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An Interpretivist Introduction to the Bio-Criminology and Critical Criminology Debate

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Abstract: Do biological processes control human behavior, at least to some degree on the micro or macro scale? Or are these biological processes inextricably intertwined with socially-constructed dynamics that also inform behavior? Does science provide clear and value-free information, or is science itself a socially-constructed process which presumes certain ideologies? In this article we introduce the reader to the debate between biosocial criminologists and critical criminologists and highlight that much of the tension in the debate is due to a fundamental difference in assumptions between these two groups of scholars. The article highlights some of these fundamental differences but also points out potential points of engagement and dialogue.

As we read the articles debating bio-Social criminology, such as "Defending Biosocial Criminology" (Heylen, et. al, 2014), "Rage Against Reason" (Walsh & Wright, 2014), and "Ptolemizing Lombroso" (Carrier & Walby, 2014) we note that the authors prove excellent at debating surface constructs, but few address fundamental assumptions in terms of epistemology, agency, and ideology. They use language like "Rage against reason" to critique their critics, when their critics are not raging, nor are they being unreasonable. Likewise, the critics use terms like "ptolemizing" which overlooks the subtleties and nuances of the biosocial position. Because they do not address these fundamental assumptions, there seems to be a perpetual set of misunderstandings when the debate begins. To better understand the issues at hand for these scholars, we will highlight and explore some of the differing fundamental assumptions and offer potential connections for dialogue and collaborative work.

Epistemologically, those involved in the debate assume different ways of knowing, and difference about what knowledge actually *is* (Slife & Williams, 1995). Our bio-criminology colleagues *seem* to assume an empirical (or positivist) epistemology, one that entails knowing as data and knowledge itself as the recording of that data in our memories. In a manner of speaking, data requires no subjective interpretation if it is gathered through the right method (Walsh & Wright, in press). If a bio-criminology colleague gathers data, they are more likely to gather information they can quantify and count, like genetic codes and criminal convictions for example. The data speaks for itself, so to speak, that if a certain genetic code or cluster correlates strongly with the number of criminal convictions, no interpretation is required. Such correlation is *provable*, and it's right there in the data (Heylen, et. al, in press; Walsh & Wright, in press). Because the data speaks for itself and the relationship between variables is provable. The objective certainty that this provides spares the scientist from the seemingly unreasonable relativism of social constructivism. Unfortunately, this overlooks the similarities between objectivism and relativism, given that both share certain assumptions and values. "They both tacitly assume that either we have pristine, timeless standards of truth and goodness or we have no valid standards at all for judging scientific or ethical merit" (Richardson, 2005, p. 25; Bernstein, 1983).

However, when we read what some of our biosocial criminology colleagues write, they specify that there is no such thing as naïve data, and they take up a position of what they call *critical realism* (Heylen, et. al, 2014). Critical realism is an epistemology that entails iterative refinement of observations and improvement of theoretical models rather than proof through experimentation on dependent and independent variables (Coller, 1994; Bhaskar, 1998). In addition, critical realists, unlike positivists or empiricists, argue that processes may potentially exist that remain inactivated at a particular time and context, that even if these processes are active during a given study that the researchers may not observe them. Hence, even if a given mechanism or process is not observed, it may still exist (Coller, 1994).

Epistemologically, those on the critical side explicitly take up a social constructivist or hermeneutic approach to understanding both what knowledge is and how it is obtained. From this perspective, knowledge is developed by and through human relationships and language so much so that anything that is known is only known within the specific and broader context of language and culture (Gergen, 2014). Because of this, any knowledge or truth claim a researcher in criminology could make is always already situated in, and informed by, the cultural, social, and linguistic context of the research and all involved. Therefore, this truth or knowledge claim done by a scientist can be deconstructed to show that the "objective" or "scientific" truth claim made by the researcher arose (in part) out of the sociocultural context of the research. For example, if a researcher finds a strong relationship between one group of people (say those with a particular genotype) and criminal behavior, the constructivist would ask "is this truly due to genetic differences or is it due instead to endemic and intractable racism against those with this genotype?" Their concerns arise noting the relationship between racism and crime, that the oppressed minorities (who assumedly share some genetic similarities) demonstrate increased crime rates because (in part) of the desperation caused by oppression (Unnever, 2015). Should a biosocial criminologist find a relationship between genetics and criminal behavior in this case, what they are actually finding is an artifact of racism and oppression from this perspective. These empirical artifacts of what are actually sociocultural processes indicate that any scientific truth claim is actually uncertain. However, if critical criminologists are to remain true to their own philosophy, they would also acknowledge that any claim they make also lacks certainty, and that any knowledge, claim, or criticism remains, itself, uncertain, subject to the same deconstruction.

Critical realism and constructivism, when it comes to research, share two characteristics in common but arrive at these from different sides of the debate which colors what they mean. These two characteristics are uncertainty and the iterative nature of knowledge. On the critical realist side, engaging in research is an

ongoing matter of refinement, looking and looking again, taking in criticism of the research and building new models. If, for example, the critical realists heard the concerns of the constructivists and took them seriously, they could begin researching only genotypes that exist across racial groups or somehow control for oppression and racism. They would tend to interpret any of these findings as uncertain and part of an iterative process. The critical criminologist may agree that knowledge is not a certain thing (like data stored in memory) but will argue that knowledge is rather uncertain because it is a fluid sociocultural processes. Something is not "known" per se, but *constructed* or constructed-as-known. Because of that, knowledge is always approximate and ultimately uncertain because of its fluidity and constructed nature.

Given that knowing from both sides, is uncertain, there may be opportunities for collaboration, even if the uncertainty arises from different sources. Biosocial criminologists who take up critical realism may, on the one hand, appreciate the concerns of the critical criminologist and may re-think and re-interpret their data and try to account for or measure the role of these issues (like pervasive racism) in their research. The constructivists, on their hand, might appreciate a model of how embodiment (the genetic part of embodiment) and crime relate, and the two sides could continue to dialogue and from their respective sides iterate the research together. The challenge remains because a critical realist will have more faith in the process of empirical-esque science and look to those methods to provide clarification and prove greater validity for better models. The constructivist, on the other hand, will likely remain suspicious of a truth claim arising from such methods and trust would only increase if the sociocultural situatedness of the research is clearly outlined and discussed in terms of how it informs the research, as well as a justification by the researcher for their interpretation.

Contention and confusion will remain, however, given that not all constructivists will necessarily accept research findings on genotypes and crime, and not all of those doing empirical research on these phenomena approach the research with the critical realist perspective and its incumbent uncertainty. Fueling the confusion and debate are statements like "Biosocial criminology . . . takes the path of science and seeks to go beyond the readily observable to the underlying 'cause of causes' by utilizing the techniques provided for us by geneticists and neuroscientists" (Wright & Walsh, 2014, p. 3). Critical criminologists may find themselves asking "Which 'path of science' the radical empiricist one, positivist one, or the critical realist one?" Each of these paths of science has different implications for gathering data, interpreting data, and applying the results of the study. In addition, a critical reader may question the "cause of causes" position on the biosocial side.

Does that indicate that biosociologists know, for certain, that genetics cause sociocultural processes like oppression and racism? Confusing the matter even more is the acknowledgement by some biosociologists that "culture cannot be decoupled from biology" and that science "has revealed many examples of cultural practices driving natural (and therefore, genetic) selection" (Walsh & Bolen, 2012, as cited in Walsh & Wright, 2014, p. 5). So, if genetics are the "cause of causes" how can sociocultural processes drive genetics if genetics cause sociocultural processes? In essence, some biosocial criminologists reduce humans to mere genetics in the eyes of the critical criminologists. As one author stated, "To reduce living beings to the function of biological networks, not only invalidates the potentiality of living beings, but also lessens the possibility for the emergence of the subject" (Polizzi, 2014, p.18). Critical criminologists worry that if all human beings from the baseness of their crimes to the heights of their altruism are merely ultimately genetics, the thinking and feeling subject becomes lost under the 'cause of causes' the belief that all of it is ultimately caused by, and reducible to, genetics.

Reductionism is not without its critics within the field of the behavioral sciences. Reductionism is the assumption that any given object or process is caused by and reducible to its components (Slife & Williams, 1995). Put simply, an object is not only less than the sum of its parts, its smaller component parts are all the object really is. This, in turn, assumes an atomism or atomistic approach which entails the belief that the cause of an object are the atoms that comprise it, the atoms being the fundamental and irreducible parts of the object (Slife, Reber, & Richardson, 2005). If the object in question is crime, then crime (a very complex sociocultural, socio-legal, moral and ethical issue) is actually reducible to its most fundamental irreducible unit, or "atoms". The atoms in the case of certain biosocial researchers are the irreducible "cause of causes" that genetics represent for them. This does not discount the complex relationship of atoms (genetics) to one another, then the effect of those on the environment, etc. However, even in the face of all of this complexity, the assumption or assertion remains the same, that the ultimate cause of all of these other events (like crime rates in a community) is ultimately reducible to, at least in part, the genetics of those committing the crime. Critical criminologists may critique that assumption, because they tend to view crime as irreducible to any atoms, and tend to view crime as situated in a time, place, and culture and comprehensible only within a macro-context.

Relative to the assumption of reductionism is also the tacit assumption of determinism (Slife & Williams, 1995). Determinism means the belief that these atoms (genetics) determine behavior in a hard

sense, and that the human agency of the subject does not actually play a role in behavior. In the writings of some biosociologists, human agency seems epiphenomenal to the criminal behaviors they seek to measure because behavior is actually caused by other forces hence the experience of agency is disregarded or ignored in their theory and research.

The assumptions of reductionism and determinism complicate questions of "guilt" and "innocence" in the world of crime and jurisprudence. In western philosophy and culture, there is a strong conceptual link between agency (some semblance of genuine choice on the part of a subject) and moral and ethical culpability for the commission of crime (Osborne, 2014). In essence, someone accused of a crime can only be found guilty of a crime if they actually had the capacity to choose to commit the crime and did so. If they did not have the capacity to choose rationally whether or not to commit a crime then they would be found not guilty (e.g. "not guilty by reason of insanity"). Rational choice is so important that both state-of-mind at the time of the crime as well as competency to stand trial are both assessed in cases where these are of-issue and inform the process of jurisprudence greatly (Perlin, 2007).

Although it may well be that some biosocial criminologists leave room for agency in a compatibilist fashion, others seem rather deterministic in their language. Compatibilism, in this case, is a philosophical position that entails both causes of behavior as well as leaves room for some degree of free will or human agency (Kane, 2005). Biosociologists who are critical realists in their epistemology may leave room for human agency. They will tend to look at the role of genetics in terms of "influences" of biology on crime or "tendencies" of certain people with certain genotypes to behave in a criminal way. Their research attempts to uncover the degree to which a criminal act may have a genetic or biological basis, which may inform the courts potentially of the degree of moral and legal culpability of the accused. However, in the research of other biosociologists it is reasonably easy to accuse their empirical approaches to social science of harboring a rather explicitly deterministic view of the agent. The self is seen as constrained by forces outside the agent, and the agent herself is seen as the mere product of the same set of sources. So, individual persons are seen as merely biological mechanisms that react to environmental cues, rather than persons who choose to grapple with the elements of their complex and sometimes difficult environment. Carrier and Walby see biosocial criminologists in more or less precisely this way. They characterize the biosocial criminologist's work as "the biopathologization of a brain's structure," "nomothetic, socio-historically non-contingent," and based on a "neo-positivist Poperian conception of science," that only gives credence to testable predictions of behavior

that are “falsifiable” (2014, p. 11), while these same biosocial criminologists “condemn as ideological many observations in which the bios is not central” (p. 11). More telling still is the claim that the biosocial criminologist’s insistence on an “unalterable, constraining, human nature” (p. 12). The person, then, as conceived by Carrier and Walby’s view of the biosocial criminologist, is the sophisticated automaton of a Hollywood sci-fi film. A thing capable of very complex reactions to the physical, biological and social environment it inhabits, but which is not capable of making changes to its world on its own.

But this picture of the biosocial criminologist’s self as a biological machine may not be fully accurate. To be sure, such a vision of the human exists among Anglo-American (analytic) philosophers and among some social scientists.¹ Those who see it as endemic to personhood rightly prize agency.² But more pressing than the dismissal of the person as agent (if only because it has been a greater pragmatic failure), is the assumption that the social scientist *knows* what the underlying causes are and can manipulate the person on the basis of that knowledge. When that is the case, there is a very real danger that persons will become the subject of scientific experimentation, social prediction and under the biased scrutiny of the social lab technician. All of this is, indeed, cause for real concern.

These concerns about the biological reductionism and determinism are illustrated with the case of Tangelo Park. In 1994, Harris Rosen, a millionaire philanthropist and business owner, stepped in to help the community. Having grown up in a hard neighborhood himself, Rosen decided to give back and subsequently created the Tangelo Park Pilot Program (TPP). Rosen’s efforts consisted of designing and completely funding three components: 1.) a prekindergarten program for every two, three, and four year old child in Tangelo Park. 2.) Full college or vocational school scholarships for every graduating senior in the Tangelo Park area. The scholarship includes “tuition, room and board, books and travel expenses”. 3.) A “Family Resource Center”

¹The list that we could generate here would likely be a very long one and would take us back historically to ancient days (Democritus and Leucetius) and into the enlightenment (D’holbach), through the 20th Century (Ayer, 1982 [1954]; Skinner). There would be plenty of contemporary advocates as well (Pereboom, Galen Strawson). There is no need to provide anything like an exhaustive list. In generating this rather sparse list, further, I have focused only on the so-called “hard” determinists. A long tradition holds that determinism is compatible with agency (though Kant called this move a “wretched subterfuge” and many today agree). I have not listed those referred to as “compatibilists” here, since, by their own lights, they believe in agency. Carrier and Walby might not consider their view as one that allows for real agency, but would matter little here, since there are plenty of examples of the harder kind of determinist to choose from. Suffice it to say that Carrier and Walby do have something to be worried about.

² One could see the presumption of persons as agents as a theoretical or conceptual matter, something that any good social science would never abandon, or one could see the question as an empirical matter. For our purposes, that question need not be settled here.

where parents can go to take courses on parenting, receive counseling and other help to “become positive role models”. (Tangelo Park Program, 2010).

Since Harris Rosen “adopted” the town of Tangelo Park, the community has seen a huge turn around. 10 million dollars has been donated by the Rosen Foundation to Tangelo Park since 1994. The high school dropout rate, which was close to 25%, has almost been completely eliminated. Virtually 100% of Tangelo students graduate with their high school diploma. Of those that go on to attend a four-year school, 77% achieve a degree and those attending vocational schools complete them at a rate of 83% (Tangelo Park Program, 2010). Additionally, the crime rate has been reduced by 63% “showing a continuous decline over the past several years and a near eradication of illegal drug dealing” (Tangelo Park Program, 2010).

Tangelo Park is a predominantly African-American community. Should a biosocial criminologist have measured the relationship between genetics and crime before Rosen's intervention, they probably would have found significant relationships between certain genetic markers and criminal/delinquent behavior. Much of this behavior, as Rosen's intervention proved, was not due to "criminal genes" but due instead to racism and its consequent socioeconomic oppression. Once the burden of oppression was lifted, the community changed very dramatically. There was not sufficient time for genetic adaptation to explain the sudden change in behavior (no generations passed, all of this happened in one generation), so, even from a scientific perspective their findings relating genetics to behavior would have proven false (which some claim the process of science is *for*). But to a critical criminologist, looking at genetic markers and ignoring sociocultural and socioeconomic relationships to criminal choice is greatly worrisome. Science can advertently or inadvertently serve unjust systems of oppression.

Armed with a view of science that is radically critical of the naive certainty of many scientific claims, and deeply concerned about the tendency of past scientists to see individual humans, as well as whole swaths of humanity in terms that marginalize their humanity, on the basis of traits supposedly "scientifically" discovered, the social constructivist is often deeply skeptical of the biologization of criminality. And there is some reason for caution. Examples, like those above, in which the "scientifically" minded have sought to objectively entrench their own social and political prejudice using the stick of science, on the basis of flimsy if not absurd evidence abound. This kind of sociological tweaking of data and selective choosing of results may, indeed, be ubiquitous in science, but it is most heinous when levied against persons in the so called "social" sciences. When the physical sciences wax hubristic, less is at stake. The shifting sands of disputes about superstrings and semi-

conductors do not have human beings directly in their sites (though the discussion does impact human beings: witness debates over whether to build a supercollider, which will cost literally billions or debates about the role that humans play in contributing to climate change). Humanity is impacted by these debates, but they are not the field of study. So, the outcomes are not prone to “totalize” a subject who faces the world phenomenally. Physics may be as prone to social construction as criminology, but its subject matter is not humanity itself.

Because the subject matter of biosocial criminology is humanity itself, the social constructivist has good reason to concern herself with scientific hubris. Views that assume too readily that humanity can be encapsulated and “totalized” (to borrow a phrase from Levinas) have done severe damage to the lives of persons (Davis, 1996). The methodological assumptions of the constructivist camp, radically eschews any attempt to capture the human as social person within any kind of “scientific” framework that insists it understands humanity in terms that undercut the infinite flexibility of the human. There is, in short, no human “Nature” as such that all persons are either grounded in or can deviate from. Further, this cautionary approach to seeing the Other as a mere object of study leads constructivists to take a rather skeptical approach to hard sciences generally. The sciences are seen as themselves social constructions. The psychiatrist, the neuroscientist and the psychologists are simply another set of storytellers whose methods are different, but no better than the methods of the shaman, or the priests. Their philosophy of science, then, tends toward the radical. The constructivist is more prone to cite the scientific skeptics (Feyerabend, the more radical reading of Khun, Foucault, Hacking) than the more scientifically minded philosophers of science (Carnap, Quine, or VanFrassen). All of this is understandably motivated by an attempt to sympathetically see the person from within her own phenomenological stance. When social “science” makes pronouncements about the roots of behavior too quickly or with too much zeal, the potential for abuse can be extremely high. A look at the history of social science over the past hundred years gives us plenty of examples. Stephen J. Gould, for example famously described how “science” found a difference in intelligence between members of certain racial groups on IQ scores, when these differences are actually due to socioeconomic and socio-cultural processes, not race (Gould, 1996). Likewise, after examination and thorough inquiry of slaves who ran away, certain scholars coined the diagnosis “Drapetomania” a disease that caused slaves to attempt to flee their bondage (Naragon, 1994). Such “scientific” diagnoses exist well into the 20th century as well. For years homosexuality was listed as a mental illness requiring treatment. Fully scientifically verifiable, what was at stake was not the scientific data, but the value-based assumptions of the scientists. Homosexuality was not removed until the early

1980's (Spitzer, 1981). And in the Soviet Union, political dissidents were diagnosed with "sluggish schizophrenia" by psychiatrists who researched the issue. This diagnosis then validated the soviet's silencing of those who spoke out against the regime (Wilkinson, 1986). Once again we see that the value assumptions of the researchers guided their interpretation of the data.

So Carrier and Walby find in biosocial criminology the potential for the worst kind of social control and are, therefore, keen to rule out that kind of psychological manipulation. But the move may be too quick. While there are reasons for worry, to throw out the scientific baby with the bathwater of social manipulation may be to commit the fallacy of false dilemma. While it is true that many social scientists who see the person in (more or less) biologically deterministic terms in the past have, indeed, thought their own views allowed them (as fools) to rush in where (more cautious) angels might fear to tread, the right response to such foolishness may not be to condemn all attempts to look for causal antecedents to behavior in biology. There is room for the view of the self as a biologically embodied agent, constrained by her own *bios*, even if not determined by that biology in all instances. This may in fact be the kind of agent that we indeed are. But if this is the kind of agency we persons inhabit, then there is real room for exploring the causal antecedents of (some of) our behavior, even while admitting that these causal factors do not entirely undermine our self-determination.

As an example, take Alzheimer's disease. This neuro-degenerative disorder (uncontroversially, we would think) has neurological and biological roots, but it also influences behavior. In fact, Alzheimer's disease represents a nice test case here, since the disease itself, while a neuro-biological disorder, influences cognition (memory and intelligence), affective states (moods and emotions) and has social consequences (aging parents no longer able to take care of themselves now in the hands of their younger off-spring or being placed in nursing homes). Reflection, in fact, on the Alzheimer's case can lead to a more nuanced view of the notion of psychological cause. The place to start is with causation, not with psychology. Any event that has causal antecedents has more than one causal antecedent, and while we are prone to see cause too often in simplistic terms (the match strike *caused* the flame) there is much more going on (without the presence of oxygen, fuel for the flame etc., there would be no flame). Biological antecedents could well serve this kind of role in the process of generating psychological action. The person as agent is not ever "simply" caused by her history, her genetics, her cultural *mele* or agency to act, and yet all might play some role in generating action. A person with early onset Alzheimer's may feel frustration at not being able to remember a name at a party (a very social environment) and may well feel that frustration deeply (affect/emotion) but be able to avoid manifesting that

frustration on any particular occasion, feeling or not (which may be an act of will). But this story need not imply any denial of either the biological constraints causing psychological properties nor of the agency of the Alzheimer's sufferer.

Of course Alzheimer's patients do gradually lose their agency. Eventually, most of us believe anyway, their agency diminishes to the point of non-existence. But this, too, underscores a point that is inherent in this debate. Agency might not be an all or nothing affair. If Alzheimer's makes it more likely that persons feel frustration, and if action on the basis of frustration is more difficult to resist, then, even if the action is resisted, there is a causal relationship that holds between the cause (the biological process—Alzheimer's) and the effect (the feeling of frustration). That is not to say that there is no social or cultural picture here (the demands that someone remember a name, the demands that one not express frustrations publicly), but the existence of social pressures in this case should not be seen as denying that there are elements of cause of the situation that are purely biological. For example, when our co-author Draper worked in a prison one of his patients suffered from a case of rapidly progressing dementia. As a consequence to his disease, the normally placid patient became increasingly physically aggressive regularly assaulting medical staff and his fellow inmates. Normally, such behavior would result in extreme sanctions on the part of the prison up to and including more criminal charges. But in the case of this particular patient, because of his deteriorating biological condition, staff believed he had no choice in his behavior. Therefore, he was spared the draconian sanctions usually consequent to aggressive behavior in prison. Everyone understood that his aggressive behavior was caused by his deteriorating brain, not by any semblance of rational choice to aggress.

Two dramatic and famous criminal cases support the causal role of biology in criminal acts, particularly those of Whitman and Yates. Charles Whitman killed sixteen people and wounded thirty two in August of 1966. He was a U.S. Marine and student at UT. Prior to the shooting, he had seen several psychiatrists to whom he complained about intense and irrational feelings of anger and aggression (Ramsland, 2005; Whitman, 1966). He described these feelings as being totally out of character, even mentioning being disturbed by fantasies of going up to the bell tower and shooting walkers below (Heatly, 1966) On the day of the shooting, Whitman killed his mother and wife before the other victims and was eventually shot by two police officers while still in the tower (Ramsland, 2005). Although Whitman suffered abuse growing up (leading to his parent's eventual divorce) and abused amphetamines in the military, these aggressive responses seemed highly out of character for both himself and those who knew him (generally as a polite, intelligent, and

deferential). Whitman even requested that an autopsy be performed upon his death to seek a physical explanation for his experience (Whitman, 1966). After officers shot and killed Whitman at the top of the bell tower the autopsy revealed that Whitman had a tumor pressing against his right temporal/occipital lobe and is thought to have contributed to his violent actions (Report to the Governor, 1966). While Andrea Yates in 2001 drowned her children in a bathtub. Yates suffered postpartum psychosis at the time of the crime, and delusionally believed that due to her own corrupt and unable nature would cause God to damn all of her children to hell because of her inability to mother them into righteous adults. To save their souls while they were still pure children, she stabbed and/or drown each of her children in turn. When she finished drowning them she tucked each of their corpses into bed then called the police emptyly echoing over and over again "it is time" (Misri, 2007). These homicides represent a horrific crime, but in Yate's case we note that she functioned adequately, if not well, as a mother until the onset of the disease. Once the disease manifested after the birth of her fourth child her behavior changed markedly and deteriorated even more after the birth of her fifth child. Although occasionally melancholy, after the psychosis began she threatened and attempted suicide on at least three occasions, chewed on her fingers, cut herself with blades, demonstrated motoric trembling and later, degrees of catatonia (Misri, 2007). Researchers believe, and have some evidence, that cancer, and psychoses, are at least in part caused by genetic processes (see Ayalew, et. al, 2012 and Ramasamay, et al, 2014 for examples). So although reductionism and determinism may concern critical criminologists, any attempt to rule out biological causation altogether because it implies causal determinism is a mistake. Given these cases and many more like them, examining the relationship of biology to behavior seems a very important and valuable one from the genetic to the anatomical levels. Researchers may do so without "ptolemizing Lombroso".

It becomes important with this acknowledgement to develop an understanding of knowledge and method to obtain it that has at its primary tenet the nature and role of interpretation. As Gadamer develops so eloquently, our understanding of truth and our understanding of method are the assumptions that guide our research questions, how we gather our data, how we analyze our data, and how we not only interpret the results but put those results into action (Gadamer, 1989). All of these philosophers and researchers discussed so far have all engaged in acts of interpretation, from the most basic science to the deepest philosophy, whether the objects of interpretation are texts or data. In both cases, interpretation is an interpretation of *something*. The object of interpretation itself guides the interpretation, so claims can be made about the

accuracy or validity of the interpretation by referring back to the object itself. The critical criminologists do this by referring back to the texts themselves; the critical realists do so by referring back to the iterative nature of their data. However, the object of interpretation is not the only issue; the horizon of the interpreter proves fundamental to the act of interpretation as well. *Horizon*, in Gadamer's sense of the word, entails the perspective and context of the interpreter (Gadamer, 1989). The perspective entails the attitude, beliefs, and intention of the interpretation, while the context entails the moral, historical, linguistic, and sociocultural situated-ness of the interpretation. Because of this, two different researchers may approach the same data set from two different perspectives and contexts and understandably arrive at two very different interpretations.

Unfortunately, positivist or critical realist theorists when writing their research in empirical journals may share summaries of their data, analysis, and interpretations, but rarely do they share their horizon, one implicated from the very formation of their research question that pre-exists that moment of conception and guided their work since. If they were to do so, every article would look like a combination of philosophy, personal story, and traditional research, which is notably absent and contrary to our current tradition of criminological research. However, without the authors of the research explicitly sharing their horizon on these issues, readers may grow concerned about the harm the research might do, depending on the intent of the interpreters. If researchers find consistent relationships between certain genetic factors and criminal behavior, what would the researchers intend, to merely show a correlation, or to assume some causal connection, if there is a causal connection to intervene? If to intervene how do they intend to intervene, and will it do more harm than good? Can they explicitly share and justify their horizon vis-à-vis "harm" and "good"? Such justifications arise not from the data themselves, but from the values of the researchers that too often remain tacit. When we read the critical criminologists we note that they are not afraid of biology, they are afraid of how biological information will be interpreted by researchers, and what sorts of well-intended programs that grow out of them may perpetuate systems of harm, or create them. Genetics, evolution, natural selection, may not be the actual causes of these harms. In this debate between these two groups of scholars Darwin has been quoted before, but on this issue his words seem hauntingly apropos, "If the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin" (Darwin, 1836, p. 35). The critical criminologists explicitly question the ideologies of their biosocial peers, who return the same question. At heart here, on both sides of is the issue of ideology, particularly in terms of making truth claims about observations.

For her part, the biosocial criminologist is prone to naively take their observations as revealing the world. Theory is taken to be confirmed or disconfirmed by bald observation. What we see, it is assumed, is linked in a strictly causal way with what we say about what we see and what we say about what we see is taken to reify a Real World. Thus, the thinking seems to go, science, through its linguistic constructs (hypotheses, observations sentences, theories) corresponds to the reality given to us in experience. Walsh and Wright, for instance, while they reject 'naïve' realism (the claim that reality just is the way we take it to be in our 'folk' worldview) accept a view that they borrow from Roy Bhaskar, 'Critical realism' (2015, p. 10). The view is fallibilist, but strictly speaking still very committed to a correspondence theory of truth and a rather naïve notion of how the terms of the theory 'map onto' the world. In fact, mapping is the very term they use: "Critical realism," they inform us, "wants us to remember that our theories and data are maps of reality, not reality itself" (2015, p. 10). While it is a move toward caution to embrace a fallibilist epistemology, wedding that epistemic stance to a correspondence theory of truth still has deep problems. There is no easy path from our language to the world it describes. Critiques of realist theories of truth abound (Putnam, 1983; Hacking, 2002). Many of the arguments are far too technical to be expounded in this introduction, but the list is long. Further, dismissing these criticisms as either excessively metaphysical or unduly skeptical will not do either. Critics point out that it is the realist who is assuming a metaphysics (Putnam 1983, p. 210). Further, dismissing skepticism about physical entities is one thing; it is something different to dismiss worries about reference to psychological 'entities.' The DSM (IV or V) diagnoses and the behaviors that those diagnoses are supposed to track are not the best candidates to be 'Natural' kinds. Their borders are often arbitrary and rather vague. Anti-Social Personality Disorder, a disorder often implicated in criminal behavior requires that the subject meet three of seven criteria in terms of sub-symptoms. This means that conceptually, you could have two people, both diagnosable, who do not share any of the sub-symptoms in common (APA, 2013). Further, they are often explicitly social constructions in some sense by *anybody's* lights. Gambling Disorder, for example, entails many of the same dynamics as addiction to chemical intoxicants to a degree, yet the entire diagnosis hinges on a social construction of gambling (it would not exist in cultures wherein which gambling did not exist) (APA, 2013). The critique of naïve, scientific theories of reference is strong enough when it comes to physical entities. It is something like a given in psychology. Especially when certain theoretical stances will posit entities that are morally problematic (think again of drapetomania or sluggish schizophrenia). These kinds of psychological entities are downright cruel under any theory of truth, but under a realist theory which

takes reference to be a correspondence relation between words and the world, the categories become reified and the persons who fit within the categories become victims of a 'scientific' psychology, deeply motivated by its own political agenda.

The linguistic assumptions of biosocial criminology, it seems, are naïve. This very naïveté, further, grounds their commitment to another problematic assumption: the fact/value distinction. Scientific theories don't have to imply anything immoral, since the data themselves are *value neutral*. What we do with the data (how we treat others on the basis of the data) are not problems that a science can in any way solve. But this is problematic if what is being observed is itself a construction (particularly when that construction is motivated by values itself). The criminal, for instance, is only a criminal if there are laws for him to violate, and the laws themselves are social constructions based on the values we hold as social and historically situated organisms. Persons may be more or less violent without value, but labeling violent action a crime is inherently value driven. We label violent behavior criminal because of our axiology. Without value there is no crime. If we reify our values, however, we are likely to take the actions of real persons to be markers of actual types of persons, persons who are thought to have disorders. These disorders are taken to be natural kinds. Drapetomania and sluggish schizophrenia are prime examples here again, since they were once taken by reasonably large groups of people to be serious psychological categories. Of course, there really were slaves that ran away from their masters and political dissidents in the former Soviet Union, but the conditions themselves were not natural kinds of disorders. It seems obvious that they were only taken as such because of certain values shared by the groups who labeled them. A similar kind of case can be made for more common psychiatric illnesses, though the case is not identical. We wouldn't consider depression, for instance, a mental illness unless we placed some disvalue on the psychological states that are depression. Criminality is similar. We would not bother looking at the criminal as a class of persons unless there was something about the behavior of criminals that we took an interest in. It seems wrong to say that values determine what all properties are. Some properties may be determined by the impact of objects on my sensory apparatus (color properties, or temporal dimensions, for instance). Other properties are more prone to adjustment by value (thieves, for instance, seem only to exist because we value private property). But many properties do track our values. Biosocial criminologists do need to be cautious. Psychology is just the kind of discipline in which values often play a major role in fixing kinds and properties. So facts are not as easily pulled apart from our values as the biosocial criminologist would like us to think.

But while all of this is surely true, *radical* social construction does not follow from it. It is probably wrong to think that our terms hang so easily on their referents in The World. Similarly, it is probably wrong to think that we can, particularly in social science, distinguish the entities that the science studies from the values that the humans studying it happen to hold. But it is probably also wrong to insist that this means that there is *no* world we social creatures share and negotiate together. It also does not imply that the embodied biology that we emerge from is a complete fiction, not subject to real physical constraints. It does not imply, further, that facts about this world are always and only a function of our values. Conceptual flexibility in the way we describe this world may be infinite. This does not imply that all descriptions of it are equally good, or that there are no descriptions of it that are wrong. In fact, the world can't be all value, since there would be nothing to value. Similarly the world can't be all description, as there would literally be nothing to describe. Both description and value refer. Both, then, are empty without something to refer to.

We may not have a given, ready-made world, but there is something out there we bump against and that we can describe to one another as bumping up against. This move is considerably more radical than a philosophy of science founded on a correspondence theory of truth, but it considerably less radical than social constructivism. The advantage to the moderate path is that it allows us to not only adjust the truth claims we make in the face of data and to revise theories and shift paradigms, but we can also adjust the assumptions about the values that inform the theories and the paradigms to begin with. Even if what counts as data is informed by the world view we hold, that does not mean that we can observe *anything*. We may make the world, but we don't make it out of whole cloth. Something does resist our attempts to construct certain worlds. Data may never be immaculate, but that does not mean all data is meaningless. Something about our biological/social/moral world is shared by the biological, embodied beings that share it. No matter what their given stance, that shared world does impact the social beings that inhabit it. There are strong reasons for caution when we come to answering questions about ourselves using scientific methods. The human sciences are a delicate matter, and we must be cautious about presuming we have located "the given," particularly when what we take to be given are facts about human beings. Caution is surely in order.

Caution, though, is not impossible within the sciences, even the social sciences. Lombroso's views were eventually rejected, but not because the scientific community waxed constructivist. In fact, Wright and Walsh are right. Lombroso failed because the science was bad. According to Stephen J. Gould, for instance "Lombroso constructed virtually all his arguments in a manner that precluded their defeat, thus making them

scientifically vacuous. He cited copious numerical data to lend an air of objectivity to his work, but it remained so vulnerable that even Broca's school turned against the theory of atavism" (1996, p. 154). Gould quotes Paul Topinard, a contemporary of Lombroso's: "He did not say: here is a fact which suggests induction to me, let's see if I am mistaken, let's proceed rigorously, let us collect and add other facts . . . The conclusion is fashioned in advance, he seeks proof, he defends his thesis like an advocate who ends up by persuading himself" (1996, pp. 162-164).³ Lombroso fails, not because his views were merely constructed (though they were) but because the construction couldn't face the world we share without crumbling. The fact is that the assumptions grounding Lombroso's science couldn't find shrift in the world we embodied beings inhabit. There is no reason to abandon the project of doing biosocial criminal science altogether. But we should be cautious. We should not too quickly or too readily forget the role our own situated stance plays in generating the hypotheses, testing their efficacy, naming the properties that the entities they presume have. In short we ought to remember that we are not merely fallible in generating data. We are prone to fallibility in generating all the elements of our epistemic and metaphysical frameworks. But the flexibility we have in dividing the world is not infinite, either. If we forget that truth, we run certain risks as well, particularly in the social sciences. Persons who really are constrained by their biology need to be treated differently than persons who are not biologically constrained. When we dismiss scientific findings as social constructions merely because we don't like the view that a particular social scientific theory presupposes—that is to say, when we just ignore the data because we

³ The passages quoted here make it clear that the criticism is that Lombroso was convinced of his own theory to the point that he made his theory immune to criticism. The final claim made by Topinard, for instance, is that "[Lombroso] is too convinced" (164). This should decidedly NOT be read as a point for the social constructivists. Lombroso's attempt to entrench his ideas into the scientific study of criminology ultimately failed, according to Gould (though Gould never denies their popularity) because they could not support the weight of the data. Lombroso's own circular reasoning about his theory is not relevant here, since the scientific community was not convinced by the data he presented. Much of that same scientific community, of course, was convinced of claims that were every bit as discriminatory and as virulently racist as Lombroso's own views. But that, of course says something too. Though they held similarly ethnocentric views to those of Lombroso, the data he presented were, by their lights unconvincing, though they could have found in them verification of claims very similar to their own. This they did not find, in large part because the data were BAD. Of course they did continue to hold their own racist views (Broca is a good example, according to Gould [1996, p. 105-141]), and it is likely that they did so because they failed to examine their own assumptions about value and etc. But we do not (as the biosocial criminologists do) claim that this is not a part of the social practice that is science. Our only claim is that it does become unreasonable to hold some claims in the face of certain kinds of data, whether not data can be rendered immaculate.

don't like result, and then justify the ignoring on our scientific skepticism, we run considerable risk of being as cruel as the Lombroso's of the world.

Ideologically speaking, there are those who believe that objective science will reveal the most valuable truth. Some biosocial criminologists, for example, are prone to naively take their observations as revealing the world. Theory is taken to be confirmed or disconfirmed by bald observation. What we see, it is assumed, is linked in a strictly causal way with what we say about what we see and what we say about what we see is taken to reify a Real World. Thus, the thinking seems to go, science, through its linguistic constructs (hypotheses, observations sentences, theories) corresponds to the reality given to us in experience.

Biosocial Criminologists, on the other hand, are as prone to view blank ideology, devoid of any empirical justification just as cautiously as social constructivists view the attempt to be "objective". It may well be the case, for instance, that some of the destruction wrought on humanity in the 20th Century has been done in the name of "science," but all of these attempts have turned out not to be "objective," or scientific at all (Heylen, et. al, in press). Racism, for instance, on their view, finds no shrift in science. Yes racists of the past have tried to ground their bigotry in "objective" claims to scientific facts, but the fact is that their racism informed their interpretation of the facts at hand (Berg & Wendt, 2014). Objectively, slaves ran away. Objectively African-Americans demonstrate lower scores on IQ tests (Herrnstein & Murray, 1996). Objectively today African-Americans are convicted of crimes at a higher rate than Caucasians (Unnever, 2015). Objectivity, in each case covers over the role of interpretation of the facts at hand and the socially-constructed processes that inform deeply these seemingly "objective, scientific" facts.

What remains needful is a unity of rigorous methods to determine the relationships between the *bios* and behavior that necessarily includes socially constructed processes. On that issue, we see hope that members of both of this debate can agree, and we see in some of these articles reason to hope. This hope, it seems, is most needful when studying the human conditions that inform crime and punishment, victimization and recovery, division and unity. This Horizon is one, we hope, all involved in this debate share. Perhaps it is time to share this Horizon explicitly in our research.

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