] This is a different interpretation from much analysis of scientific imagery, which focuses on the display quality of pictures. As with written text, my reading is less about the exhibitionism of the scientific object through images than the work imaged objects do in uncovering the truth about nature, work of revelation over presentation.

fig. 16 Lucy's portrait in Nature, 25 March, 1976.

fig. 17 Lucy fleshed-out in Newsweek, 29 January, 1979.

more fascinated and hopeful that the camera documented who was truly there, that the camera itself was less mediation than mirror. Admittedly, the reading is not so naïve. I am well aware that Zira does not exist in the sense of an actual being; it is Kim Hunter that lies beneath after all. I am also aware that cameras lie. Regardless, I continue to like the snapshot in a way that cannot honestly be labeled ironic. My affection for visible evidence of a living breathing ape-lady is more sincere than that, and consequently implicates me in this seductive interplay of authentic object and ogling subject. On some enigmatic level, I believe – a testament perhaps to the realist force of the medium.

Lucy's portrait works along similar lines. The documentary character of the photographic image feeds the sense that Lucy is genuine. The specimen must be real because it was present for this snapshot. The camera takes a backseat to the close gazed-gazer dynamic that it cultivates. Representation is barely there. Compounding this realism is the object of the photograph itself. Forty seven bones is the hominid body at its most elemental, a basic materiality that almost seems like *nothing but* nature. The naturalism of the image's content seems to flow into the form, validating claims that Lucy is the real thing, a bona-fide hominid being.

When juxtaposed to Lucy's appearance in the popular press, the portrait's naturalistic value intensifies further still. A reconstructive illustration of the skeleton in a January 1979 issue of Newsweek provides a striking contrast (fig. 17). With a filled out frame, quizzical expression and clumsy pose, the Newsweek Lucy has more in common with the outlandish supporting cast of the cold war origins scene than the Lucy visible in scientific journals. Chewbacca is one soulmate that comes to mind, minus the profusion

of body hair.[13] The movement from fleshy fantasies like Newsweek's to the bare facts of Lucy's portrait was repeated over and over again in origins research circles, constituting the quintessential gesture of exposé: a stimulating striptease of mediation that leaves nothing but the nitty-gritties. From the looks of it, nothing is being concealed in Lucy's scientific photograph. No skeletons in the closet here; rather, a hard truth for inquiring minds that are unsatisfied with Lucy's fuller form in mainstream circulation. In this way, her portrait becomes a key element in star-making. Its orchestrated uncovering, i.e. the event of its scientific publication, sets her apart from other fantastic figures of the origins scene, including her own.

I stress the idea of orchestration to once again draw attention to the active workings of representation behind-the-scenes. The effect of baring all is as contrived as talking fossil evidence. Just as ghost writers authored Lucy's testimony in the scientific literature, her portrait had its silent inscribers too, their traces being even more difficult to spot. If we compare the 1976 version of the image to the one in 1979, however, it becomes more clear that Lucy's definitive profile is not so definitive (fig. 18). The former photo displays her skull fragments in disarray and a relatively sloppy positioning of the rest of her remains. The latter shows the bones in a more orderly arrangement, plus one additional set of ribs! This mini narrative of rearranged body parts – a narrative which carried on for years with each slightly different portrait publication – reinforces Dyer's observations on the construction of authenticity. Indeed, it forms an unexpected parallel to historical trivia surrounding Judy Garland's after-hours song in A Star is Born. While the solo was shot in one long take, capturing the seamless continuity, and thus realism, of

[13] In his study of freaks in space, Jeffrey Weinstock (1996) adds the trusty sidekick of *Star Wars* fame to the cold war origins scene: "Chewbacca is Big-Foot in space, the freak show hirsute man in orbit, the missing link between man and animal" (331).

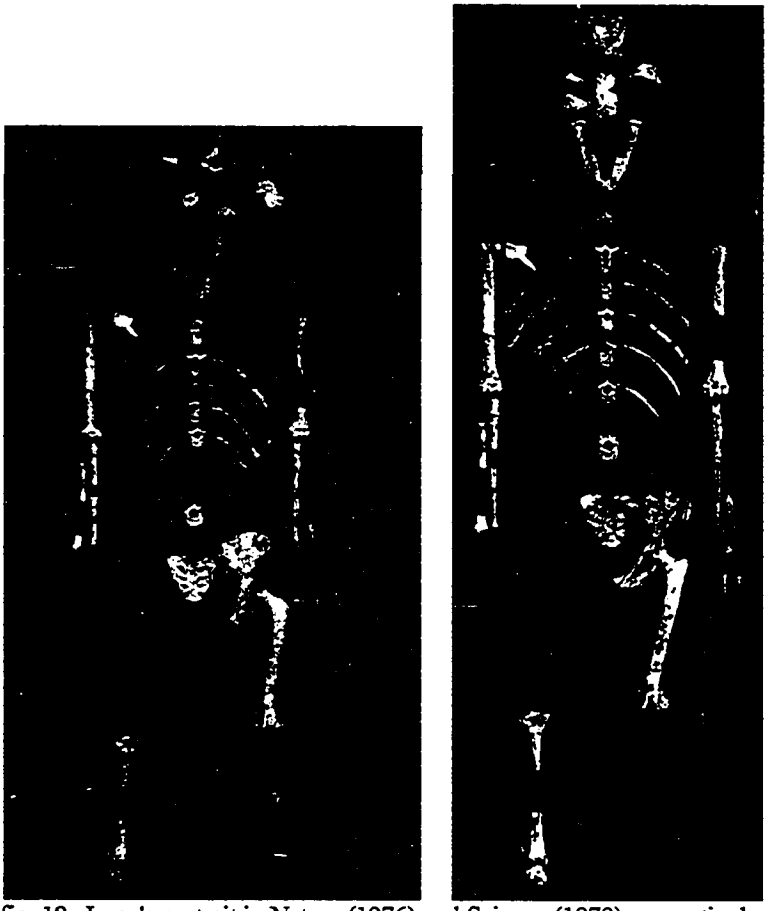

fig. 18 Lucy's portrait in Nature (1976) and Science (1979), respectively.

Garland's performance, the mechanics of its making were anything but seamless (Dyer 1991:138). Before arriving at the final product, the sequence was photographed in three different costumes on three different occasions in over forty different partial or complete takes, some of which find Garland striking the same "spontaneous" poses and gestures as the finished version. Moreover, Garland pre-recorded the song on September 4, 1953, performed the number for the cameras repeatedly in October, and once more for posterity in February 1954 (Haver 1983). The details of this musical number leave me wondering how many shots, and what kind, were taken of Lucy's bones to capture her most unrehearsed.

Much to this fan's delight, Lucy also performed once more for posterity, albeit decades later and without the thrill of exposé (fig. 19). This most recent portrait was taken by science photographer David Brill in 1996, appearing in the same retrospective volume on paleoanthropology that featured her reconstructed pelvis (see chapter two). This time, Lucy sports a curved collar-like bone on her right side. The skull and jaw have also changed, moved from a flat to a face-on angle, from a horizontal position to a vertical one. The effect is to make her fossil form seem more stable and finished, on a plane of display versus its former appearance of being in-the-works, subject to scrutiny, obsession, change. Here is a distinctly different aesthetic. It evokes a sense of composure, peace even. It showcases a celebrity who has arrived and is growing old with grace and dignity. It is Lucy after the hype and the sensational efforts to go behind it. By the 1990's, the hominid and her kind were widely accepted as evidence of *Australopithecus afarensis*. The scientific community had moved on, fawning over fresher faces that could substantiate ideas of more ancient species. In this sense, Lucy's latest portrait is relieved

fig. 20 Reconstruction of *A. afarensis* in National Geographic, March 1996.

Between two worlds

Signaling with waves and calls, an *afarensis* group warily moves on after foraging for food. Pollen evidence proves that these hominids lived in forests of juniper and olive trees. Their hips, knees, and ankles enabled a humanlike walk. But long, powerful forearms, curved fingers and toes, and upward-tilting shoulders all indicate that *afarensis* also climbed trees, probably to search for fruits and nuts, possibly to escape predators or to sleep. Thickly muscled, males appear to have averaged five feet and a hundred pounds—at least a foot taller and two-thirds heavier than females.

After the Fact

The same year that David Brill photographed Lucy's skeleton at its most accomplished, a remarkable reconstructive image of her species was published in National Geographic (fig. 20). Painted by paleo-artist John Gurche in what appears to be acryllics, this slick re-make of a human origins classic translates a tradition of ink and watercolour illustration into a hyper-realistic display of "what we now know", thanks to Lucy and company. What might that be? Text in the corner of the centrefold gives the expected set of answers: What is known about members of *Australopithecus afarensis* is that they foraged for food and lived in forests; males were at least two-feet taller and two-thirds heavier than females; the creatures had a human-like walk, though they also climbed trees. But science fandom – mine and perhaps by now the reader's – has revealed another kind of knowledge about this species, one that recognizes how extraneous these printed facts are next to the orgiastic origins spectacle for which they presume to speak. Gurche's painting speaks much louder, offering a site to draw out these other knowable things about *A. afarensis*, seventeen years after its naming and over twenty years after the discovery of Lucy's tiny frame.

One of the things we now know is the difficulty of positioning this species between the human and animal world, despite the image's caption that suggests that very location. Lucy's production went a long way to ensure that the taxon would not be confused with something less-than-human, that the cultural trauma posed by the missing link would remain by and large the specialities of silver screens and sasquatch hunters. We now know that the ambiguity of a partially human creature has no safe place in the

legitimized science of origins, save for its abstraction in evolutionary theory. In Lucy's discovery, moments of doubt were consistently papered-over with years of deliberate human construction, influenced by bio-political aspirations for a transnational, transhistorical icon. Born and raised in the cold war, this species was not to be hybrid. Gurche's more recent representation of the taxon renews that commitment to resolve, or perhaps ignore, the space of in-between. Striking is how his resolution also renews the conditions of Lucy's humanity.

Like Lucy's maternalism and feminine wiles, it is a scene where the ape-men are Men and the ape-women are Women. Centre-stage is the lead couple: Alpha male is walking tall and proud, with eyes staring straight ahead; his mate is striding by his side, pregnant and gazing lovingly in his direction; his body is hairier than hers, her cheeks are rosier than this. Other males are climbing trees, being physical, foraging for food in the hard-to-reach places. Except for one female also in the trees, the other females stay on the ground, carrying their babies, looking upwards, worried perhaps. Mingled into these markers of original sexual difference are markers of sex appeal. Naked, slim and sexy physiques abound as almost every figure strikes a uniquely provocative pose, depending on one's taste. In the foreground is a hominid with brawny arms, chest and stomach. His statuesque form is enhanced by a glistening sunlight effect to accentuate muscular definition. Mr. Origins as Mr. Universe? Meanwhile, figures in the trees, equally buff, are flexing their bodies, including the female who grasps a branch high above her head, a seductive position for leering eyes. A grounded female raises her arm high above as well, creating a similar stretched-out/check-me-out posture. Her breast is illuminated by a sunbeam, while another mother's ass and shoulder blades get the light.

Thus, another thing we now know about this species is that it is doubly and distinctly human: first, in the way that all cultural knowledges belong to the realm of the human; second, and more significantly, in the way that human status here is made specifically knowable through concurrent constructions of gendered and sexualized persons. In this spectacle much like Lucy's, the species' humanity lies in demarcations of men and women, and the extent to which they can be construed as sexually desirable. It is a humanity more powerful than one expressed exclusively through the biological identities of bipedalism and brain size, and one that rivals the power of another cultural trope of humanity - namely, depictions of self-consciousness (Moser 1996:202). As the human dimensions of *A. afarensis*, machismo and femininity ultimately enable us to imagine ourselves in intimate relation to a remote other, implicating once more the knowing/feeling subject in constructions of knowable objects.

At the same time, we now know that humanized being and beginnings have a "form" as much as a "content", that they are expressed in a language of visiblity, excess and affect unique to sensational discourses. Once again the scene before us recalls Lucy's. Mysteries and stardom were discourses that could make Lucy's skeleton vividly meaningful. Here, accumulated fossil fragments are likewise made meaningful through an excrutiatingly detailed exhibition of natural living. Black body hairs are shiny and seperated, in high contrast to brown flesh. Facial wrinkles are pronounced too, as are brows (heavy), nostrils (cavernous) and mouths (wide). Vegetation also gets the reality treatment; nearly every leaf within sight and touch. Evidently, the species' quest for authenticity has not subsided after its naming. The artist himself has acknowledged that authenticity is of paramount importance to his descriptions of origins; the objective being

"to transport the viewer back in time and to see it not as some Fairyland world, but as a real, living biological system" (Katzman 2001). While Lucy can now afford dimmed lights and softer lenses, her people as a whole cannot rest easy on her knowledge achievements. The almost photographic realism of the painting keeps *A. afarensis* on the evolutionary playing field, a "living biological system" amidst discoveries of new fossils and re-interpretations of old ones.

Also keeping the knowledge in its place – a human place – is the angle at which viewers are positioned into the scene. The image puts us in the lower right-hand corner. Presumably, we are crouched down, inconspicuous and peering through the greens as the ensemble saunters past. Looks are exchanged between us and the two babies. . . who are shocked to see us? Is this another hidden knowledge we are witnessing, a revelation that exposes/composes yet another secret of origins? In a twist of scientific convention – which would otherwise find this spectacle *under* our gaze – our perspective shifts the view upwards, graphing a majesty onto the moving figures and giving them an importance assigned to monuments. Indeed, Mr. Origins towers over us, while alpha male is in direct line with the image's perspectival vanishing point in the sky above. Together, these aesthetics and arrangements underscore the human dimensions of the species through their overwhelming visibility, a visibility that overwhelms.

What we also may now know, then, are the stakes of this knowledge – high to be sure. Trafficking in the terms of humanity and their sensationalized disclosure, paleoanthropology has the power to define those terms, and by cultural extension, the terms of what is normal, what matters, and ultimately what is desirable. These implications show ancient hominid research to be a prescriptive practice as much as an

archival one. We do well to rethink paleoanthropology with this in mind, moving away from retrospective characterizations of the field that would keep it innocuous as a historian of humankind. Prescriptive paleoanthropology interprets human prehistory for the purpose of understanding how it bodes for humanity's present and future. It is a science that operates as the authorized agent of time-honored templates for how to be and build a better species. The knowledge is ominous for those who may not count as human – more ominous still when delivered over themes of extinction, survival and success. Most disconcerting is that this knowledge circulates in a Western public that now takes a special interest in species visions and their potential application, largely based on middle-class family wishes for the improved "quality" of unborn human life (CAE 1998). In this neo-eugenic climate, knowledge of humanity's formative years are bound to strike a resonant chord and be read as dormant potential. Moreover, this knowledge is accessible to other scientific fields that are ready and willing to up the ante, especially given the economic gains to be realized. Reproductive biotechnology is particularly well-positioned to transform normalizing representations into material embodiments, not through the sensational practices familiar to origins productions, but through a more insidious practice that was once called genetic cleansing and now goes by the name of prenatal screening. Under these circumstances, Gurche's reconstruction takes a chilling turn, as we stare once more at a panorama of idealized humanity and ask how making ancestral species facilitates interventions into our own.

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