



Intertheory Relations in the Social Sciences: Criminology as a Physics of the Social?

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ABSTRACT

Are there inter-theoretic relations within social science which in any way parallel those seen in natural science? If so, where should criminology be positioned within such a framework? Does it have the kind of explanatory power usually granted to 'more venerable' social sciences like economics or sociology? Or is it, as some have argued, merely a 'rendez-vous' discipline, dependent for its insights and status upon other disciplines? In this paper I argue for a more radical position, one which contends that criminology provides a kind of methodological core for social inquiry. I offer three arguments in support of this stance. First, the decisive (though overlooked) role played by criminology within the emergence of social science. Second, the foundational insights it offers into the problem of social order – arguably the central challenge for social science. Third, the striking way that many explanations of the contemporary social world appear to supervene upon criminological concepts and ideas. I conclude by suggesting that the function of criminology as a foundational social science may be akin to what Comte and Quetelet once called a 'social physics'.

Keywords: Social Order; Social Physics; Criminological theory; Supervenience; Theoretical reduction

INTRODUCTION

A key methodological question within science centres upon how different theories should be related to each other. The importance of this question is obvious enough. If, as is often the case, the relation sought is reductive, then identifying a theory to which others reduce provides for a far more economical toolkit – one with all the explanatory power of the previous arrangement, but with fewer commitments to extra entities or laws. As a result, the natural sciences have been replete with attempts at theoretical reduction – some more successful than others. The recognition of valence in physics as the basis of chemical bon-

ding and the absorption of Newtonian mechanics by special relativity count as obvious examples of success (Bunge, 1985; Rivadulla, 2004). But genuine reductions have been so few and far between that less demanding varieties of intertheoretic relations are usually sought.

One promising approach here has centred upon the more fluid concept of a “hierarchy”, where a theories position within any hierarchy is determined by “how basic” an account of the world is offered¹. But since “basicness” need not entail an eliminative reduction, different theories within the hierarchy can retain their nomological autonomy². Perhaps the most influential account of this relationship currently available lies in the idea of “supervenience” – the extent to which the entities and properties of a theory are said to “supervene” upon those of another (Kim, 1993). Supervenience relations are most easily understood in terms of one very simple principle – “no difference in theory A without a difference in theory B” (Lewis, 1986, p. 14). For example, molecular properties supervene upon atomic ones since any molecular change requires a corresponding change in atomic properties (whilst the reverse does not hold). It is in this sense that physics has often been seen as the most “basic” science – since every other natural phenomenon ultimately supervenes upon the entities and forces studied by physicists, without the converse being true. As the physicist Rutherford once put this more colourfully, “all science is physics or stamp collecting”.³

The increasing prominence – or “rude health” (Garland & Sparks, 2000, p. 190) – of criminology within both academic and policy fields has highlighted a long-standing need for a better understanding of this question as it relates to the social sciences, for the relatively limited attention paid to intertheoretic (social science) relations⁴. has allowed certain assumptions to prevail about the status of criminology, particularly the idea that it offers (at best) a “niche” variety of specialized social explanation, one focused almost exclusively upon a scientific account of the interplay between offending and its institutional responses. Such criminology functions merely as a subdiscipline of sociology (Akers, 1992; Hester & Eglin, 2017), one that offers certain useful (albeit highly particularized) insights into deviance and social control but that has little to offer to the grand narratives of social science, or to the rich theoretical insights found within its “master” disciplines like economics. In this paper I want not only to challenge this standard model but to set out some grounds for a more radical position, one that does not just resituate criminology within the social sciences or as an amorphous rendezvous point for other, more substantive positions (Downes, 1988). Instead I will suggest it may also have a far more foundational role.

1 More “basic” theories are simply those upon which other theories supervene – i.e. physics is more basic than chemistry in this sense.

2 That is, independence in terms of their laws.

3 Cited in Birks (1962).

4 Aside from debates about the relations between economics and sociology conducted during the late nineteenth/early twentieth century by thinkers such as Small (1895) and Marshall (see Arena, 2008), subsequent discussions have been sporadic and limited, for example in papers such as Parsons and Smelser (1956).

I will offer three arguments in support of this revisionary stance: first, a historical argument that highlights the instrumental role played by criminological thinking in shaping the origins of what we now think of as “social science”; second, a supervenience argument that, in a striking parallel with the “social physics” considered by early social scientists, suggests that social phenomena depend upon a social order secured by the kinds of mechanisms that have been of special interest to criminologists; and third, a causal argument, which associates manifestations of these mechanisms with precepts of how the contemporary world is experienced and governed.

Intertheoretic relations: unity, fragmentation and hierarchy

At the heart of the question of intertheoretic relations lies the issue of commensurability – the extent to which any theory can be meaningfully correlated with another. This question was pursued independently by both Kuhn (1962, 1983) and Feyerabend (1962), who came to the (somewhat contentious) conclusion that most scientific theories are incommensurable because scientists (literally) “think differently” and so utilize non-translatable concepts when operating within distinct theoretical frameworks. Incommensurability appears to undermine the prospect of any common explanatory ground across theories – an uncomfortable outcome for most philosophers of science/social science. (Cartwright (1999), Dupré (1993) and Hacking (1996) are amongst those who hold science to be ineluctably fragmented. Oppenheim and Putnam (1958) are amongst those who have rejected this.)

In comparing theories, a key desideratum is surely to acquire answers to questions like: what does one theory tell us that another does not? How does one theory complement or enhance the claims of another? When are theories *inconsistent* with each other? But the “pre-paradigmatic” nature of social science (Kuhn, 1983) has been problematic here, for it means that, unlike natural science, there has been limited consensus about what constitute its foundational research problems. It is almost impossible therefore to decide (for example) when a monetarist analysis of exchange relations is “better” than a Marxist one or whether a Freudian explanation of cultural symbols replaces, or merely complements, anthropological interpretations. In this paper I will therefore restrict consideration of intertheoretic relations within social science (and specifically criminology’s status here) to the more manageable question outlined above – the extent to which theories supervene or depend upon others for their mechanisms or their explanations, that is, how far any social science theory can be said to be *basic* to others. For if it is at all plausible that criminology provides theories that are in some sense “basic”, then the charge that it is merely a subdiscipline within more (ostensibly) established theoretical fields like sociology or psychology becomes far less sustainable.

Such an approach provides for a less onerous set of objectives than more formal approaches to intertheoretic relations: for example, Carnap’s attempt to derive a purely observational, universal language of science by way of logical *semantic* intertheory relations (Carnap, 1928), or Nagel’s suggestion (Nagel, 1961) that disciplines could be interconnected by way of certain “bridge” laws (Hempel, 1966).

Relating supervenience relations to questions of explanatory power allows a theory to be seen as more basic where it explains a set of observations more comprehensively (Oppenheim & Putnam, 1958). Not only does this avoid the complications of applying formal/logical languages to social science theories, it also focuses attention upon what many take to be a primary task of social (or natural) science – the identification of (causal) mechanisms (Elster, 2007). This idea of a stratified reality, where the atomic level connects with the molecular level via causal mechanisms and so on all the way up to the social and psychological, was also set out in the work of Bhaskar (2008).

It has found favour with social scientists⁵ precisely because it is able to grant autonomy to the social world, whilst acknowledging certain forms of dependency upon physical processes.

This dependency is captured well by the concept of supervenience, and it is on this basis, then, that I will claim that there is at least some meaningful commensurability across social science theories and that such commensurability implies a more basic role for criminology than has usually been considered.

Criminological explanation

An immediate problem in attempting to situate criminology within the social sciences is defining the scope of its inquiry. Without some reasonably robust sense of this it would clearly be hard to know where or how other forms of social explanation supervene upon criminological explanation. So when we say that a piece of knowledge, or a tool of inquiry, is “criminological”, what is meant by this? Prima facie, the answer to this question appears temptingly straightforward – almost from its inception, the field of criminological inquiry has centred upon three defining questions: the nature and causes of crime and criminals; the legal and institutional responses to criminal offending; and the extent to which the theoretical tools and methods for investigating these are “scientific”. But closer inspection quickly reveals that matters are far from this simple. On the one hand, there has been the demand that criminological explanation should encompass far more: for example, victims as well as criminals, fear of crime as well as crime itself, and what prevents crime as well as what causes it (amongst many other options). On the other hand, even with these basic questions, opinions have varied significantly about where the emphasis should properly lie. For example, legalistic approaches like those associated with classicist thinkers such as Bentham were less concerned with the criminal (who, after all, had chosen to offend through the exercise of free will) and far more interested in the nature of societal responses to their actions. By contrast, positivist approaches saw the *criminal* as central – often regarding crime itself as something that could *only* be understood through this lens – as in Ferri’s argument that “crime must be studied in the offender”.⁶

In turn, more recent approaches like crime science have swung the pendulum back to a focus upon crime rather than criminals (Laycock, 2005).

⁵ Within criminology, Bhaskar’s critical realism has been especially enthusiastically applied within the “ultra-realist” position espoused by Hall and Winlow (Hall & Winlow, 2015). However, see Wood (2019) for a critique of Hall and Winlow and inconsistencies in their utilization of critical realist ideas

⁶ Cited in Sellin, 1958, p. 482.

Equally tendentious has been the debate over whether the focus of criminology should only be upon violations of legal rules (Tappan, 1947) or whether it should extend to breaches of less formal societal rules: for example, cultural forms of deviance like extreme fashion, disruptions such as antisocial behaviour (see, for example, Mannheim, 1955) or any conduct causing harm (Hillyard, Pantazis, Tombs & Gordon, 2004). And whilst the idea that criminology should be concerned with developing a “scientific” approach to these questions has found more agreement (criminologists, like any other social scientists, want to feel that what they are doing is epistemically superior to a mere casting of the runes), there have been plenty who have been less convinced of the value or success of this goal (see, amongst many others, Young, 2011). For Foucault in particular, criminology was little more than a product of the nineteenth-century disciplinary order – and so “failed to develop a theoretical justification for itself, or even a coherent framework” (Garland, 1992, p. 404) as a science. In this view, criminology only survives because it legitimizes governing power structures by way of pseudo-scientific characterizations of pathological difference and the “criminal type”.

Deep though these disagreements have often been, and overly varied though the subject matter of criminology often appears, this need not suggest any fundamental confusion about the scope of the discipline. I argue instead that any conclusion that criminology is fundamentally “fragmented” (Wikstrom, Oberwittler, Treiber & Hardie, 2012), “lacks a common paradigm” (Brisman, Carrabine & South, 2017) or is little more than a hotchpotch of other theories – a mere “rendezvous” discipline – represents a collective failure of nerve on the part of criminologists and a recurring failure to accept its pre-paradigmatic status as a discipline. Certainly, criminology remains at a relatively developmental stage as a science – but this does not entail anything inherent to its nature that might prevent it from acquiring the status of a more integrated, explanatorily powerful body of knowledge. After all, given that physics has taken over 2,000 years to acquire the status it has, the few hundred years (or less) that have seen the development of criminology is a drop in the ocean by comparison. Similarly, rather than taking the plethora of (ostensibly) distinctive approaches within the criminological tradition as a weakness, I contend that this is a sign of strength, for it demonstrates how the (ostensibly) simple construct of “crime” can generate rich and diverse fields of inquiry. Such diversity is in fact the sign of good theory, a mark of what philosophers of science have termed theoretical “fecundity” or “fruitfulness” – the capacity of a theory or theories to generate new insights – one that has been counted as a theoretical virtue alongside other kinds of virtue such as evidential and causal accuracy or explanatory depth (Keas, 2017).

But whatever the focus of criminology – be it criminals, victims, deviance, harm or something else – there is a clear supervenience relationship at work with respect to its foundational subject matter. Here the “no difference in X without there being a difference in Y” requirement is seen in the fact that without there being certain forms of negative or harmful conduct that societies respond to in more or less serious ways, there would be no deviance, no violations of law, no (social) harm, no victims of this, no attempt to create policing mechanisms, no punitive order and so on. It is in these kinds of norm violation and the institutional response to them where I situate the ontological focus of criminology that will be pursued in the argument to follow.

This means that the ontological status of crime within criminology is not given by particular crimes, for these may clearly vary across time and place. Rather, “crime” acts as our best evidence of two factors that do appear to be universal. First, as Durkheim suggested, there is the recognition found within every society that there are always some individuals who violate its social order. Second, there is the recurring perception that some violations are so serious that they demand a response that goes beyond mere societal disapproval. Rather, these are violations that so offend against accepted codes that punishment is required. This holds whether the social order is underpinned by religious codes, legal codes or the whims of some dictator.

It is in the universality of this tipping point between sanctioned and unsanctioned rule breaking where criminology finds its ontology. It is in mapping the particularities of how each society constructs systems around this where its epistemology begins. And it is in the convergences between the social order that emerges and the rich and diverse socio-economic structures that are able to emerge as a result where its key supervenience relations lie. In what follows, I will suggest that it is this fundamental focus upon social order and the response to departures from it that provides criminology with its ontology, and which confers its special position within the social sciences. But first I turn to a more straightforward issue of priority – where it sits within the historical development of the social sciences.

A historical argument: criminology and the inception of “social science”

Criminology has rarely figured as a theoretical field within discussions on the origins of the social sciences. The more usual tendency has been to read this genesis story as one involving the emergence of economics and sociology (see, for example, Goldman, 1983; Ross, 1992). Mere terminology has often sufficed to support this standardized chronology. For example, the use of the term “sociology” by the French essayist Sieyes (in an unpublished manuscript from 1780) has sometimes been cited as evidence of the emergence of sociology in the late eighteenth century (Faure, Guilhaumou, Vallier & Weil, 1999) – even though Sieyes was not proposing a new science and probably meant something different from how sociology is read in contemporary terms⁷. Nonetheless, other, more comprehensive criteria – such as evidence of a substantive body of published, theoretically integrated work – also appear to support the “standard” origins story of social science. In particular, the plethora of economic texts that emerged in the late eighteenth century – most notably Smith’s *Wealth of Nations* in 1776 – seems to confirm the status of economics as the most venerable of the social sciences. For this text and several other economically focused works, such as Malthus’s (1798) *An Essay on the Principle of Population* and Jean-Baptiste Say’s (1803) *A Treatise on Political Economy*, represent a body of work published at least 30 years prior to the text usually taken to “officially” demarcate the emergence of sociology as a discipline – Comte’s *Cours de Philosophie Positive*.

7 For example, Sieyes also used the term “sociocracy”, which appears to entail a different, more political science-oriented set of theoretical objectives.

However, closer inspection suggests that such criteria may in fact support a rather different and less well told story. For example, the text that most accept as one of the foundational statements of early criminology, namely Beccaria's *On Crimes and Punishments*, was published in 1764 – over 10 years prior to Smith's *Wealth of Nations*. Nor was this text an isolated event. Beccaria's work was quickly followed by thematically related texts such as Verri's *Observations on Torture* (in 1777) and further works with clear criminological themes – in particular, Bentham's *An Introduction to the Principles of Morals and Legislation in 1780* and his *Panopticon Writings* in the 1790s (in Bozovic 2011). If we look back still further, to texts such as Montesquieu's (1749) *The Spirit of the Laws*, which include a number of arguments around penalty (arguments that were a major influence upon Beccaria's thinking), the origins of criminology might be situated still earlier. Indeed, even works like Hobbes' *Leviathan* (1651), traditionally interpreted as a political science treatise, might also be read in criminological terms given its preoccupations with security, crime, policing and punishment.

Adopting a criterion of origins based upon publication, then, suggests that a plausible historical case can be made for holding that criminological themes and ways of thinking were widely present in works that were at least contemporaneous with (if not prior to) those with primarily economic themes. Moreover, such works significantly pre-date those texts usually taken to define the emergence of a definitively "sociological" discipline. It is also worth noting just how much of Adam Smith's work was preoccupied with recognizably proto-criminological concepts at times. His first publication, *The Theory of Moral Sentiments* (1759) – a work Smith regarded as superior to *Wealth of Nations* (Phillipson, 2010) – was not only concerned with moral norms and deviations but contained significant discussions on the nature of crime and its appropriate punishment.⁸

Works like *Lectures on Justice, Police, Revenue and Arms* (1763) extended such reflections, offering detailed suggestions about the way that justice systems could be optimally organized and funded and stressing the duty of governments to provide adequate "policing". Smith's *Lectures on Jurisprudence*⁹ – which sets out a quasi-history of the emergence of (criminal) justice – provides further evidence of his interest in criminological questions. Even *Wealth of Nations* does not have a purely economic focus, declaring itself to be focused upon the "four great objects" of the state/law, namely "justice, police, revenue and arms", and it contains various reflections upon regulation and optimal methods for organizing a justice system.¹⁰

Whilst publication offers one kind of criterion for primogeniture in the social sciences, the opinion of early social scientists themselves in defining the primary explanatory function of their disciplines is also revealing. For example, in his *Course on Positive Philosophy* Comte argued:

Now that the human mind has grasped celestial and terrestrial physics, mechanical and chemical, organic physics, both vegetable and animal, there remains one science, to fill up the series of sciences of observation – social physics. (Comte, 2010, p. 7)

⁸ See, for example, II.III.17, III.I.15 ff and III.I.122, amongst many others

⁹ This work, unpublished during Smith's lifetime, was based upon lectures given in the earlier part of his career.

¹⁰ I.10/82; in particular Book V.

This idea of social science as a “social physics” is one that was also advocated in a more criminological context by Quetelet (2013). But if an interpretation of social science as social physics is to reveal anything substantive about a credible chronology of social science, two issues need clarification: First, the question of when the term “social physics” was first used and by whom; and second – and more crucially – what a social physics entails and which social science discipline provides the kind of explanations best suited to the foundational concerns of any such physics.

Given that Comte’s first use of the concept of a “social physics” can be dated to his 1822 essay *Plan des travaux scientifiques nécessaires pour réorganiser la société* – more than 10 years before Quetelet’s first recorded use of the term¹¹ – the answer to the first question would appear straightforward enough. But if we look a little more closely at how, and with what intentions, the term “social physics” was used, the answer becomes less clear-cut. For example, it seems plausible to argue that this is a concept that Quetelet had been developing for some time and was more influenced by his work with early statisticians like Concordet and his idea of a “social mathematics”. Quetelet was working with Concordet in Paris at the time when Comte was composing the *Plan des travaux scientifiques nécessaires* and his version of social physics seems more likely to have been developed from his earlier (1831) formulation of a *mécanique sociale* (“social mechanics”)¹² than from Comte’s idea – which Quetelet appears to have been unaware of (Porter, 1985).¹³

More decisive evidence of their differing interpretations lies in what each took a social physics to consist in. For Comte, social physics “is that science that occupies itself with social phenomena, considered in the same light as astronomical, physical, chemical and physiological phenomena” (1966, p. 27). Yet for Quetelet, a social physics was a predominantly frequentist idea, centred around investigations into constants like the “average man” (*l’homme moyen*), one characterized not just by the mean values of variables that follow a normal distribution but crucially by the *deviations* from this constant. Statistical approaches to the physics of the social were anathema to Comte who famously rejected the “pretension of some geometers to render social investigations positive by subjecting them to a fanciful mathematical theory of chances”.¹⁴ Whichever interpretation is ultimately preferred, it is more than plausible to argue that the view of social science as a “social physics” has historical roots that are at least as “criminological” as sociological. And as the next section will argue, there are also reasons for holding that criminological concepts do in fact better realize the idea of social science as a social physics.

11 In his 1835 work “Essay on Social Physics: Man and the Development of his Faculties”.

12 The term was used in a paper delivered by Quetelet in 1831 and published in 1832 as Quetelet, “Recherches sur la loi de la croissance de l’homme”, NMB, 7 (1832).

13 Beirne (1987) is inclined to differ, though he concedes that there are no references whatsoever to Comte in Quetelet’s early works. Beirne also accepts that Quetelet’s almost total immersion in the statistical “scene” of Paris in the early 1820s may have had more influence upon his thinking.

14 Cours Pos Phil; bk 6 ch. 4 1855, p. 492. Comte was unhappy that Quetelet used the term “social physics”, castigating the “Belgian Scholar-who has adopted it.... as the title of a work whose concern is simple statistics” (1838 version of Cours, bk 4, p.15 – cited in Beirne, op. cit.).

It does not of course follow from any historical re-evaluation of the status of criminology that its status within social science as a whole has shifted. This does, however, provide a much-needed challenge to the myth of criminology's late arrival on the social science scene. A closer scrutiny of the historical record not only suggests that the criminological imagination was active at the origins of the (contemporary) social sciences, but also that it made at least as substantial a contribution to the development of this field as ostensibly "master" disciplines like economics and sociology.

Supervenience – social physics and the dependence upon social order

The fact that criminology might realize the idea of a social physics more completely than other social sciences provides a second rationale for treating it as foundational. Within natural science, the status of physics as the most "fundamental science" is usually secured in virtue of the fact that it:

...deals with...the fundamental principles that are subsequently applied to...other disciplines of science such as biology, chemistry...electronics, engineering. (Sanghera, 2011, p. 8)

Since the converse does not hold – that is, explaining the behaviour of atomic particles does not depend upon the behaviour of cells or organic matter – the implication is that all varieties of natural science explanation ultimately supervene upon physical explanation.

Is there any sense in which a structurally equivalent argument within social science could be run? Here Quetelet's reflections are instructive, for not only do they offer one kind of an indication of what such fundamental (social) patterns might consist in but (ultimately) why criminological explanation sits so well with them. For Quetelet, as we have seen, a social physics is best rooted in a frequentist understanding, one that appears to reveal key continuities and constants within social facts such as birth, death and morbidity rates. In fact, the concept of frequency is something of a red herring, one masking a deeper, more subtle idea that is at work. As Quetelet himself put it, "...in the social state we may expect... to find all the principles of conservation that are observed in... natural phenomena (2013, p. 7). In other words, frequencies in the social world are just another manifestation of the kind of conservation principles found throughout nature, and this means that, though interesting, they are secondary to a still more general focus on social science/social physics. This is the phenomenon of constancy *itself* and how it is detected within social data. Science as a whole is predicated upon this simple methodological premise – i.e. that not only does it identify ontological facts about the existence of constancy/regularity within nature, but it also provides methods that can reliably distinguish observations of the "real" constancies from mere chance conjunctions: regular things that can be reidentified and located within explanatory categories (Strawson, 2002). To put this another way, good science is "good" by virtue of the fact that its methods help to reliably distinguish orderly/non-random phenomena from the purely random. For example, chemistry counts as a valid scientific discipline precisely *because* it detects and explains a specific range of non-random natural patterns such as inorganic molecules and chemical reactions. Reading tea leaves does not

count as scientific because the patterns it detects and claims to interpret are the outcome of randomness and chance.

So central is the requirement to detect non-randomness or pattern that it is the (ostensibly superior) capacity of mathematics and physics to do this that has lent them their elevated status – indeed mathematics has often been described as the “science” of pattern detection (Resnik, 2000). Of course, the fact that so many observations within the social world appear to relate only to single or ‘one off’ events has made it far more difficult for social scientists to decide whether an observation involves something genuinely non-random. Nonetheless, good social science explanations depend upon identifying non-random features of the social world, in the form of familiar patterning variables such as utility, class, demand, preference or consumer confidence. The idea that the social world, like the natural world, exhibits order means that the task of social explanation is, in effect, to reformulate Kant’s question about the world, “how is nature possible?”, in terms of Simmel’s question, “how is society possible?” (Simmel, 1910). For social order (or at least the presumption of it) is not as fundamental a prerequisite for the possibility of social science as *natural order* is for physics; it is in the realization of social order – in its disruptions or in its absences – that the character of social life emerges.

The idea that what characterizes social science is the study of (social) order is one to which social scientists have frequently returned. Comte himself accepted that a social physics was that part of natural philosophy dealing with a “science of organized bodies” (2010, II, p. 28), and more recently it has been argued that social order is the “core theoretical issue in the social sciences” (Hechter & Horne, 2001, pp. 1–2) or that “explanations of social order, of how and why societies cohere, are the central concern of sociology” (Marshall, 1998). Norbert Elias acknowledged the strong affinities between natural science and social science in this regard, arguing that the concept of social order should be understood “in the same sense that one talks of a natural order, in which decay and destruction as structured processes have their place alongside growth and synthesis, death and disintegration alongside birth and integration” (1978, p. 76). But in contrast to natural science, there are a far more bewildering number of ways in which social order can be manifested – manifestations that, in a sense, define the multifarious fields of social scientific investigation. So I suggest that we begin with something more fundamental – the underlying structure of social order (in any form) and the kinds of mechanism capable of producing it. In the next section I will consider two such mechanisms and why criminology may play a foundational role in theorizing them.

Supervenience: social order and its dependence upon criminological mechanisms

Order, in general terms, has been variously conceived: as the stochastic phenomenon of non-randomness or compressibility (Kolmogorov, 1963); as symmetry and invariance (McGuire, 1999); and in terms of emergence and complexity (Prigogine, 1989). Whilst some of these ideas may have a bearing upon the

way *social* order is formed and maintained (see, for example, Lane’s 2006 association between complexity and the orderly hierarchy of social science theory), something a little more obviously “social” seems desirable if the autonomy of social science is to be maintained. In addition to some of the more familiar ideas already considered – i.e. social order seen in terms of familiar phenomena like states and religions, market structures like price elasticity or attitudes like voting preference – sociologists have also suggested that social order can be understood in terms of more abstract entities like agents or structures, hierarchies or networks (Hechter & Horne, 2001). The problem is that such ideas seem merely to involve *manifestations* of social order rather than providing any obvious conditions or mechanisms for it.

If we therefore ask instead what produces stable social formations, one useful place to begin lies in Hobbes’ seminal reflections upon this problem. Hobbes famously argued that any consideration of social order needs to begin with a more primal state – that of social disorder, where social actors are driven by the “perpetual and restless desire for power after power which ceaseth only in death” (1962, II, XI), thus producing the notorious “war of all against all” (*ibid.*).

Since, for Hobbes, social order is a second-order phenomenon denoted by basic security, some form of mechanism is required to explain how the shift from social anarchy to social order occurs. Hobbes’ response to this question arguably prefigures what are now the two fundamental approaches to explaining how social order emerges and is maintained. Both can be seen in terms of his construct of the “Leviathan”, a supra-human structure that underpins their order:

- (i) First, the Leviathan defined by Hobbes in terms of the “Commonwealth by acquisition” – the mechanism of a (coercive) “natural force” (like a strong leader) (II, XVII) that secures social order from chaos.
- (ii) Second, the social contractarian Leviathan, or the “Commonwealth by institution”, where social order emerges because “men agree amongst themselves” to delegate control to an individual or assembly (II, XVIII).

Hobbes does not see these mechanisms as operating magically, or independently of the social. Rather, they depend upon a still deeper, albeit less discussed factor to which Hobbes also seems to allude – the *choices* we make in opting for these forms of social order and what influences these choices. On the one hand, our choices may be driven by *irrationalities*, such as fear (of a powerful leader or of external threats). On the other hand, it may be *rationalities* – like the pursuit of efficiency – that shape our decisions. I want now to suggest that criminological concepts and tools form an essential prerequisite for explaining three of the factors that appear central to forming and maintaining social order – the three C’s, namely conflict, consensus and choice. And therefore, since the study of social order is fundamental to what social science *is*, criminological concepts and tools are basic to social science.

Social order, coercion and conflict

The idea that coercion can produce and sustain social order has been an influential one. No specific degree or variety of coercion seems to be required since order might arise as much from subtle ideological control as from the impositions of a brutal tyranny. This idea of social order has of course been most extensively developed within Marxist thought – ostensibly through the mechanism of economic classes (Marx & Engels, 1969), though it is important to be clear that class structure's more enduring function is to *maintain* social order. For Marx, deeper factors like superior access to wealth/capital serve as the primary mechanisms for producing social order, with the possibility of force always underpinning this privilege. In contemporary society, this “latent” force is most commonly articulated through the state – that “complex of institutions that bases itself on the availability of forcible coercion...in order to maintain the dominance of a ruling class” (Draper, 1977, p. 251). The “monopoly upon force” (Weber, 1919) exerted by the state underlines why social order that originates coercively need not involve actual force. “Soft” power, such as ideological incorporation or the threat of latent violence, – can be just as effective a mechanism.

However the interplay between violence and order is mapped out, there are good arguments for seeing criminological concepts as being integral to understanding it. Firstly, it is obvious enough that the uses/misuses of violence and the social responses to this have represented a key theme within criminological thought from its very origins. This is not surprising – since violence against us counts as one of the most socially undesirable of outcomes, it has (almost) always counted as a cardinal “crime” and as one of the actions societies are willing to punish most heavily (see McMahon, 2002 for some notable exceptions). *Understanding* violence (whether physical or psychological) and the optimal ways of preventing or responding to it has therefore been one of the most heavily theorized areas within criminology – whether this involves the actions and motivations of violent perpetrators, the harms inflicted upon victims of violence or the institutional structures society has developed for managing violence (see, amongst many others, Alvarez & Bachman, 2008; Barak, 2003; Riedel & Welsh, 2008; Westmareland, 2015). And whilst this means that criminology does not, of course, “own” violence as a research thematic, it is criminology, of all social science disciplines, that has developed the widest spectrum approach towards it. That is not just in terms of its individual/psychological basis, but also its social causes, its societal impacts and the institutional responses to it.

A second, less obvious factor that ties social science/sociological accounts of coercive social order to criminological explanation arises from our perceptions that this is a variety of order that is “unjust”, for clearly, where force is an ultimate determinant of social order there are no requirements for transparency, due process or the other familiar constraints of a socio-legal framework. In a sense, then, criminality (or at least the illicit) pervades and underpins the very core of such an order since “[in] any system in which the rulers are self-appointed... there is no legal procedure for removing them” (Wintrobe, 2000, p. 22). Not only that, since the kinds of legal constraints we normally expect to protect us are likely to have been abused, or to be absent altogether, one of the key characteristics associated with any power – the power

to define individuals as ‘criminal’ – lies entirely within the whims of a central coercive force.

In other words, one of the defining characteristics of coercive social order lies in its negations or violations of law – violations that mirror precisely that which defines the criminal. The inherent criminalities of coercive order are perhaps most starkly revealed in its most expansive manifestation – as empire – for “the story of empire is the story of crime and violence. Empires are, criminologically speaking, criminal organizations” (Iadicola, 2009, p. 33). And even where we conceptualize coercive order in more invisible or subtle forms, the shift away from spectacular demonstrations of power towards “juridical power” still carries with it a range of criminological implications. For as courts are used to bolster control (rather than justice per se), “threats to society” become recouched in the language of crime and criminality (Foucault, 1975).

Given all this, it is hard to avoid the conclusion that if one attempts to understand a social order that is dependent upon coercive mechanisms without drawing upon criminological concepts and tools, one has simply failed to grasp the essential character of what coercive social order is. For not only is such an order an implicitly violent one, it can be plausibly interpreted as an alegal and therefore potentially criminal social arrangement. Furthermore, in considering the cold pragmatics of coercive power, it seems clear that without resorting to prototypically criminological tools like policing bodies, policing technologies, punishment regimes, surveillance tools, criteria for legitimate/illegitimate identification or the use of shaming and othering as control mechanisms, such an order simply cannot be maintained. Thus, whether it is in the abstract conception of coercive order, its status as an illegitimate or alegal social formation or the kinds of control resources required to maintain it, criminology appears to operate as a basic social science in explaining this.

Social order as consensus

Criminological thought appears to be equally foundational to an understanding of the mechanisms that underpin a “contractarian” Leviathan, that is, to a social order that emerges through consensus – the extent to which social actors “agree” to abide by certain norms and values. Durkheim’s argument that “social reality is at its core a moral reality” (Collins, 1988, p. 44) offers one reason why consensus is such an effective mechanism for producing social order, since:

...(the) effectiveness of the normative solution (to social order) is due to the fact that norms and values are not only shared but also internalized and so become constitutive, rather than merely regulative, of social behaviour. (Ellis, 1971, p. 694)

This view of social order is one that has found wide support amongst social scientists. Parsons, for example, argued that “[p]eople act on the basis of their values; their actions are oriented and constrained by the values and norms of people around them; and these norms and values are the basis of social order” (Knapp, 1994 pp. 191–192). Similarly, though Goffman was uncomfortable with the kind of macro -

structural interpretation of social order favoured by Parsons, he agreed that consensus was the central mechanism for producing it, since “the rules of conduct that bind the actor and recipient together are the bindings of society” (1967, p. 90). For Goffman, such order was best observed in micro-interaction because it is here that “the interaction (order) more than any other perhaps is in fact orderly and...this orderliness is predicated on a large base of shared cognitive presuppositions, if not normative ones” (1983, p. 5). Either way, whether normative consensus is interpreted as a force of the collective consciousness, structural norms or the rules of everyday life, this approach to social order ultimately rests upon the extent to which behaviours are sanctioned or censured.

The foundational social science role that criminology plays in understanding the mechanisms that drive consensus can perhaps be most readily seen within the modalities of how any society evaluates *departures* from them, for such evaluations are most transparently manifested in the form of the institutions societies construct to judge, to “correct” or to punish normative departures. I will return to this point in a moment, but there is another, perhaps even more striking indicator of the foundational aspects of criminological thinking here that emerges from such considerations, for with just a little reflection it becomes apparent how deeply interwoven at the conceptual level ideas of norm adherence are with ideas of the criminal/deviant. In fact, a view of social order as consensus is, in effect, semantically equivalent to a view of social order as an ***absence of rule breaking*** (ergo criminality/deviance). And this semantic interdependence therefore implies an even stronger, (semantic) version of the supervenience relation discussed earlier – the fact that any attempt to explain normative social order *automatically* entails conceptual/linguistic facts about criminality/deviance. Thus, the relationship between normal/legitimate and deviant/criminal polarities turns out to involve far more than an interesting association, for a kind of figure/ground relationship between deviance/criminality and normative order emerges, one where deviance/criminality serves as a *necessary condition* for our understanding of the latter. The conclusion appears unavoidable. One cannot consistently conceive of, or talk about, a consensus view of social order without that also entailing concepts and language involving the pathological, the deviant or the criminal.

If we turn back again to the role criminology plays in theorizing the institutions required to manage departures from consensus, a second key factor in this kind of argument emerges. This derives from the weightings we assign to differing violations of normative consensus. Such weightings appear to be essential to our sense of normative order in that they allow us to make sense of the relative seriousness of various departures from norms and the kinds of sanctions then considered appropriate for such departures. However, whilst there might be ways in which certain acts are perceived as more or less serious departures from normative consensus, there is clearly significant cultural variation in such orderings (Sellin & Wolfgang, 1964). There is, however, arguably one master ratio to such scalings – criminality itself. For though there is no *universal* scale for ordering the seriousness of deviant acts across time and place – slavery might be more or less bad than blasphemy in some societies – one universal social fact does appear to hold. The “more bad” an act is perceived to be, the more prepared any society appears to be to punish the act severely. It is in this sense that criminality seems to anchor our sense of the normative, for it serves as a kind of “zero point” against which other behaviours can be oriented.

Once deviant acts are ordered in terms of this zero point of criminality (however differently construed across diverse societies), we see a further mark of the explanatory power of criminological thinking. This involves a range of predictors of the *kind* of society involved, predictors that can be specifically derived from the kinds of institutions deemed necessary to manage departures from accepted values and standards. Giddens once argued that, “institutions by definition are the more enduring features of social life” (Giddens, 1984, p. 24), and the institutions a society deems to be appropriate for responding to deviance/crime therefore serve to characterize that society in fundamental ways. It is clear, for example, that heavily punitive societies are very different from those that are less so inclined, just as societies prepared to utilize violence as punishment differ fundamentally from those that do not (Brown, 2009; Foucault, 1975). Thus, by obtaining knowledge about the kinds of acts that are punished more or less heavily, or the kinds of *individuals* who are sanctioned more or less severely in any society, we also obtain fundamental ways of understanding how the order in any particular society is realized and maintained.

Social order, rationality and drives¹⁵

As has been suggested, there is arguably a third, less discussed factor that seems to underpin these dual mechanisms of social order, one also suggested by Hobbes’ account. This centres upon our “natural passions” (II, XVII) – the drives that initially striate the primal “state of nature”, which denote disorderly societies and which then contribute to the choices we make in opting for the coercive or consensual forms of social order. For example, a consensual social order may be preferred because its promise of greater equality and justice makes it the more rational choice, one where our drives are suppressed. Or a coercive system of social order may be accepted because more instinctual factors such as being in “awe of a sovereign” (ibid.) or a fear of punishment gain the upper hand. Either way, there are resources provided within criminological thought for understanding both these kinds of motivations that provide a further mark of its explanatory power.

Its contributions here are perhaps most evident in one of the core concerns of the criminological project – understanding how/why the interplay of “natural passions” in urges and drives like jealousy, rage or a lack of sexual control so often culminate in criminality (or conversely the fear of crime). Katz once characterized a central question for criminology in just these terms: “How can people so frequently and easily be both out of control and in control at the same time?” (2001, p. 309). Katz has of course been

15 For example, Sieyes also used the term “sociocracy”, which appears to entail a different, more political science-oriented set of theoretical objectives. Philosophers like Hobbes and more recently, of course, Freud and Nietzsche made liberal use of the concept of drives, but their relationship to emotions has not always been clear. I use the term “drive” to refer to any psychological factor that makes us behave in certain ways. On this basis, emotions represent sufficient, but not necessary, conditions for drives; that is, we may be driven to attack someone because we feel hate. However, drives may also be cognitive: for example, where behaviour is driven by beliefs like optimism bias. I also assume that a drive can operate at a more subdoxastic level than even emotion – as with a sexual urge, or the desire to avoid pain. Thanks to one of the reviewers for helping me clarify this point.

one of the leading criminologists to have stressed the need to understand how fundamental drives like euphoria, sexuality or the “dizziness” of feeling evil (1988) so often produce wrongdoing. The idea that our drives are fundamental to understanding social order is an old one – as Nietzsche once pointed out, “insanity...in groups, parties, nations and epochs is the rule” (1966, aphorism 186)¹⁶ – but it has begun to acquire an increasing respectability within the social sciences. For example, in a series of fascinating examples, the psychologists Kahneman and Tversky (2000) suggested just how far highly non-rational considerations underpin many of our decisions. These provide examples of cognitive drives, like their identification of “optimism bias”, where individuals appear to ignore clear evidence of risk to believe they can succeed in something, or “loss aversion”, where individuals display asymmetric attitudes to gains and losses (such as preferring to avoid *losing* \$100 rather than to take risks in *gaining* \$200). Of course, criminology has no kind of monopoly on invoking irrationality (or emotion) as a determinant of behaviour – aside from Kahneman and Tversky’s work, there are developed studies on the role of emotion and the instincts within other social science disciplines (Barbalet, 1998; De Haan & Loader, 2002; Hochschild, 1979; Katz, 2001; Scheff & Retzinger, 1991). It is more that the tension between irrationally or rationally driven behaviours is one that criminologists regularly need to engage with in explaining departures from social order.

It is also apparent that impulses like anger, trust, sexual attraction, shame and resentment can also be important in explaining adherence to norms as departures from them is a highly plausible one. As Hobbes suggested, our “natural fear” of others can be a strong factor in our decision to delegate power to an assembly – a decision that may make perfect sense in terms of self-preservation. In other words, even though this appears to be counter-intuitive, irrational drives can also produce forms of social order that have a rational basis. Criminology provides a powerful tool for conceptualizations of rationality as a behavioural determinant in this wider sense, that is, as a factor driven by, and operating at, the extremes of human behaviour, most obviously at the extreme of criminal behaviour itself. Indeed, the origins of criminology arguably begin with the attempt to make sense of this kind of trade-off, with the classicist perspectives of Beccaria and Bentham and their view that criminal behaviour is a phenomenon that emerges from free (and rational) choice. This theme has remained central to contemporary positions such as rational choice theory (RCT) and the idea of the “reasoning criminal” (Cornish & Clarke, 1986), which holds that criminals should be treated as consummately rational agents – seizing opportunities whenever they arise, whilst constantly weighing and evaluating the alternatives and the dangers in making the choices they do (Cohen & Felson, 1979). More recent work has attempted to produce subtler versions of this approach that permit emotions and/or irrationality to be more instrumental in the reasoning that produces crime (Walters, 2015): for example, hybrid models of decision-making such as that seen in Lindegaard, Bernasco,, Jacques & Zenebergen’s (2014) study on the role of emotion in robbery.

16 Beyond Good and Evil, Aphorism 186.

The wealth of reflections it offers upon such factors suggest why criminology offers a key “go-to” tool for understanding when rationality acts as a driver of norm violation as much as it does norm preservation, for either we act rationally in our best interest *with no regard to others* (i.e. normlessly or lawlessly) or we act in our best interest with complete deference to others. And where “rational self-interest” is pushed to its extreme, harm to others and social disorder inevitably emerge. It is in the task of deciphering the nature of this constraining (inherently social) continuum that, once again, we find ourselves firmly within the domain of the criminological imagination.

Mechanisms – a criminological social physics and tools for mapping the contemporary social order

As suggested earlier, one of the key virtues of theories within the philosophy of science is that theories that are better at explaining and predicting empirical phenomena are usually regarded as “better” theories. The fact, then, that criminology does not just provide foundational insights into the general mechanisms – ergo physics – of social order but seems able to apply these to specific forms of social order generates the outline of a more developed supervenience argument. This augments the general supervenience of social formations upon social order by identifying a range of higher-order criminological mechanisms (from torture instruments and royal pardons to tribal courts and police forces), which, in maintaining order in a particular society, also influence its character and culture. The late modern social order we now inhabit appears to be particularly well suited to this kind of analysis, for against a backdrop of increased or “over” criminalization (Duff, Farmer, Marshall, Renzo, & Tadros, 2014; Husak, 2008), some have also noted “the centrality of many criminological issues to the social organization, governance and everyday life of contemporary societies” (Garland & Sparks, 2000, p. 191). When combined with a gradual seeping of tools once restricted to the penal and policing domains into the governance of everyday life, it becomes plausible to suggest that understanding the late modern social order becomes far easier when perceived through the lens of key explanatory concepts and constructs found within contemporary criminological thought.

Take, to begin with, some of the most influential frameworks currently utilized by social scientists for interpreting the contemporary world: for example, the “risk” society (Agamben, 2006; Beck, 1992; Mythen, 2014), the “surveillance” society (Bogard, 1996; Lyon, 2006; Marx, G.T. 2016), the “securitized” society (Buzan, Ole & de Wilde, 1998; Hallsworth & Lea, 2011; Schuilenberg, 2015) and the “society of control” (Deleuze, 1992). All of these frameworks depend upon invoking definitively criminological explananda like rule breaking, policing, predictive social control, criminalization, sanction and punitivity. Even more overtly economic or technology-specific periodizations like the “information” or “big data” society also draw upon conceptualizations with a normative-regulatory – i.e. criminological – character: in particular, the role of data/information in the social sorting of individuals into the kinds of “legitimate/illegitimate” or “suspect/non-suspect” social categories familiar to criminologists. Within the contemporary order, to lack access to legitimizing credentials like a passport, a bank account, a mobile phone number or an

adequate approval rating on social media is to raise suspicion and the danger of being profiled in terms of various risk, deviant or even criminal categories. In turn, the detailed links and associations that big data sets now provide make the *generation* of potential deviance/criminality an increasingly common social phenomenon. Thus, an employer's scrutiny of compromising Facebook photos, the drunken Twitter post investigated by police, suspicious behaviours recorded on CCTV and the rejection of a visa application as a result of a teenage caution for marijuana possession have become familiar tropes of our world and indicate the extent to which information is now as much about its policing function as its communication function (Marx, G.T., 2016; Staples, 2013).

We live, then, in a world where demands for authentication and legitimacy constantly confront us. Our capacity to live "normal" lives, indeed our very movement through the social world, is something now circumscribed by the spiralling demands of legitimacy – not just in the new institutional rules around crossing borders (Aas & Bosworth, 2013) or in entering privatized spaces (Ericson & Haggerty, 1997; Mythen, 2014), but even within mundane requirements to open an online account to buy theatre tickets, to enter a passcode to enter an apartment block or have the correct digital footprint to cross a border. In turn, whilst the enhanced role of various security assemblages in shaping what is legitimate or illegitimate may be familiar enough, their transformation into a calculus of governance has been less predictable. The scale of this is often staggering – for enhanced security is not just about risk reduction in an immediate sense, but a constraint that operates across every aspect of life. The emergence of predictive control via the "pre-crime" approach (Zedner, 2007) is just one indicator of this pervasiveness. But a world where citizens are evaluated as much in terms of the criminal potentials of their future as their legitimate actions in the past is not just a world where "crime consciousness comes to be embedded in everyday social life" (Garland & Sparks, 2000, p. 200), it is also one where wide swathes of social explanation now supervene upon criminological explanation.

In such a world, the central social ordering role that surveillance mechanisms have now acquired becomes clearer, for the more "full spectrum" any mechanism within this surveillance assemblage becomes, the easier it is to enforce continuous assessment of legitimacy and conformity by way of governing normative criteria, whether this involves monitoring financial transactions for "suspicious activities", an ESTA validation or the use of tracking software to monitor partner infidelity. A social order dependent upon such universal and instantaneous testing of norm violations is surely a world where the sortal mechanism of criminality (whether actual or potential) has become a central organizing construct – one vastly facilitated by technologies that permit "hyperconnected" continuous control (Deleuze, 1992; McGuire, 2008). In our world, crime is transformed into a form of governance, one that "constitutes a new *raison d'être* for state interventions" (Battersby, 2014). And with that, our status within the Leviathan is eroded from individuals-with-rights into individuals-who-pose-potential-risks and the citizen is transformed into a new civic category – the citizen-criminal. In such a world, the criminological imagination can no longer be treated as a mere adjunct to other social sciences. Rather, it becomes an essential tool for making sense of contemporary social order.

Conclusion

In this time of crisis and challenge for the social sciences – especially in relation to their perceived utility – it is surely an important methodological requirement to better understand how they are interrelated if we are to better understand their collective function as science. But this raises new and provocative questions about the status of criminology. For some, the conclusions about its scientific status have been pessimistic. For example, Garland and Sparks have readily acknowledged the role of crime as a central and pervasive analytic theme in disciplines as diverse as “feminism, cultural studies, economics...political science, risk analysis (and) social theory in all its forms” (2000, p. 201), just as they have conceded that criminology serves as a “focal point for most of the intellectual currents of the past 30 years” (p. 193). But they also seem to lose their nerve and read this negatively, as implying a kind of erosion in the authority of criminology, one where it “can no longer hope to dominate the ways in which ...(such themes)...are analysed” (p. 201). In this discussion I have argued for a converse conclusion, one where the central relevance of criminological thought to contemporary social life indicates its basicness as an explanatory resource, not its marginalization.

At the very least, there seems good evidence to suggest that criminology played a far more central role within the genesis of the social sciences than has usually been granted. But there may also be plausible reasons for saying more, for with closer scrutiny it appears that criminological tools may provide key resources for understanding what is perhaps *the* foundational question within social science – the mechanisms behind social order, whether these emerge through coercion or by consensus. If, as early social scientists imagined, a viable social science must involve a viable social physics, it has become increasingly apparent that this cannot depend upon mathematical models involving frequencies or quantities alone. Rather, a truly “social” physics must reflect *all* the forces that contribute to, maintain or disrupt social order, even if (or perhaps because?) these lack clear metrics at present.

It has not been the purpose of this discussion to exhaustively characterize the precise dynamics of how such a social physics might operate, nor could it be. This is clearly a much larger project than what is possible here. Rather, the idea has been merely to suggest some reasons why criminology appears ideally placed to assist in mapping some of the key ordering forces of any such physics – the primal conditions of what is socially tolerated, the drives and motivations that lead individuals to violate such rules and the retributions that result. Understanding the predictive-explanatory implications for social science of this constitutes one stage of such a project. Beginning to outline some of the key supervenience relations between socio-economic relations and criminological tools and concepts is another. There is some distance to go in this project, but, as the progress of natural science has taught us, we cannot begin to understand the laws governing any range of phenomena until we properly recognize the forces upon which they supervene.

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