What We Think We Are:
Maximizing the Subjects in the Human Sciences

Lantz FLEMING MILLER
Ashoka University, Department of Philosophy
Haryana, India
lantz.miller@ashoka.edu.in, lmiller@gradcenter.cuny.edu

Abstract

The human sciences, differ from the natural in significant ways. The complexity of subject matter may be to blame. Bases of controlled experiments differ, some human-subjects research hard to control, and there are moral constraints on what can be done to a human research-subject. Human-science subjects have a peculiar trait: Subjects' concepts concerning themselves play into what they are, even if some such concepts are false. The human sciences, in their struggle for objectivity, often commonly have allowed only limited role for subjects' concepts about themselves. This article contends that a significant amount of peoples' ideas and theories do influence their behavior – and most significantly, those ideas about themselves or reflexive concepts. Taking into account subjects' ideas of themselves appears to be needed in much human-sciences research to maximize study accuracy and completion.

Keywords: *epistemic predicament, grouping by natural kinds, grouping by social construction, objectifying vs. introspection / subjectifying, self-identity.*

Introduction

Despite aspirations to unify the sciences (Winch, 1990; Dupré, 1993), the human sciences, including psychology, anthropology, economics, and sociology, appear to differ from the natural in many ways. Complexity of subject matter and limited human capacities themselves may be to blame. It remains hard to trace the sudden upheaval of a riot to a set of quantum leaps. The bases of controlled experiments differ. Some human-subjects research is, again, hard to control in terms of reducing controls and experimental factors to basic particles. There are also moral constraints on what can be done to a human research-subject.

Furthermore, human-science subjects have a peculiar trait: Subjects' concepts concerning themselves play into what they are, even if some such concepts are false. Investigators can study these reflexive concepts, and

individuals have varying capacities to articulate these concepts, if called upon.[1] Volcanos, amoebae, and neutrons are assuredly incapable of communicating such concepts. However, the human sciences, in their struggle for objectivity, often commonly have allowed only limited role for subjects' concepts about themselves. As Winch (1990) criticizes Pareto (1935) for sustaining this approach,

> *Pareto urges we must accept that the ideas and theories which people embrace have little influence on the ways they otherwise behave; embracing the theories cannot be a valid explanation for why people behave in the given way, for that behavior goes on even after the theories have been abandoned.* (p. 104)

Like Winch, this article contends that a significant amount of peoples' ideas and theories do influence their behavior –and most significantly, those ideas about themselves or reflexive concepts.

Certainly, methods of interview and questionnaire are used in human sciences from cultural anthropology to economics. But such methods rarely rely upon questions about who the subjects think they are for the purpose of categorizing them for assigning each to a study group. In fact, the very study-group categories are commonly pre-assigned, before the study and its design. Gender, race, ethnicity, occupation, caste, sanity, cognitive capacity, and so on are all super-groups whose categories often reflect those the society itself has established.

Such categorizing seems condonable because human sciences often study societies, and societies often employ rigid classification schemes for their members. The question arises as to whether adopting these groupings wholesale as a means of objectifying the study is for the best interests of both the subjects (and their society) and the study. There appears to be little room for considering what subjects believe they are, what their idea of their identity, even though what a human is qua human is partly a matter what you think you are. Such subjectivity seemingly has no place in objectivity.

The philosophy of human sciences has had extended, heated discussions over whether groupings of subjects reflect natural kinds vs. the contention that group classifications are social constructs. The former side may help ensure that groupings used are differentiated among one another essentially by the laws of nature and evolution. The latter side doubts such universality and can fuel

[1] While "concepts" and "ideas" differ in reference or extension, here I assume ideas are the broader in reference and thereby encompass the narrow "concepts." I believe that both apply to this article's contention about human subjects of study. They have concepts about themselves and thus they have ideas about themselves but possibly not vice-versa. In the text I may sometime use either term but speak more often of concepts about themselves.

skepticism as to whether the groupings are set and open to social-political manipulation. The historical importance of this debate underlies this article's background and focus. The differences in these views can be so severe as to be unbridgeable. However, in the course of this article, it will become apparent that these views need not be incompatible.

A central concern here is about an epistemic predicament. On the one hand, although researchers seek knowledge and understanding about human groups, as social distinctions and traditions seem only to muddy and obscure understanding of subjects. Racism or racial prejudice is a typical example of agents' obscuring facts about other groups' individuals, often seeing the groups but not the individuals. On the other hand, researchers concretize these group distinctions and traits in the act of selecting groups, say by race or gender distinctions which are the very traditions and distinctions that obscure potential objective knowledge. For example, a common belief, such as the notion that women are harmed by abstract male education, now becomes, gratis the research itself, a more firmly socially entrenched notion. The predicament is that by adopting and continuing the gender categorization itself and partitioning the population, the research endorses the partitioning, which contradicts the very normative axiology impelling much social-science research programs, focusing on social problems to create tools for solving them.

I cover this epistemic predicament more in sections to come. Even my brief mention of what is to follow may trigger some readers to object to any such predicament. It is seemingly impossible *not* to adopt these characterizations to improve our understanding the subjects and who they represent in the study, such as those who have faced discrimination. However, one point of this article is to challenge such assumptions about studying and ameliorating social categorization and prejudice.

Before going further into the epistemic predicament and attempts to resolve it and aid social understanding, I provide some relevant background on recent discussions of natural kinds as well as introspection's role in human sciences.

2. The Epistemic Predicaments' Context in Two Ongoing Debates About Human Sciences' Methodological Assumptions

2.1 Natural Kinds and Social Construction

The notion of natural-kinds categorization of subjects of study has provided powerful explanation of what are the actual subjects of study in the sciences (Dupré, 1993). Nature simply appears to be cleanly cut into parts ("bits and pieces that can be isolated" for study Kitcher, 1999, p. 196). The hundred+ boson and

fermion types are the most evident and basic examples of nature's presumed precise taxonomy. Elegant equations explain and support these particles' existence and taxonomies into families. Similarly do the elements of the periodic table clearly and cleanly divide the types of matter into neat families. The taxonomies of biological species exhibit – at least in a synchronic time-slice – ready classification in to genus, family order, and so on.

Here, though, the rumbling of discord concerning natural kinds threatens. Some living species do abide by the usual definition of species as those individuals who can have viable reproducing offspring. The neuter mule, offspring of horse and ass, indicates these two as separate species, But the two species red wolf and coyote can have viable reproducing offspring. Life makes categories messy.

But at the molecular stratum, genes are not readily distinguished one from the other, either (Hull, 1978; Dupré, 1993; Waters, 1994; Kitcher, 1999). Kitcher (1999) proposes two basic ways of considering and distinguishing genes: at the molecular level, in terms of stretches of DNA, or as Mendelian units of inheritance. Kitcher asserts "some important biological regularities cannot be captured in the language of molecular biology" (1999, p. 200). The molecular level has its functions of transcription, translation, and so on. But these, including the enormous lengths of DNA that can be isolated as shown as not being involved in these functions, do not map cleanly to the unit of Mendelian inheritance. One stretch of DNA from which a hereditary unit appears to arise upon translation – a polypeptide chain – often does not correspond to a "gene." The DNA unit used to make a protein has long stretches at either end used only to help orient the RNA translation process and it is not clear whether these stretches are part of the gene.

Furthermore, a protein is composed of several folded polypeptide chains, each of these units corresponding to a separate DNA stretch, to make a "quaternary" structure of the protein. It is not clear which is the "gene," the individual DNA stretch for each polypeptide, or the combined DNA stretches corresponding to the combination of the individual polypeptides. In any case, the "gene," as a classificatory unit, does not correspond to any precise material entity; it does not appear to exist as a material object. Instead the term "gene" is a convenient way to speak about certain biological behaviors, as in the inheritance of traits. It seems not to be a clean natural kind.

The apparent natural kinds at the molecular level do not functionally correspond to units of inheritance, obscuring the presumably clean partitioning of the material object of study.

Even the modes by which evolutionary inheritance unfolds – genes, individual, group, or species – are not cleanly partitioned. (See Sternelny &

Kitcher, 1988, p. 339 for further discussion, and Sober & Lewontin, 1982 for more on how the monistic solely genic approach falls short in explanatory adequacy.)

Matters get messier than material life itself, with human and social classifications (Hacking, 1990, 1991, 2007; Devitt, 2008, 2010; Haslanger, 2012; Mallon, 2016; Greenwood, 2020; Tsou, 2020). Our species appears to be composed of groups of individuals with defined physical traits, such as skin color or eye shape. These so blend from one alleged group to the next, especially given to steady inter-population mixing, that "race" is not scientifically applicable to these groups. Instead, what seems to be "race" is minor variations. Race, then, comes to be understood as a social classification, and not a natural kind. (See Hacking, 2007 and Mallon, 2012 for general discussions of social construction and natural kinds in humans. For persistence of groups over time, see Greenwood, 2020.)

However, other investigations into the human being, such as medicine, psychiatry, clinical psychology, and other areas of psychology and anthropology, more plausibly categorize among natural kinds (Boorse, 1977; Nisbet et al., 2001; Kendler, 2011; Tsou, 2013; but see Sontag, 1978; Haslanger, 2012; Hacking, 2007). Certainly, pathophysiology breaks down human diseases into kinds, often according to microbial etiology, autoimmune responses, and so on. Even these have been disputed as being more socially constructed than natural kinds (Sontag, 1978; Senior & Viveash, 1997; Hopwood, 1997). The touchiest areas of human sciences may be psychiatry and clinical psychology because these bring in normative issues of autonomy, fault, blame, responsibility, free will, and guilt. Malfunctioning behaviors are often stereotyped. A patient *P* with an often-fatal eating disorder *M* may exhibit certain stereotyped behavior. say excessive desire to please others, seen in most *M* patients. To chalk up the behavior as merely due to *M* denigrates the patients' seemingly free choice to please, as though they are unfeeling automata and lacking autonomy and carry out apparently positive behaviors only thanks to a malady's program. It is as if they are stripped of their capacity to do wrong or right. Contrast a systemic disease *S*, in which almost all patients wake in the middle of the night with highly elevated temperature. The symptom does not signify the patient has lost autonomy of behavior, reduced to a mere automaton.

In the case of mental disorders, attributing the behavioral symptom to a subset of the natural kind *M* poses a threat. If *M* is a natural kind and *P* has no control over it, *P*'s autonomy is threatened. However, if *M* can be attributed to a social construct, then considering one is a member of the society and thus has some corner of input into the society's constructions, there may be some prospect

for empowering *P* and gaining some control over the condition. As Boghossian (2006) observes, building on Hacking's social constructionism appeals because of its potential liberating outlook: If setbacks and menacing challenges arise due merely to social conventions, in contrast to the rigidity of natural kinds, then it seems possible to change them into how we would rather have them be.

This article does not intend to resolve this conflict of natural kinds. Rather, I have brought it up to position the article's suggestion for subject-grouping in human-science research as arising somewhere between natural kinds and social constructs. Given its position, it might well offer useful new perspectives for both sides of this debate.

2.2. Introspection vs. Objectivity, and Variants Thereof

I am not who you think I am; I am not who I think I am; I am who I think you think I am. – Charles Cooley

The self-reference concept and subjective states implied by the discussion make place for potential criticism. (For a variety of views, see Shoemaker, 1968; Gopnik, 1993; Fynder, 1995.) Skeptical readers may maintain that subjects' presumed "inner" life or alleged subjectivity has scant role in human sciences, such as psychology. Alongside with the proliferation of focus groups, questionnaires, polls, and interviews, the human sciences often rely on subjectivity, introspection, and subjects' "inner" life for data. But these methods primarily gain opinions rather than agents' reflexive concepts. To assume that humans have opinions, a researcher need not take a stance on behaviorism vs. mentalism, or introspection vs. objectivity, or similar dyads. Even moving beyond opinions, into attitudes, mental health, and even personality traits, one need not abandon one's behaviorism or mentalism. The main issue here is the specific outlook on the notion of introspection by which a subject can presumably attain accurate knowledge of oneself by introspecting. The concern is that we can make mistakes about our individual nature, attitudes, personality, even beliefs (Tsou, 2020). Our presumed knowledge gained by such introspection is then far from accurate. Since knowledge must be accurate to qualify as knowledge, then whatever this introspection gathers is not knowledge. Opinions about oneself do not count as valid.

In sections to come on the epistemic predicament, there is no need to resolve the objectivist/self-negating view or the subjectivist/introspective. Yet the position therein does give credence to how subjects identify themselves socially can usually be taken as serious and accurate data when apportioning them to social groups for the sake of study (Haslanger, 2006). As such methods as interviews and

questionnaires can be used without assuming a subject has an "inner life." So may similarly acquired data about the subject's social identity. Even a woman born with XX chromosomes who has been hetero-non-normatively married decades and had children and has risen to the heights of corporate ranks but seriously answers that she identifies as a male must be taken seriously. If a scholar and lawyer running for president were born to a black father and white mother but seriously identifies with the white mother's race despite what the hundred-million voters see otherwise, there is good reason to count her as black. To deny such data's validity is paramount to denying a central feature of human beings – that they have concepts about themselves, and these can be determined by objectify methods such as questioning. To deny as much could only demerit the study's validity.

3. The Epistemic Predicament: The Frozen Specimen vs. the Always Changing Subject

Generally, we inquire into the nature of society and the human condition not merely out of scientific curiosity but because we want to improve them. Humans also clamor with a need to answer such burning questions as "How and why did we arrive here in the universe?" These may evoke some motivation even for much of biology and cosmology as well. The fact that geneses of the human sciences are intertwined with the drive to improve the human state is apparent by the eighteenth century, when "psychology, sociology, and economics were known as… «moral sciences»" (Root, 1993, p. 10). Hacking has described how the rise of social statistics in the nineteenth was linked with state programs to improve its administration (Hacking, 1990). Many subdisciplines of psychology, particularly as fashioned by Freud and the clinical schools, have been driven by the need to treat mental and emotional ailments.

Root has noted that Weber, Mill, Sigdwick, and Keynes argued against the promotion of values in the human sciences. As Root (1993) quotes Keynes: "It is not… the function of science to pass ethical judgments; and political economy regarded as a positive science may, therefore, be said to be independent of ethics." (p. 33) Yet, Weber concedes that

> *When it comes to discovery… personal, cultural, moral, or political values cannot be eliminated from the social sciences; what social scientists choose to investigate or discover, they choose on the basis of the values they expect their investigation to advance.* (Root, 1993, p. 33)

While human science researchers, like their natural-science peers, develop methods to help minimize personal bias and increase "objectivity," what they choose to research continues to reflect a socially ameliorative teleology. To this

extent, Root cogently describes how the human-scientist's values influence the "choice of what data to collect and how to collect them and the influence of the gathering of the data on the values of the surrounding community" (1993, p. 124). Root also argues how theorizing in developmental psychology, functional sociology, and positive economics, for example, relies on "judgments of value beyond the judgments that appear in the ordinary course of discovery or justification in science" (1993, p. 53).

Almost any study in a human-science journal reveals subject-foci (Root, 1993: 33) that have socially ameliorative potential. A social-psychology study may reveal the relation between subjects' viewing violent crime in the arts and the perpetration of violent crimes by viewers. An economics study may find that consumer choices are not made rationally but according to various irrational value perceptions. Much work in developmental psychology and gender studies can help substantiate reasons and arguments for why women and men should have full equality not only under the law but in all aspects of society. Root goes on to argue that, given such tendencies in human sciences, they could be made "open and deliberate in their ties to partisanship… openly perfectionist and… communitarian" (1993, p. 250).

However, there is a flip side to this ameliorative teleological tendency in the human sciences: What if those, the subjects of the study, who represent a subpopulation whose lot the researcher aims to improve, do not conceive themselves to be in the set the researcher believes them to be, do not feel in need of improvement, or do not want the kind of improvement the study would imply? As for the categories of subjects created by the researcher, Root also notes that this sorting of data "by race rather than sex, sex rather than class, or class rather than education… is not value-neutral" (1993, p. 149). Researchers cannot help but impose their classification scheme upon the population. Thus, their presumed target subjects may not be their target subjects. They may be doing not only inadequate science but faulty (or even unethical) social work.

In social psychology and gender studies, Gilligan's (1982) pioneering work asserted that women showed different patterns of moral development from those of men. Women's moral development was oriented more around notions of care and responsibility, whereas men tended to be geared toward a rights morality based on blind justice, abstract principles, and impartiality. Work by Mary Belenky et al (1986) has taken a parallel approach in the study of women's intellectual development. They found that women tend toward a subjectively, emotionally, and intuitively based way of knowing and thinking, with an emphasis on connections to personal experience and other people. In fact, these authors adopt the metaphor

of the ear and silence as women's way of knowing, contrasted to a more masculine way of knowing through vision and "the mind's eye": The ear is considered to be more intimate, empathic and connected with others and less distancing, abstract, and separate than the eye. The authors conclude with programmatic suggestions for restructuring teaching – "connected teaching" – so that it better accommodates women's way of knowing. Other studies in social and educational psychology have found other educational factors that point to changes that can be made to improve women's education, such as the finding that scores of women students are higher when no men are in the room.

Such studies, though, as with much of those in human sciences, face the quandary of whether they are doing epistemic justice[2] to their target group (not to speak of ethical justice in their programmatic suggestions). Some researchers in women's education, such as Gilligan or Belenky, appear to be interested in inequalities in education that is modeled on education traditionally geared toward men. Such a model ramifies into broader social inequalities because the women concerned are not in a position to compete fairly with men. A predicament emerges from the fact that researchers must make the same classifications of their subjects which the presumed social tradition has made and which has led to the inequality. The researchers are making a concrete selection of subjects from a population, whereas the tradition itself, not being a conscious force, has made no such concrete selection. Individuals are variably affected by social and cultural traditions, some to a great extent, others little at all. The predicament is epistemic because the researchers must concretize or "freeze" their subjects in a moment of time and as a product of tradition. Yet, their subjects actually are changing through time and highly differentially affected by traditions: There is a knowledge gap between a the apparently clean-edged category – i.e., "woman" – and a jagged reality of the category of each subject.

3.1. How the Predicament Arises

An epistemic predicament, then, arises because we want to know facts about a group of people which seem to be obscured by socially given distinctions, such as gender behavioral traditions. But those traditional distinctions have often been vague. Some women, for example, are far more affected by gender traditions than other women (maybe still other women affected little at all by certain behavioral traditions. However, the researcher concretizes the traditions when selecting groups by gender for the sake of studying a social trait within a group. By thus

[2] By "justice" here I mean not justice in the ethical sense but in the sense of being most accurate in the gaining of knowledge.

"concretizing," the researcher essentially declares that all individuals in that group are susceptible to that distinction, solidifying a distinction that heretofore was nebulous, existing vaguely or by hearsay, in the culture. In an important way, the researcher sacrifices the individual's individuality, often, ironically, for the ultimate aim, given ethical or ideological motivation, of furthering individuals' ends qua individuals and group members.

The predicament is epistemic because it concerns ways of knowing or methods of gaining knowledge. A tradition, that was once indistinct, such as the notion (variously circulated among members of society) that women are harmed by abstract male education, is now solidified into a distinct method of partitioning a population: "You are a woman (or you are a man), therefore you were subject to *X* or *Y* assumptions about your intellectual development." A social-science goal would be to see through this cloudy tradition to the clear facts of individual personality or beyond. The concrete block of new knowledge, formed from and despite that cloud of tradition, is superimposed upon the search for clarity. Does it actually block knowledge that lies behind it?

The predicament can be put another way: We seek a certain kind of knowledge about what we human beings are so we can find out what we *can* be. All that we can fall back upon to assess ourselves, however, is the thing we have been, which does not include what we *can* be. We feel that at heart we are, say, egalitarian; we want to implement this "egalitarian core" of ourselves. But to characterize what we are, all we have available to rely upon is our present non-egalitarian condition. How can we bridge this gap? Which is the "real" us – the egalitarian core we believe we are or the old non-egalitarian persons we have always proven to be? The predicament is epistemic.

3.2. Practical Questions Deriving from the Predicament

In practical terms, there is a problem for such social psychology studies, along with comparable human-science studies that divide the population into women and men or other group distinctions with an eye on the inequality between these groups,[3] is that the supposed subject population may not so clearly be the subject population. First, are all the women in the subject population primarily women vis-à-vis the subject focus? In the study of Belenky et al., the subject focus is intellectual development. By "primarily" women, I mean that, for every subject, is the subject's "womanness" the aspect of that person that forms the prime factor

[3] Also, all human-science studies that classify their populations, or "sort their data" in Root's terminology, as by ethnic group or race or occupation, share a similar predicament. Later, I discuss such cases in a specific example, which can be generalized to the others.

in that person's intellectual development? This question would be difficult to answer in field-studies. However, the study's design, which divides the general population into women and men for the sake of assessing intellectual development, presumes that gender is a factor in intellectual development.

Let's consider a study that divides the population into *A*, music lovers, and *B*, non-music lovers. It then presumes that for the *A* subjects, music-loving is the primary factor that differentiates their intellectual development from that of non-music lovers *B*. The case is harder to see for men and women because we so broadly tend to assume that people are raised according to the gender corresponding to their apparent sex. But gender is as much as a trait of a subject's "choice" as music-loving. Dividing the general population by the gender criterion vis-à-vis intellectual development is to grant that, just as tradition leads us to believe, intellectual development indeed is dichotic along gender lines. Gender is made the primary factor that distinguishes the intellectual development of one group distinct from another. For the purposes of the study, the gender of the individuals of that group becomes in essence the primary factor in that individual's intellectual development. Whether or not this assumption holds true for each individual is, of course, not easy to answer. But answering it is incumbent upon the researcher if they seek epistemic justice.

Second, are all individuals in the group indeed of the female gender? The fact of there being more than two genders has only recently arisen (Hamzelou, 2011); earlier studies cannot be expected to speak to it. Nonetheless, all studies that henceforth classify subjects by gender need take this fact into account in gathering and sorting data. (I return to this question later.) How many subjects were androgynous or of any of a number of kinds of queer or transsexual or transvestite? To ignore these gender types would be to ignore the reality of gender, even if that gender is assigned by the individual subjects themselves. The researcher may contend that societies generally assign one of two genders – for example, in terms of education – and so the study faithfully reflects this division. However, in making parallel assignments in the study, the researcher brings in the bias of the gender division itself and so perpetuates the tradition. How can results of this study be of use to persons of different genders?

The third practical concern for the researcher is the subject-focus itself: In the case of Belenky et al. (1986), the focus is intellectual development by gender. Presumably, men and women have traditionally been reared so that certain types of education are conducive to nurturing masculine minds and other kinds of education are conducive to nurturing feminine ones. Yet, this very division has been a formative element in the inequality between these two genders, with the

feminine allegedly of "inferior" status (Wollstonecraft, 1792). How could giving an education that best nurtures this feminine mind, which in turn was integral to this inequality, possibly halt this inequality instead of perpetuate it all the more efficiently? This practical concern addresses the theorizing more than data gathering and sorting, which the other two practical concerns considered. However, it could bear on study design insofar as potential theorizing from anticipated results could influence the way researchers plan studies, establish the subject focus, and formulate the subject population.

3.3. Facing and Solving the Predicament

Predicaments are not always insoluble but may point to where solutions lie. This one appears to arise from a basic gap in human cognition: the gap between what individuals are or believe they are at a given moment and what they aspire to be. Which is the real "them"? It is a problem for human sciences as well, but examining it points to a particular way of understanding in the human sciences as distinct from the natural sciences. This understanding, if it doesn't dehorn the predicament, at least points to ways human-science researchers may deal with some of the epistemic predicaments discussed already.

4. Reflexive Concepts

Of the enigmatic burdens that the human sciences may face, one derives from the nature of the concepts thriving in their human subjects themselves (Fodor, 1994). Humans operate both with concepts of what they believe themselves to be and of what they believe they should or can become (Gopnik, 1993; Funder, 1995). Both kinds of concepts are relevant to human sciences not only in that they are parts of the subjects who are studied but also because these concepts may affect the practice of the science itself – what it should study, how the results are interpreted, and what are done with them in society. Yet, these two kinds of concepts can often be at odds with one another and thus may create difficulties for the human sciences.

Many people in democratic societies, for example, aspire to a belief in egalitarianism, holding that all persons, whatever their social division, whether by ethnic group, cosmological belief, gender, class, or age, have certain rights of life and happiness and liberties. However, when it comes to raising their own children, these same people commonly may not inculcate their children with all the possibilities that will allow the freedom of choice in life which an egalitarian society requires. Significantly, they commonly mold the child's gender into one they feel matches the child's supposed biological sex. A "nimby" attitude

pervades: "Yes, every woman out there should have equal access to jobs, salary, freedom, and happiness. But my boy is going to be a *man* and not pushed around by other boys. And my girl may have a career, but she is going to be a woman and be attractive." While such parents may aspire to egalitarian ideals on the one hand, on the other, they recoil from what lies ahead and resort to the comfort of what human beings have been for centuries: non-egalitarian creatures. After all, as such parents may assure themselves, men are men and women are women.

If both kinds of concepts, fairly inconsistent, are central to the human sciences, should practitioners consider which of these conceptions of ourselves best represent ourselves – what we aspire to be or what we feel we are? In one light, the question may not seem pressing to some human sciences. Each of them apparently deals with this enigmatic quality in their subjects, in different ways, generally by looking at the totality of individuals' behaviors and not to such existential inconsistencies within individuals. Human sciences may be said not to be in the business of determining which of these parts of individuals is somehow more "real" or more representative of their subjects. Economics is concerned primarily with its subjects' consuming and producing behavior. Cultural anthropology may take into account such concepts about oneself (or the collective's concepts about the collective) by way of characterizing belief systems, myths, taboos, and religions. However, anthropological studies do not tend to declare that the aspirations of a culture are more (or less) indicative of that culture than the structures currently seen in that culture.

Psychological studies are often focused on behavioral outcomes rather than subjects' alleged beliefs. Some subdisciplines of psychology may acknowledge that beliefs comprise an individual's mental makeup and so may account for how these beliefs affect behavior. For example, social psychologists may study parents for the way they apportion toys to their children by the "gender" of the toy. They may even account for whether the parent has egalitarian beliefs and note whether these beliefs are reflected in behavior. However, they do not intend to assess whether these beliefs represent what the subjects "really" are. Individuals, though, may feel that where they are headed is what they really are, somewhat as a chrysalis, if it could think, might consider itself a butterfly. A person becoming a musician may feel she really is a concert pianist. An egalitarian may feel he really is spreading equal rights in the world even while he pushes his son, but not his daughter, to stand up for himself and fight other children. Are these two cases of the same type? Is the egalitarian really no more than a dreamer like the beginning pianist? It seems that the human scientist should have no problem here, since people often fool themselves about what they are (Gopnik, 1993; Funder, 1995),

and the human scientist must look at the behaviors, however hypocritical those behaviors may be (although hypocrisy itself may be a topic of research).

The problem, though, is that what people feel they are or can become may affect what they are as subjects of study. (Furthermore, the subjects of study, individually and as a whole, are de facto arbiters – the voting public, one might say – of the human sciences, so what they feel they are or can be may exert influence on the practice of the human sciences themselves.[4]) How does what people feel they are or can be then affect the human sciences?

In addressing this question, any concepts about what one is I call "reflexive concepts," those concepts about what one currently is are "concurrent reflexive concepts," and those about what one should or can be, "projective reflexive concepts." These may relate to a specific area, such as one's gender, which would be "gender reflexive concepts."

5. Human Concepts in the Human Sciences

In this section, I contend that most human sciences depend to some degree upon humans' conceptions of themselves. In other words, many or most human sciences would have no subject if humans had no conceptions of themselves. (Natural sciences, by contrast, do not focus on quasars', gold's, or bacteria's conceptions of themselves for the trivial reason that these objects likely have no conceptions of themselves.5) Some disciplines of the natural sciences do study humans, as in anatomy or physiology, but when the subject focus is exclusively on human reflexive concepts (or, as I will argue later, human concepts generally), we peculiarly call the study one of human sciences. Whether or not the human-science in practice acknowledges it is studying human concepts is another issue. Even disciplines such as economics which are often characterized as the most "objective" have a subject focus that subsumes human reflexive concepts at least in part. There may be hybrid studies, as in medicine, that incorporate human reflexive concepts into their subject-focus, such as a study of testosterone levels in gay men. So, natural sciences may optionally subsume human reflexive concepts in their subject-foci; but for most disciplines, what we call human sciences must to some degree subsume reflexive concepts, as shall be contended below.

---

[4] This problem is a reverse of Hacking's "looping effect," by which the results of human sciences influence what people consider themselves to be and thus, often, what they are.

[5] Higher apes, such as chimpanzees, bonobos, gorillas, and orangutans may have some degree of conceptions of themselves, and so sciences studying the behaviors of these subjects may need to consider these animals' conceptions of themselves if possible.

A full argument for this position is beyond the scope of this paper, as it would entail an extensive analysis of what is meant by human concepts and reflexive concepts, what are the subject-foci of the different disciplines of human sciences, how reflexive concepts of "what I am" differ from "what we are," and what does it mean to say that reflexive concepts must be integral to the subject-foci – in theories, data gathering and sorting, and explanations. I will, though, indicate the basic elements of the argument.

It hinges upon more than the trivial fact that humans have conceptions of themselves and any science studying human actions cannot help but somehow study these conceptions as part of their subjects. Instead, my case is that what we call human sciences – as opposed to the biological or biomedical sciences – are in fact those for whom human conceptions of themselves are the sine qua non.

The argument is not simply one of "mentalism" versus "behaviorism," even though I often use extreme behaviorism as a "devil's advocate," or a benchmark for whether my argument can hold across the spectrum of theories about human-scientific theory. Furthermore, by stating that the researcher increases the accuracy of a study by designing it in a way that more fully incorporates the subjects' reflexive concepts, I am not taking any side on the mind-body debates; a brain in a monistic world can easily have concepts. Even if the brain is somehow "fooling" itself that it has concepts, as extreme behaviorism may imply, such fooling is so overwhelming in our lives, and human language is so imbued with the notion that we have concepts, that trying to circumvent the use of concepts altogether leads researchers into tying themselves into knots, as I describe.

5.1. The Two Scientists

Instead of diving directly a full argument, I begin with an illustration indicating the gist of the argument. Take two scientists *A* and *B*. *A* is studying mice; *B* studies humans. *A* weighs and calipers her subjects and does skin cultures, blood counts, fecal examinations, and brain MRIs. So far, she is doing biomedical science. She then puts the mice through maze tests, runs operant conditioning tests with food rewards, observes copulation patterns and describes all the different murine squeaks with a "translation" to English of what these communication signals mean. These are only some of her behavioral tests. She can run such tests ad infinitum and generate an indefinitely large set of data, and her science will, as far as sciences are commonly considered to do, grow more complete and explanatory.

B proceeds similarly with his two humans, *X* and *Y*. He runs the biomedical tests. He runs the behavioral tests. But with the behavioral tests, he has different problems than *A* does.

5.1.1. Economics

B undertakes studies of *X*'s and *Y*'s economic behavior (behaviors not seen in *A*'s subjects). Sometimes *X* acts as a seller, sometimes as buyer; similarly for *Y*. *B* posits certain laws of economic behavior and ends up with something like the classical law of supply and demand. This law stipulates that price increases with consumer demand. *B* then finds that in explaining human economic behavior, he must invoke human concepts in at least two ways: 1) conceptions of the marketplace and the operations within the marketplace, such as demanding, as well as buying, pricing, and selling; 2) conceptions of who they are within that marketplace, such as buyer or seller. I contend that *B* cannot completely describe the system without invoking these concepts. The first are required because of *B*'s reliance up his subjects' own notions of demand. When *X* is the seller and *Y* the buyer, *X* raises prices when she detects *Y* has increased demand for the product. That is, the rise in price depends upon *X*'s conception of demand. Yet, *B* must also incorporate yet a higher-order conception, that is a reflexive concept: *X* raises the price because she understands herself as a seller, that is, an actor who must implement certain strategies in order to maintain that role. *Y* may have no concept of himself as buyer but only feel a desire for the product as *A*'s mouse does for the food; *Y* is only the "supplier" of the demand. Yet, *X* must be aware of herself as seller in order to adjust prices.

Let's say *B* alternatively attempts to follow scientist *A*'s approach and describe the mechanical actions of *X*'s and *Y*'s moving certain products back and forth over the counter. He may invent a term "seller" and "buyer" and describe the altering rates of product movements in relation to supply and *Y*'s advancing or retracting behavior. He may chart the movement of prices. But he may start running into problems. Sometimes *Y* comes in and asks repeatedly for the product but does not buy, and still *X* raises the price. *X* has raised the price without an overt movement of product. *B* can account for the change in price only because *X* has sensed an increase in demand from *Y*. In explanations, *B* must invoke *X*'s understanding of herself as seller responding to demand. *B* may attempt some kind of "verbal behavior" fix that accounts for *X*'s price change. However, notice that any verbal-behavior account that attempts to circumvent *X*'s understanding of herself as seller may easily get involved in a vast cataloguing of verbal exchanges,

all of which could more elegantly be summarized by the fact "*X* considers herself as seller."

However, if *B* wants to take on the possibility of infinitely accumulating verbal behavior data instead of summarizing it all with a reflexive concept-acknowledging theory, he still has to account for *X*'s and *Y*'s possible role reversal. *Y* may sometimes come into *X*'s store himself buying as a seller. He may want to fool her into increasing her prices so that he may lower prices in his own shop and undersell her. *B* could either postulate that *Y* is considering himself a seller acting as a buyer, or *B* could tie his data and his theories into exponentially complicating knots with renditions of verbal behaviors. In sum, it is simpler, more elegant, and thus more conducive to robust explanation to invoke both his subjects' conceptions of marketplace and their conceptions of themselves within that marketplace.

5.1.2. Anthropology

Next, *B* sets out to study his subjects' familial practices, religion, and other cultural practices, the usual domains of anthropology. He likely runs across *X*'s and *Y*'s concepts of themselves as "The People." In religion, he discovers their concepts of themselves as certain kinds of creatures. In familial relations, he encounters *X*'s and *Y*'s conceptions of themselves as woman and man, mother and father, brother and sister. As with economic behavior, he may try scientist *A*'s approach and catalogue all the verbal behaviors and relate them to other behaviors, avoiding the assumption about his subjects' reflexive concepts. But, in turn, he will find that positing these concepts will make his explanations simpler.

In fact, to circumvent all diction concerning reflexive concepts in these areas of study would necessarily be to overlook many of the concerns of culture and religion. Culture *involves* assigning social roles, such as brother, wife, and daughter, which require types of reflexive concepts, and religion *involves* both delineating what the person is as a human (concurrent reflexive concepts) and what the person or society should be (projective reflexive concepts). These and other concepts are the very subject of such studies. Even if *B* takes the most "behavioristic" approach, he will inevitably find himself positing reflexive concepts. He may try to say "*Y* functions as so-and-so's male sibling" instead of saying "*Y* considers himself someone's brother." But when he finds that *Y* and all males in the society call each "brother," he may try to explain how all male members treat each other as male siblings. But such an explanation fails because it will not hold true that they do so treat each other. He may say that the society maintains social cohesion and this is reflected in the way the males call each other by the term for "male sibling" even though the behavior exhibited to non-siblings

is not the same as that to siblings. Somehow, the men are extracting a kind of commonality of inter-sibling behavior and applying it to non-siblings.

However, already his phraseology, while he tries to sustain behavioristic ideals, is hedging around the notion of reflexive concepts. If the men can select from among their repertoire of inter-sibling behaviors and apply some of those to non-siblings, then they have some kind of mechanism – whether or not one wants to invoke a mentalistic term "concept" – of selecting SB_i from among "sibling behaviors" *SB* and generalizing them to non-siblings. That is, in whatever form "knowledge" consists, they have a way to "know" that certain types of behavior directed at one subclass of people is to be applied to a larger class as if that larger class were the same as that smaller class. The analogy of

$SB : SB_i : :$ *smaller class : larger class*

is doing the same work as "*Y* conceives non-siblings males as much like his brothers and treats them accordingly," which avoids the circumlocutory behaviorist verbiage.

In other words, an extreme behavioristic approach, in the way it hedges around reflexive concepts, acknowledges those concepts, but it would function more elegantly by overtly acknowledging them and then phrasing its observations in whatever terminology it sees fit. However, much anthropology proceeds by working with these concepts anyway. A researcher who tries to explain how a religion tells its followers who they are as creatures and what they should be, or the way that cultural notions tell society members who The People are, but never acknowledges the existence of these reflexive concepts, would be inconsistent.

5.1.3. Psychology

For studies of psychology or social psychology, *B* will also encounter reflexive concepts. Let's say he is studying how *X* and *Y* raise their baby *Z*. *B*'s biological studies have posited Z as a female. And yet Z is being dressed in clothes more resembling *Y*'s, taught to fight other children, play football, and other behaviors and traits that *B* had previously considered male. How does he explain *X*'s and *Y*'s behavior? He could say that *X* and *Y* have raised *Z*, a biological female, to be a male. Why did they do so? A radical behaviorist could do little more than repeat this explanation. But contemporary psychologists should have little problem with posing the question to *X* and *Y*, who reply, "We consider all babies should be reared in the way the society considers is for males only." This projective-reflexive concept provides *B* some good explanatory power: It gives him an explanation for behavior that he would not have without incorporating reflexive concepts. (He even has a new area of research: The relation between

concurrent reflexive and projective-reflexive concepts, and how one influences the other.)

Further, it turns out that everything *Z* does in life is much like what *B* thought males should do, including marrying a biological female. Again, the description that *Z* is a biological female who does everything like what a stereotypical biological male does is, indeed, no more than a description. What's the explanation? Is *Z*'s behavior due purely to the way her parents raised her, that is, to their projective reflexive concepts? Or to hormones? Hypothalamus? *Z*'s case poses a set of predicaments about causal factors in human behavior, of the sort that underlies much of psychology: Just what causes a given human behavior or type of behavior? I contend that, in explanations of behavior, reflexive concepts play a role, although a varying one, sometimes prominent, sometimes less so. I want to clarify how these concepts figure into explanations.

Let's say that *Z* considers himself male. In *Z*'s case, it is not convincing to say that *Z* performs male-stereotypical behavior (MSB) *because* of this reflexive concept. Rarely do people set out in the morning to put on boxer shorts because at that instant they think they are male and so should wear boxer shorts. In such instances, gender reflexive concepts correspond to the habits. Perhaps some habits were formed because one considered that he is of the male gender and so must habitually act in a certain way, but those reflexive concepts do not cause particular behaviors. It may be the case that one has a gender reflexive concept of a given kind *because* one has a certain habit, formed in *Z*, perhaps thanks to *X*'s and *Y*'s efforts. On other occasions, say in a confrontation with another person, *Z* may think, "I have to respond with my fist because I am male." Again, it is hard to say to what degree the concept causes the behavior as opposed to playing a part in a complex of causes, such as physiological states, habits, and social contexts. (These relations between habits, reflexive concepts and particular behaviors are in themselves appropriate subject foci for psychological studies.) However, whether or not reflexive concepts are direct causes of behaviors in particular instances, they play a role in the way that behavior types are apportioned to a given individual as opposed to other behavior types apportioned to another individual – *and thus must influence the way B himself categorizes those behaviors in data gathering and sorting*.

B can only make a limited amount of explanatory headway by describing behaviors according to whether he perceives *Z* as biologically male or female and whether *Z* is behaving according to stereotypical biological-male or – female behavior types. *B* must also take into account what *Z* considers himself to be, in terms of gender reflexive concepts. If the concept does not provide *B* a direct

explanation of particular behaviors, it provides a heuristic to guide *B* into finer-grained distinctions of behavior types than biological-sexing of his subjects can alone provide. Considering the subjects' gender reflexive concepts, in other words, leads to the distinction that psychologists and other human-scientists make between biological sex and gender.

Taking into account reflexive concepts can lead *B* into even finer grained gender distinctions than between male and female (Bornstein, 1995). Gender studies has described multiple, recognizable genders, such as androgynous, various kinds of bisexual, butch, and other kinds of queer (see http://thepbhscloset.weebly.com/ for a list). Each of these has distinct behavior patterns and may or may not combine various elements of the broader male and female stereotypical behaviors or add others outside those domains. For researcher *B* to set out in the laboratory of the world and attempt to decipher all these different genders without a guide from the reflexive concepts themselves would waste time and resources, to say the least. Consider *B*'s passing through the streets, bars, homes, offices, and bedrooms of cities with his clipboard, trying to observe thousands of people and make sense of the countless data so that he comes up with the gender categories he may have gotten more easily by asking his subjects. These very ways that people categorize and apportion their behavior types are the very categories that *B* will want to use to understand and explain their behaviors. Thus, reflexive concepts become de rigueur for *B*'s research.

If the need for these concepts holds true for the more extreme case of studying the wider range of gender types, it should hold true as well for the common case of studying the two genders once considered to comprise the gender universe, male and female. That is, the extreme case makes it obvious that *B* could well use the individual subjects' gender reflexive concepts to categorize people according to the many different genders. Yet, the same logic, concerning the way that people apportion their behavior types according to gender reflexive concepts, applies to the two presumably most populous genders. These two are so pervasive that B may feel that he can, by mere observation in the world laboratory, assign behavior types according to biological sex. But even with these two genders, the ways that people, or society, have apportioned behaviors by gender form the heuristic by which B actually sets out to observe and explain their behavior. That is, male and female gendering as a reflexive concept exists in society. (See Ridgeway & Correll, 2004 for more detail.) Although these genders roughly correspond with biological sex and so *B* may think he is setting out in his researches by examining biologically apportioned sexes, just as scientist *A* might

do with her mice, in humans *B* actually is studying conceptually apportioned genders.[6]

B will face a similar situation with regard to other categorizations of his subjects than gender. Root (2001) has described how a person's race varies in the course of life and even in different circumstances, not only by how other people describe the subject's race but how she herself describes it. Other categories by which B may want to type his subjects are more apparently conceptual, such as ethnic group, religion, and occupation. Some physical categories, such as age, height, and weight, seem to offer examples of how *B* may categorize his subjects for study purely by biological category, without reference to reflexive concepts.[7] Such studies present good case studies in just what distinguishes psychology or human science from biology. If *B* is pursuing psychological studies, he is working with more than purely physical parameters, and there will be a reflexive-conceptual component in at least one of two ways.

First, consider a study with purely physical parameters, such as "How high can people of a given weight jump?" or "What are the heights of people of a certain age?" These questions are all biomedical. Now consider a study such as "How tall are American women?" This is a possible human-science study, and it brings in the reflexive concepts of gender and culture. One may draw up indefinitely long lists of studies on human subjects, and one starts to see a pattern and can divide them by biomedical or psychology/human science:

Biomedical	*Psychology/Human Science*
• The Fetal Effects of Alcohol Consumption in Mothers	• The Occupational Effects of Alcoholism in Mothers
• Cortisone Levels in 12-Year-Old Boys[8] Correlate with Asthma Response	• Lower Test Scores in 12-Year-Old Boys Correlate with Increased Asthma

[6] In fact, as B studies other cultures than that of the United States, he may discover other sets of multiple genders than the one described for the United States; many cultures have more than two genders (See Ridgeway & Correll, 2004).

[7] However, see Baars, 2012.

[8] "Boy" can be taken as purely biological sex. However, by allowing this exception, I risk the criticism of why I allow research that I call "medical" to distinguish sex of its subjects without reference to gender while I do not allow "psychological" research to apportion behavior types according to what B perceives to be purely biological sex. I can only suggest the argument in defense of this discrimination, as it would be extensive, but it would involve the fact that the biomedical study does not investigate behaviors that the investigator is typing by apparent sex, and if she were to do so, she would, as I have indicated already, actually be referring to behavior types that are apportioned by gender-reflexive concepts. Although her perception of subject Y as "boy" or "young human of male sex" arguably arises from her own culturally shaped concepts, as does her perception of "quasar" or "quark," she can correctly refer to Y as "boy" in her biomedical study

• Carbohydrate Intake Impact on Lowered Weight of Obese Adult Females	• The Impact of Lowered Carbohydrate Intake on Self-Esteem in Obese Women
• Change in Testosterone Levels upon Viewing of High-Violence-Rated Movies in Adolescent Boys	• Incidents of School Violence Correspond Positively with Viewing of High-Violence-Rated Movies in Adolescent Boys

The list could go on. I include the last pair of studies as a "difficult case" illustrating not only how hard it can be to distinguish between biomedical studies and psychological studies but also how it is still possible to so distinguish them, according to the way the study ultimately hinges upon, or is about, reflexive concepts. In the testosterone study, the stimulus – movies rated as violent – may itself be a reflexive-conceptual object. After all, movies rated as violent require our ideas of violence, which themselves arise out of our reflexive concepts of who we are as a civilized people. Yet the subject-focus of the study is about changes in hormone levels – and we might substitute for movies any of a number of stimuli, such as marauding bears or sodium iodine infusions, and the focus in all cases is merely about a shift in a biochemical level. But in the right-hand study in the chart, the subject-focus is on incidents of school violence, and which is a reflexive concept-dependant parameter, just as B's study about *Z*'s male-like behavior is about a gender reflexive concept. Although the left-hand study would not exist without the reflexive conceptual objects "violent movies," those objects are only contingent in the study, which is essentially about a physical parameter. The right-hand study depends necessarily upon a reflexive-conceptual parameter.

There may also be hybrid studies, such as those Root (2001) describes, about biomedical/physical parameters within a socially defined group, such as rates of tuberculosis among African-Americans, in which the focus is both on a physical parameter (tuberculosis) and a reflexive-conceptual one (African-Americanism). And there may be some studies whose types are virtually impossible to decide upon, such as "Rates of Sexual Intercourse Correspond to Viewing of High-Violence-Rated Movies in Adolescent Boys," in which the parameters seem physical (or the stimulus is contingent, such as the movies) and yet intuitively the study seems to have a social character.

---

because (in most cases) she is referring to a physical fact about the subject, whereas in a study about how a boy behaves qua boy, she is asserting a gender alter-reflexive concept, or a concept about what another person is. (I acknowledge that this argument demands full fleshing out to avoid circularity, and though I can only assert that I believe it can be done, this hiatus leaves a hole in this discussion.)

There is a second way in which *B*, in pursuing psychological studies, is working with more than purely physical parameters, so there may be a reflexive-conceptual component: Even studies that focus on physical traits – whether a study purely of physical traits or one that mixes physical and reflexive conceptual – should at least consider that people are rarely purely "physical."[9] That is, what they are may be influenced or reflected by what they consider themselves to be. A 12-year-old girl may be classed with other 12-year-olds but may justifiably consider herself adult in the way she behaves, thinks, converses and looks. A 5'0'' Euro-American male may justifiably consider himself not short in the way he behaves and thinks.[10]

In sum, it appears that, in pursuing what are normally termed psychological studies, *B* must incorporate reflexive concepts into his study, in its subject-focus or data gathering and sorting, or acknowledge them in his explanations. As with his economics and anthropological studies, such concepts are a sine qua non of his research. If there were no such concepts, for the studies I examined he would then have no viable studies. Yet, in purely physical studies, he could still have legitimate studies without reflexive concepts, even if some physical studies used reflexive-conceptual parameters.

(For the case of linguistics, which poses a special challenge in determining whether it subsumes reflexive concepts in its practice, I refer the reader to the Appendix.)

5.2. The Broader Role of Concepts in the Human Sciences

So far, the illustration of scientists *A* and *B* has indicated how reflexive concepts are a sine qua non for many human sciences as distinct from the biological sciences. At least for economics, anthropology and psychology (though possibly not for linguistics), *B* must employ at some level the human concepts of who or what we as *Homo sapiens* are and what we think we should be in formulating scientific studies or explanations of the observed phenomena, whereas *A* requires no comparable concepts for her scientific explanations about murine behavior. With this foundation, I suggest further that these human sciences do not simply require reflexive concepts but that human sciences in general require human concepts in general. These concepts are in fact their general subject focus, which distinguishes them from the biological and physical sciences.[11] With this

[9] Again, this statement does not assume dualism or deny monism.

[10] In a later section, I will discuss what role these kinds of reflexive concepts should play in human sciences.

[11] It may be objected that natural sciences are actually about human concepts because "star" or "gold" are actually concepts, so astronomers and chemists have concepts as their subject foci as

suggestion, I do not mean the trivial case that if humans were not conceptual creatures we would not be wise enough to pursue human sciences; for in that case humans would also not have the physical sciences, and so there would be no demarcation between physical and human sciences. Instead, I mean that the biomedical sciences, with the exception of hybrid studies, can research the human without reference to the concepts of their subjects either in the particular focus of the study or in the explanations. Human sciences, by contrast, are those that necessarily subsume the concepts in their subjects, either in the focus or the study or in the explanation.

More broadly, the subject of the human sciences is precisely human concepts, whether reflexive or other types. Thus, concepts of what we are figures prominently in anthropology and psychology and to some degree in economics. But the entire range of the human conceptual universe is game for human sciences. Art and manufactured objects are the subjects of art history and archaeology, music the subject of musicology, winemaking the subject of enology, gender the subject of gender studies. The sciences and social sciences, as bodies of concepts, are themselves subject to scientific study. Strip away human concepts, the human can still be studied, but the result is what we call biology or biomedical sciences. The terminology distinguishing the biological and human sciences is not arbitrary and reflects this one criterion: The subject of the latter is necessarily concepts; the subject of the former optionally involves concepts.

A complete taxonomy of the different disciplines and practices of the human sciences might be made according to the classes of concepts in their subject foci, but such is not my purpose. I merely want to propose how the universe of human concepts is the since qua non of human sciences and their subjects of study and that particular disciplines depend upon reflexive concepts – both concurrent and projective – particularly social psychology.

My explanation here is then descriptive. I have been looking to the sciences according to the taxonomy applied to them – anatomy and cosmology being natural sciences, economics and social psychology being human sciences – and

---

well as the human sciences do. I counter that when astronomers study a star, they are not studying the concept of the star but the thing behind the concept. When psychologists study the effects of gender upon intellectual development, they are studying something which is a concept, "gender" – there is not "thing" behind that concept which is not a concept, as in the case of a star. The counterargument would hold that there is no "thing" behind "star," either – but at this point the debate evolves into a metaphysical issue of whether there are any real things beside concepts; I have to hold that there are real things behind the concepts of those things that we ascribe as real things, but that there are some entities, such as "gender," that are no more than concepts and have no real things behind them.

seeking a characteristic that distinguishes the two as practices. My prescriptive suggestion for the human sciences, particularly social psychology, based on this description, is to follow.

6. More Finely Positioning Reflexive Concepts in Psychology

If the universe of human concepts is is true subject matter of the human sciences, psychology takes a subset of these. Reflexive concepts are crucial elements in at least some subdisciplines. I hesitate to say that reflexive concepts are central in the subdisciplines that border on the biomedical sciences, such as some neuropsychology. The study of how certain areas of the brains of cats are activated as they view certain kinds of motion is arguably psychology yet not in the human sciences, although such work can inform the human sciences. The study of psi phenomena and other purely perceptual studies in humans presents another problem to the idea that the human sciences are about concepts. Psi-phenomena research has little to do with the subject's concept of who she is or what she can be. However, it is concerned with the concepts of how we perceive certain kinds of objects and motion. We may perceive two perfectly still objects as moving across a continuous space if they are presented in rapid succession. The question then is whether this study of perception actually involves concepts in the way I have been contending. The subjects may conceive that they are perceiving motion, but subject focus of the study is not their conception but perception. I might then respond that percepts are building blocks of concepts, but then I run into a slippery slope: Is the study of the building blocks of percepts also psychology? The slope then slides on down the line to cells, atoms, and quarks. Thus, purely perceptual psychology presents one problem case for whether concepts are the subject matter behind all human sciences. At best, it represents what happens at the periphery of the human sciences, before they shade into biomedical sciences: They become less about concepts than about the ingredients of concepts.

Social psychology, though, clearly depends upon concepts and probably on reflexive concepts. The "social" element itself implies that there are concepts involved as to who a person or what a society is and, often, what they should or can be. Studies in social psychology classify individuals into groups – Asian, lawyer, adolescent, housewife, Baptist, Albanian, identical twin, liberal, or avid comic-book reader. These classifications ultimately depend on how the individual conceives himself. Often the classification also is influenced by what other people think the person is, via a type of concept related to reflexive concepts, alter-reflexive concepts. In society itself, these alter-reflexive concepts often play a

highly influential role in not only shaping the person's own reflexive concepts but also delimiting that person's life choices. For example, in the many states in Southern United States up until the 1960's, being one-sixteenth African-American could classify you as black, however you may have been raised, and influence how easy it might be for you to vote or get a job or where you sit on a bus. As described already for studies assuming gender classifications, the difficulty for social psychology is that too often the researchers also assume these alter-reflexive concepts for their subjects and gathers and sorts her data accordingly.

What is more accurate for a social psychological study: to rely on reflexive or alter-reflexive concepts for classifying subjects? It depends on the study. If the study is *about* the way society or its classification systems classifies people, then it accurately assumes alter-reflexive concepts in its data gathering and sorting. For example, a study into depression caused by racial discrimination may resort to classifying its subjects by alter-reflexive concepts, since it is these concepts by which its subjects experience discrimination. However, a study into how persons of different genders develop morally is not *about* the alter-reflexive gender concepts. Indeed, the study may need to acknowledge those gender concepts in its report, since those concepts are relevant to the subjects' moral development. The study instead is about how individuals develop morally, and those individuals come in different genders. Those genders may be affected by alter-reflexive concepts, but those genders are ultimately decided by the subjects themselves. The researchers, as in the case of Belenky et al. (1986), may assert that they have made such an allowance, since on their questionnaire they included questions about what the subject feels that being a women means to her. This approach, however, already assumes the same gender typing as that of the at-large alter-reflexive gender concepts of tradition. Furthermore, it does not address the issue raised earlier of how to ensure that the phenomenon of the subject-focus (such as intellectual development) is primary for the subject vis-à-vis the subject's classification (such as being a woman).

Granted that studies in social psychology must gather and sort their data according to the reflexive concepts of its human subjects. How can the researcher use this understanding about social psychology to deal with the epistemic predicament? It is useful to look at related studies, one set of studies being hybrid (from biomedical science with elements of human sciences), the other from social psychology.

7. On the Way to Solving the Epistemic Predicament

The two examples do not explicitly try to circumvent the epistemic predicament but represent methods either that 1) tackle alter-reflexive concepts directly in their data gathering and sorting or 2) at least do not further the alter-reflexive (gender) concepts of tradition by superimposing them upon subjects for data sorting. Nonetheless they reflect how the alter-reflexive concepts shape our thinking and acting and so point to ways of how we can "be what we can be."

7.1. Root: Race in Medicine

In "The Problem of Race in Medicine," Michael Root (2001) describes how, although race is non-biological, the myth of its existence is so prevalent in the United States that it affects what health care various persons receive. Race is so unstable and desultory an alter-reflexive concept that it can change radically throughout an individual's life, due to different criteria that different bureaucracies use for assessing race. As a result, he notes, "one can be black at birth, American Indian at 40, and white at death." Easily, one's reflexive concept can differ vastly from the alter-reflexive. Root's point is that many people face discrimination in health care because of the alter-reflexive concept of race given to them. However, he notes, certain diseases are more likely in an individual if that person's mother is classified as black, or other diseases are more likely if the father is classified black. Thus, "epidemiologists are likely to incorrectly measure a racial difference in health risk or to improperly explain the risk if they employ the same definition of black and white in the study of every disease" (2001, p. 22). While Root finds that epidemiologists must still use these alter-reflexive concepts for their subjects as long as society uses such concepts to discriminate in individual health care, he calls for floating criteria in assigning these concepts. An individual thus is not designated by an alter-reflexive concept that stamps her throughout life like a brand, whatever her own reflexive concept may be. Instead, the epidemiological studies must adjust the way that alter-reflexive concepts apply to that person according to how the given subject issue, such as fetal alcohol syndrome or byssinosis, applies to her vis-à-vis the alter-reflexive concept.

7.2. Employment Discrimination by Gender

Valian (1998, pp. 127-128) describes social psychological studies about how people's gender schemas operate. In one study by L. S. Fidel, 10 PhD resumes for a professorial job-position were sent to 147 academic department heads, and six male- and four female-typical names were affixed to the resumes. Furthermore, the names were rotated on different resumes to assure a good mix of name-recognition with resume. The department heads gave the male names an associate-professor

position, and the female names the assistant-professor label. The study reveals that a strong gender schema at work in the respondents. The study also provides useful information for those seeking ameliorative policies. For example, one might develop ways for department heads to use certain strict or "objective" criteria to assure fair assessment of resumes. Also, the study itself might raise awareness of gender schemas in department heads and help them consciously to counter these schemas when assessing resumes. However, no subjects themselves were assigned to traditional alter-reflexive gender concepts.[12] The study ingeniously taps into our current non-egalitarian human condition, in order to point to ways we can live up to our projective reflexive concepts, or what we can be.

7.3. Options for Social Psychology

What can researchers such as Gilligan and Belenky et al. do to overcome the epistemic predicament? How can they investigate alter-reflexive concepts without concretizing those concepts in their subjects and obstructing view of those subjects' reflexive concepts, both concurrent and projective? One step for all studies involving their subjects' genders is to ensure they precisely assess their subjects' own gender reflexive concepts – what those subjects consider themselves to be, genderwise, whether any of various types of queer, various types of hermaphrodite, or asexual. They might also assess what their subjects' genders are vis-à-vis particular situations. In a combat situation, a subject may consider herself traditional male; in another, she might be asexual. The subject's reflexive gender concepts vis-à-vis the subject area may be entirely significant to the study. In a math classroom, I may be alter-reflexive female, but I may otherwise be reflexive asexual or male, so that boys' presences either make no difference, or even make me more competitive, in my math scores. Would it be accurate science to say I am a member of a group that performs more poorly in the presence of boys? Further, would it be fair to put me in a classroom with all alter-reflexive females as a result of this study? No, and no.

However, if the subject issue concerns gender discriminatory practices, it might be useful, along the lines Root (2001) suggests for race in medicine, to note by which gender the subject may be assessed via alter-reflexive concepts within a given situation. How this discrimination relates to the subject's reflexive gender concept could be a useful parameter as well. Generally, as social psychology must

[12] Valian (1998) does not note the gender of the respondents, though I understand from Alison Wylie (personal communication) that the respondents' gender was noted in the study, revealing that gender of the respondent made no difference in the rating of the resumes. However, this use of the subject/respondents' genders was only incidental, not integral, to the study. That is, the subject focus of the study was not the subject\s or respondent's alter-reflexive gender concepts.

take into account what we are, and what we are is decided as much, if not more, by reflexive concepts as by alter-reflexive, studies in this subdiscipline must always take into account their subjects' reflexive concepts, generally and, if relevant, particularly vis-à-vis the subject issue.

8. Conclusion

Given the characteristic that distinguishes the human from the natural sciences – the former necessarily have human concepts as their general subject matter – I contend that practices such as social psychology would do more robust science by maximizing this characteristic and this subdiscipline must acknowledge reflexive concepts in its study designs.

One enigma remains unanswered: Which is the "real" us – what we currently are and what we conceive ourselves to be, or what we can be, are striving to become? If we professedly are egalitarians but still make our daughters wear dresses but not our boys, are we then *not* egalitarian? It seems that the human state is a Heraclitian one of constant transition. Human-scientists must perform the impossible task of somehow at once freezing their subjects in place and yet not subtracting from their transitory nature. However, it is possible to devise studies that can extract facts about what the subject has been and still allow a view into where that subject can go. As Weber acknowledged, the human sciences will probably always have an ameliorative element.

In a way, all of us are subjects of human-science studies because these studies attempt to add to, if not shape, our reflexive concepts. And in turn, the human sciences represent an effort of our species to fulfill our projective reflexive concepts and become our own ideals. We can choose to ignore the results (although too often we eagerly accept the sacred edicts of science and activate Hacking's "Looping effect"), Congress can suspend funding, and we can even undermine vast human-science experiments, as was done to those of the Soviet Union. There is some amount of ongoing weeding process. However, it is incumbent upon human-scientists themselves to adjust their methods so they are studying not the concretized, unchangeable us but the fluid, ever-mobile us. Both of these aspects comprise the real us, the real subject, but the former cannot be studied at the expense of the latter, as too often is the case. With such care in the work, researchers in the human sciences can more assuredly be, as Root phrases it, "openly perfectionist" (Root, 1993, p. 250).

How do these results stand in terms of natural kinds vs. social construction, or introspection vs. objectivity, as brought up early as contrasts to this article's

positions? In human sciences, there are plausible cases of a degree of natural kinds, as in cross-cultural mental disorders. Many anthropologists acknowledge the likelihood of many cross-cultural traits (Brown, 1991, 2000), from abstraction in thought and speech to baby talk, from classifications of plants to those of sex. It is very hard to sustain that these hundreds of listed common traits just so happen to have arisen in every culture and so are all socially construction. Yet, ascribing all human social traits to natural kinds would stretch plausibility. The fact that humans have sexual behavioral codes is one matter, but the vast differences among these in how they manifest among societies almost stretches the vary concept of sexual customs. I suggest that the notion of reflexive concepts comes somewhere between these two endpoints. Natural kinds point to the fact there are broad categories that characterize the human being such that we can even have the referent of the concept of human in the first place. But given those broad distinctions, social constructs can help us hone in on the details exhibited by individualism to look more to the individuality which is a strict character of the species, which is composed of individuals. Reflexive concepts help articulate individuals' distinction even if their articulations thereof are not wholly accurate or redoubtable over time. Those distinctions are, of course, strongly influenced by social factors. This compromise between the two endpoints is comparable to that to the similar nature vs, nurture debate. Acknowledging that nature has a great part in fashioning the general human form while nurture can account for the fine details manifest in every individual. Recognizing these two endpoints not only need not be inconsistent but instead be entirely consistent with the empirical facts.

But is recourse to reflexive concepts not a concession to introspection to the expense of objectivity? This article contends that reflexive concepts are no more a compromise of objectivity than is use of interviews, focus groups, questionnaires, and other such means of obtaining information about a subject from the subject. "Introspection" as a concept of its own has troubles of vagueness and even its ontology: Just what in the mind is looking at just what? And indeed, people may have inaccurate notions about themselves and ever their opinions, discounting much claim to self-knowledge. Yet, if we as natural-language speakers and listeners cannot rely to a reasonable degree on what people say about themselves however exactly thy derived such possible information, then indeed, as some analytic philosophers have bemoaned, human language is useless for finding out anything about anything. But the sciences have grown tremendously by using natural language. As the article has argued, it is a given that concepts are central and essential to what human beings are and thereby, articulated via subjects, are central to account for in studying these subjects. The methods of using subjects'

inner-derived concepts and perspectives may proceed whether through a behavioristic or mentalistic framework. Insofar as reflexive concepts and alter-reflexive concepts hold potential information about the subject, and these data-gathering methods discussed can – as they very presumably can – yield useful information and concepts are indeed crucial to the human being, then this whole approach to/suggested program for studying humans can be objective.

References:

1. Belenky, M. F., McVicker Clinchy, B., Goldberger, N. R., & Mattuck Tarule, J. (1986). *Women's way of knowing: The development of self, Voice, and mind.* New York: Basic Books.
2. Baars, J. (2012). *Aging and the art of living*. Baltimore, MD: John Hopkins University Press.
3. Boghossian, P. (2006). *Fear of knowledge: Against relativism and conmstructivism*. Oxford: Oxford University Press.
4. Boorse, C. (1977). Health as a theoretical concept. *Philosophy of Science, 44*, 542-573.
5. Bornstein, K. (1995). *Gender outlaw – On men, women and the rest of us*. New York: Vintage.
6. Brown, D. E. (1991). *Human universals*. New York: McGraw-Hill.
7. Brown, D. E. (2000). Human universals and their implications. In L. Roughly (Ed.), *Being humans: anthropological universality and particularity in transdisciplinary perspectives*. New York: Walter de Gruyter.
8. Cooley, C. H. (1922). *Human nature and the social order*. 2nd Ed. New York. Scribner.
9. Devitt, M. (2008). Resurrecting biological essentialism. *Philosophy of Science, 75*(3), 344-382.
10. Devitt, M. (2010). Species have (partly) intrinsic essences. *Philosophy of Science, 77*(5), 648-661.
11. Fodor, J. (1994). Concepts: A potboiler. *Philosophical Issues, 6*, 1-24.
12. Funder, D. C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review, 102*(4), 652-670.
13. Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Cambridge: Harvard University Press.
14. Gopnik, A. (1993). How we know our minds: The ilusion of first-person knowledge. *Behavioral and Brain Sciences*, 16, 1-14

15. Greene, C. (2020). Nomadic concepts, Variable choice, and the social sciences. *Philosophy of the Social Sciences*, *50*(1), 3-22.
16. Greenwood, J. D. (2020) On the persistence of social groups. *Philosophy of the Social Sciences*, *50*(1), 78-81.
17. Hacking, I. (1990). *The taming of chance*. Cambridge: Cambridge University Press.
18. Hacking, I. (1991). A tradition of natural kinds. *Philosophical Studies*, *61*(1-2), 109-126.
19. Hacking, I. (2007). Kinds of people: Moving targets. *Proceedings of the British Academy*, 151, 285-318.
20. Hamzelou, J. (2011, 26 January). Transsexual differences caught on brain scan. *New Scientist*. https://www.newscientist.com/article/dn20032-transsexual-differences-caught-on-brain-scan/?ignored=irrelevant#.VX9oaBN3nJ4.
21. Haslanger, S. (2006). You mixed? Racial identity without racial biology. In S. Haslanger & C. Witt (Eds.), *Adoption matters: Philosophical and feminist essays*. Ithaca: Cornell University Press.
22. Haslanger, S. (2012). *Resisting reality: Social construction and social critique*. Oxford: Oxford University Press.
23. Hopwoodm A. L. (1997). The social construction of illness and its implications for complementary and alternative medicine. *Complementary Theories in Medicine*, *5*(3), 152-155. https://doi.org/10.1016/S0965-2299(97)80058-1.
24. Hull, D. L. (1978). A matter of individuality. *Philosophy of Science*, *45*, 335-360.
25. Kendler, K. S., Zachar, P., & Craver, C. (2011). What kinds of things are psychiatric disorders? *Psychological Medicine*, *41*(6), 1143-50.
26. Kitcher, P. (1999). The hegemony of molecular biology. *Biology and Philosophy*, *14*, 195-210.
27. Mallon, R. (2016). *The construction of human kinds*. Oxford: Oxford University Press.
28. Nagel, T. (1971). Brain dissection and the unity of consciousness. *Synthese*, 22, 396-413.
29. Nisbett, R. E., Peng, K., Choi., I., & Norenzayan, A. (2001). Culture and systems of thought. *Psychological Review*, *108*(2), 291-310.
30. Parfit, D. (1987). Divided minds and the nature of consciousness. In C. Blakemore & S. Greenfield (Eds.), *Mindwaves: Thoughts on intelligence, identity and consciousness* (pp. 19-28). Oxford: B. Blackwell.

31. Ridgeway, C. L., & Correll, S. J. (2004). Unpacking the gender system: A theoretical perspective on gender beliefs and social relations. *Gender*, *18*(4), 510-531.
32. Root, M. (1993). *Philosophy of social science*. Oxford: Blackwell.
33. Root, M. (2001). The problem of race in medicine. *Philosophy of the Social Sciences*, *31*(1), 20-39.
34. Senior, M., & Viveash, B. (1998). The social construction of health and illness. In *Health and Illness* (pp. 3-34). Basingstoke: Macmillan.
35. Shoemaker, S. S. (1968). Self-reference and self-awareness. *The Journal of Philosophy*, *65*(19), 555-567.
36. Sober, E., & Lewontin, R. (1982). Artifact. cause, and gene selection. *Philosophy of Science*, *49*, 157-180.
37. Sontag, S. (1978). *Illness as metaphor*. New York: Farrar, Straus & Giroux.
38. Sterelny, K., & Kitcher, P. (1988). The return of the gene. *The Journal of Philosophy*, *85*(7), 339-361.
39. Tsou, J. Y. (2013) Depression and suicide are natural kinds: Implications for physician-assisted Suicides. *International Journal of Law and Psychiatry*, *36*(5-6), 461-70.
40. Tsou, J. Y. (2020). Social construction, HPC kinds, and the projectability of human categories. *Philosophy of the Social Sciences*, *50*(2), 115-137.
41. Valian, V. (1998). *Why so slow? The advancement of women*. Cambridge: The MIT Press.
42. Waters, K. (1994). Genes made molecular. *Philosophy of Science*, *61*, 163-185.
43. Wiggins, D. (1976). Locke, Butler and the stream-of-consciousness and men as a natural kind. *Philosophy*, *51*(196), 131-158.
44. Winch, P. (1990). *The idea of a social science and its relation to philosophy*. 2nd ed. London: Routledge.
45. Wollstonecraft, M. (1792). A vindication of the rights of woman with strictures on political and moral subjects. J. Bennett (Ed). First launched 2010. https://www.earlymoderntexts.com/assets/pdfs/wollstonecraft1792.pdf.