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RESEARCH ARTICLE

Rules, perception and emotion: When do institutions determine behaviour?

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Abstract

This paper seeks to answer the question of what psychological preconditions must exist for institutions to determine behaviour and order our societies. We defend the notion that institutional theory may gain from such a contribution. We introduce a new theory of the mind as a network structure within which the psychological process operates to integrate insights from cognitive and affective psychology into institutional theory. We discover that institutions must be expressed as *rules* in mental networks which guide thinking and behaviour, be embedded within a cognitive apparatus such that they are called to mind by *perception* to so guide thinking and behaviour and be anchored to *emotion* such that they are endowed with urgency in order for them to have a hold on individual behaviour. From this theory we derive definite predictions, as well as policy insights.

Keywords: institutions; behaviour; rules; perception; emotions; society

Introduction: when do institutions determine behaviour?

Institutional theory has made great advances in explaining how our societies organise themselves on the basis of rules which have emerged from an evolutionary process of variation, selection and retention across the population (Hodgson and Knudsen, 2010). One remaining lacuna, however, is the lack of a compelling psychological theory of exactly how and why institutions have such a hold on behaviour that they become rules by which our society may be ordered. Institutional theory tends to make use of rational choice theory to see institutions as the outcomes of a strategic game (Coase, 1937, 1984; Hindriks and Guala, 2015; North, 1990, 1991, Ostrom, 1990, 2000; Ostrom and Basurto, 2011; Williamson, 1975, 1979, 1985, 2002) or as grounded in the habit psychology proposed by the American pragmatic psychologists (Hodgson, 2010; Hodgson and Knudsen, 2010), or makes direct use of cognitive psychological views (Dopfer, 2004; Dopfer and Potts, 2008; Dopfer *et al.*, 2004). The first approach tends to impose unrealistic assumptions on the human ability to surveil, remember and punish transgressors (Seabright, 2004), while the latter two tend toward a computational, relatively cognitivist view that tends to lack motivation and urgency. Carsten Herrmann-Pillath (2017) has argued, extending Aoki's (2015) gentle critique of Hindriks and Guala (2015), that there is a case to be made for improving our understanding of how institutions have force of direction over our behaviour in their own right rather than deriving it from some external incentive structure in a strategic setting alone. Here we seek to understand how it might be that institutions, rather than being that which we are incentivised to follow, are internal cognitive objects which *direct* us to behave in certain ways. We seek, in a sense, to extend the fundamental basis in cognitive and affective science of arguments made by Aoki (2011, 2015) and Searle (2005, 2015) that we must understand how institutions attain their hold over behaviour in their own right.

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The purpose of this paper is to propose a theory of the psychological predicates, the necessary conditions, for institutions to determine behaviour. We will draw on a new view of the psychological process as operating within and upon mental networks and use this to integrate some modern cognitive and affective psychology into institutional theory to explain the predicates of behaviour that are consonant with institutions. We will also consider the practical value of this theory for explaining the conditions under which institutions may have sufficient hold on the mind and behaviour as to serve to order society.

We will begin by considering the major currents of thought in the literature of institutional theory as it stands, and what they gain for us in terms of insight. We will then introduce a theory of the mind as a network within which the psychological process operates. This will allow us to integrate perspectives on cognitive and affective psychology into institutional theory that help to establish the necessary conditions for institutions to determine behaviour. We will finally consider some practical matters of phenomena that our theory predicts and recommendations that it offers policy.

Major currents in institutional theory and remaining lacunae

The major currents of thought in institutional theory, of which there are arguably four, can all be seen as developments of the thinking of five men in particular – Thorstein Veblen, Walton Hamilton, John Commons, Wesley Mitchell and Clarence Ayres. We might call these men 'the originals'. Each of the originals developed the idea, which was first proposed by Veblen, that we must seek to understand society as ordered by *rules* for interaction (behaviour) that have emerged from an evolutionary process. Veblen (1898, 1899, 1904, 1914) applied this to arrive at original studies of, in particular, the rules by which individuals were guided in the socioeconomic activities of consumption and labour. Walton Hamilton (1919) applied it to thinking about the principles that guide and coordinate economic interaction and exchange in general. John Commons (1924, 1931, 1934) applied it to study the emergence of the laws that guided the public as to the bounds of acceptable behaviour in society and economy. Wesley Mitchell (1913) applied it to study how rules acting in concert across society might cause business cycle fluctuations. Clarence Ayres (1944, 1953) used it to understand how we learn to interact with and use new technologies (see also Lawson, 2015a). Geoff Hodgson (2004) has recounted how this sort of thinking fell into relative disuse after the Second World War but enjoyed a resurgence in the work of the New Institutional Economists, in particular Oliver Williamson and Ronald Coase, and later Elinor Ostrom and Douglass North.

Oliver Williamson (1975, 1979, 1985, 2002), seeking to make sense of the ways in which firms organise themselves to solve the problem of transaction costs discovered by Coase (1937), proposed that individuals would rationally commit to acting out the provisions of institutions for productive behaviour. For Williamson and also for Coase (1937, 1984), adherence to institutions and their emergence as rules for behaviour arose from rational considerations in what we now call a 'strategic' setting. Adherence to institutions is seen here as a rational response to transaction costs created by uncertainty, incomplete contracts and opportunism. Institutions in this view establish hierarchies of obedience that, as rational responses to transaction costs, make adherence to rules net-beneficial.

Elinor Ostrom (1990, 2000) (see also Ostrom and Basurto, 2011) would develop this view while considering the problem presented to economic theory by the empirically observed government of the use of common goods (rival but non-excludable) by mutually consenting individuals. She proposed that this was a rational solution to the repeated prisoner's dilemma game of cooperation via the famous 'folk theorem', but also acknowledged a more nuanced evolutionary view of cooperation advanced by Axelrod (1984 and Axelrod and Hamilton, 1981) that cooperative strategies were simply more evolutionarily 'fit' in terms of leading to a greater accumulation of resources and survival as reflected in the payoffs of repeated prisoner's dilemma games. A still more general view that approaches later perspectives was proposed by Douglass North (1990, 1991), who argued that the whole historical development of economic systems might be understood to be tied to the gradual emergence of mutually beneficial cognitive rules for socioeconomic interaction. Institutions in this

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variant of the New Institutional Economics perspective are rules that, over time, are discovered to be mutually beneficial rules for promoting cooperation.

A more philosophical and sociological view of institutions is provided by the Cambridge Social Ontologists, who have emerged around the debate between John Searle and Tony Lawson. Both scholars agree that institutions create social 'positions', which individuals occupy and which are associated with certain rights, obligations and empowerments, but which differ somewhat in their view of the origin of these positions. Searle (2005, 2010, 2015) sees institutions as emergent from statements which are both *descriptive* and *declarative*: '*i* is *j* in situation *k*', where '*j*' is some social position associated with rights, obligations and empowerments to act. Lawson (2012, 2015b, 2016) on the other hand sees these social positions as emergent from a long process of social interaction that establishes the bounds of socially acceptable behaviour. Because these positions are created by society, individuals are compelled by social opprobrium to abide by the rights, obligations and empowerments afforded to the persons who occupy them.

Hodgson (1998, 2010) (and later Hodgson and Knudsen, 2010) provides a view of institutions that (arguably) remains the most 'faithful' to the 'originals' while acknowledging the influence and ideas of the New Institutional Economics. This view is at the core of what we might call institutional theory, which is (somewhat) distinct from New Institutional Economics. Following the pragmatic philosophy we know to have influenced Veblen especially, Hodgson (2010) has sought to ground institutional theory in the habit psychology of the American pragmatic philosopher and psychologist William James. Institutions are here seen as originating in habits, which are general tendencies toward particular thought patterns and behaviour of the individual that evolve and develop in response to their interaction with the environment. The habits of the individual develop from an instinctual basis, which is shaped by aeons of biological evolution. Communicated by word and deed to others, these guides of thought and behaviour are gradually selected by the process of evolution in society and are retained as institutions at the level of society where they serve to order interaction in socioeconomic systems.

A more 'cognitivist' approach has been adopted by the 'Brisbane School' of evolutionary/institutional economics. Dopfer, Foster and Potts (2004) (and later Dopfer and Potts, 2008) build on Hayek's (1988) vision of the socioeconomic system to argue that institutions originate in cognitive rules for interpreting and acting in the world (Dopfer, 2004). After they are originated by individuals these rules have greater or lesser success in the evolutionary process within socioeconomic systems in terms of being adopted by more or fewer people. As they are selected and retained as institutions they become 'meso-rules', which serve to characterise the 'meso-populations' that apply them as institutions for understanding the world and how to act in it. These meso-rules serve to structure and coordinate interaction at the macroscopic scale of society.

Each of these views has added significantly to our understanding of society and how socioeconomic interactions are coordinated. But there remains yet further scope for developing institutional theory, in particular, in the provision of a more compelling theory of why institutions have a hold on the human mind and, subsequently, our behaviour, in light of recent findings in cognitive and affective psychology. New Institutional Economics is likely misconstrued if thought of as a theory of the exact process of how institutions come to exist and have a hold on behaviour. It is probably best thought of as a useful and valuable demonstration of how institutions can be understood to have emerged from evolutionary 'tournaments' or 'contests' in which enforcing adherence to them has been mutually beneficial in terms of accumulating resources. What was especially valuable was the demonstration of the argument of the great anarchist and biologist Kropotkin (1902) that evolution *selects for cooperation* in the effort to accumulate resources which is backed by the threat of retaliation, not for sheer brutality. However, as Paul Seabright (2004) has discussed, we must recognise that the limitations of game theory apply here – humans do have not the ability to observe, remember, or punish transgressions as would be required in general by theories of how institutions actually emerge.

Cambridge Social Ontology, Institutional Theory and the Brisbane School, on the other hand, provide compelling reasons for why institutions as concepts that have a hold on mind and behaviour come to be selected and retained as rules for interpreting the world and directions for how to act

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in it. Based (in the case of Cambridge Social Ontology) in sociology or the theory of social action, pragmatic psychology (in the case of Institutional Theory) and cognitive psychology (in the case of the Brisbane School), they have a more compelling grounding as a theory of human behaviour and the coordination thereof. However, the hold of these rules and habits on the mind is, essentially, assumed, and their hold on behaviour with it. This is troublesome since, as Jonathan Haidt (2012) and Joseph LeDoux (1996) have remarked, cognitive psychology (as can be represented, roughly, by the contributions of Newell, 1990; Pinker, 1999; and Simon, 1947, 1956, 1968, 1976, 1978a, 1978b) can seem a little 'bloodless', insofar as it tends to focus on the mind as little more than an information processor. This is to be expected, given its origins as a theory of the mind as a computational system (von Neumann, 1958). The idea of the mind as a purely computational system, though, is hard to maintain when considering the role of *urgencies* that motivate behaviour (one important exception to this is Simon, 1967). We now know that motivation is critical for understanding behaviour both neurologically *and* psychologically (see Haidt, 2001, 2012; LeDoux 1996; Panksepp 1998; Peterson, 1999; Sapolsky, 2017; and, of course, Goleman 1996). There is, therefore, scope, indeed necessity, for us to develop a vision of the psychological predicates for behaviour to be determined by institutions that, *inter alia*, recognises the necessity of urgency and motivation.

An architecture of the mind

We can use a new theory of the mind as a network structure within which the psychological process operates (that outlined in Markey-Towler, 2018) to develop a theory of the psychological predicates for institutions to determine behaviour. This theory extends and formalises the perspective developed by Peter Earl (1983; 1986a, 1986b, 1990, 1995, 2015, 2017) of the Brisbane School of evolutionary/institutional economics, which is something of a fusion of George Kelly's personal construct psychology, Herbert Simon's cognitive psychology and Leon Festinger's cognitive dissonance theory. In this network structure, nodes are the mind's conceptual representations of objects and events in the world: people, oneself, the various actions available and taken, motivations, aspects of the environment – internal as well as external (Simon 1956) – various signals and accoutrements of office or station. Base-level impressions of objects and events and higher-order abstractions of categories of these objects and events coexist within this set of nodes. The connections in mental networks represent the relations we construe to exist between these various objects and events in our world, including connections between basic impressions of objects and events and higher-order abstractions that serve to categorise them. Mental networks thus constitute the 'map' (Hayek, 1952) or 'image' (Boulding, 1956), or our 'personal construction of reality' (Kelly, 1963) that serves to guide our thinking and cognitive processes in interpreting the world and how we ought to act in it, and, as in part a system of classification, takes on a somewhat hierarchical character (Hayek, 1952; Luria, 1973; Pinker, 1999).

Information (in the Shannonian, 1948a, 1948b sense) that presents itself to our sensory organs must be transformed into conceptual representations of that information in the mind. This is the role of *perception*, which maps information in the world into percepts of the objects and events in our environment within our mental networks. Perception is how we (literally) 'see' and provides the interface between the world and our personal knowledge of it (Merleau-Ponty, 1945, 1948; Polanyi, 1958). In the process of *analysis*, we connect the various objects and events perceived within our environment together based on the relations we construe between them within our mental networks. We apply our 'map' of reality to form a 'model' of our environment – classifying our impressions of the objects and events in the environment by connecting them with higher-order categorisations and forming assessments of the relations between them (Hayek, 1952). We consciously apply either reasoning *or* rules (see chapter 4 of Markey-Towler, 2018) contained within our mental networks to interpreting the relations of objects and events in our environment.

Decision and behaviour are based on this knowledge of the environment. Within our conscious or subconscious knowledge of our environment is contained knowledge of *how* and *why* to act in

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particular manners. Here we find an application of rational choice theory to be useful: we do that which we *think* to be the best possible thing out of all feasible courses of action. But note a subtlety that is crucial: we behave in what we *think* to be the best possible way *given* our knowledge of how and why to act as applied to our perception of the environment. What might be 'best' to our mindset at any given time might be actually whatever satisfies a *procedurally* rational criterion rather than a substantively rational criterion (Simon, 1976, 1978a, 1978b) such as satisficing: 'pick the first alternative to present itself which meets all requirements'. Using this theory, we may now establish the necessary conditions for institutions to determine behaviour: and in so doing incorporate a range of cognitive and affective psychology within institutional theory and thus expand its explanatory and predictive power.

First, we must define the nature of an institution as we consider it here. We define institutions to be those rules generally accepted across society that specify the proper mode of action to be taken by an individual in a given socioeconomic environment. We might even say, following the Brisbane school of thought, that institutions are the meso-rules that coordinate interaction at the macroscopic scale of society. Institutions in this definition are akin to social norms, and this definition nests both Searle and Lawson's definitions as being more specified as to the nature of the socioeconomic environment in which the individual acts. With this definition we may place institutions in relation to the mind and psychological process, and consider how they may gain the ability to determine behaviour in their own right.

Rules: how to behave

At the level of the individual, institutions are rules for interpreting the world and how to act in it. They *determine* behaviour insofar as they proscribe us from acting but in consonance with them. The precondition for this to be the case is that our preferences must be 'rule-trivial' – i.e. that they be decided by the proscription of a rule for or against some behaviour conditional on whether or not it passes the requirements imposed by that rule. If preferences are rule-trivial and certain technical conditions hold, then behaviour will be decided by the outcomes of that rule as applied to the environment (see Markey-Towler, 2018: chapter 4, section 2). Rules are not necessarily rule-trivial, in general they are more akin to habits, providing a *tendency* toward behaviour that is not necessarily sufficient to determine preferences. Thus, *mutatis mutandis*, institutions become habits, rules for interpreting the world and how to act in it, and provide a *tendency* toward a particular behaviour, but they will not *determine* behaviour unless, in a given situation, they decide preferences that are rule-trivial.

A necessary condition for this to be possible is, first, that the institution actually be internalised within the individual such that it may guide thought about the world and behaviour. The rule structure of the institution, its 'instructions', as it were, on how to interpret the world and how to act in it, must be encoded within the individual's mental network. Unless this is the case, the institution cannot be applied in the process of analysis to interpreting the individual's environment and appropriate behaviour in response to it. This requires that the rule, the institution, is either an innate cognitive structure (a Kantian, 1781, *a priori* structure), or a developed cognitive structure (Piaget, 1923), which was presented to the individual at some point in the past and incorporated in the mind as a rule for interpreting the world either consciously or subconsciously (Newman, 1870).

Thus the first precondition for an institution to determine behaviour is a simple cognitive one:

- The institution must be encoded as a rule structure for processing information in the world within mental networks.

This serves to ground institutional theory firmly in cognitive psychology, showing how institutions operate through the powerful psychology of Herbert Simon (1947, 1956, 1968, 1976, 1978a, 1978b), Alan Newell (1990) and von Neumann (1958) which, in the modern day, is advanced by Gerd Gigerenzer (1999) (see also Gigerenzer and Goldstein, 1996) and Steven Pinker (1999). Institutions as rules for how to behave must acquire a place in our mind before they can determine our behaviour

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in their own right. How this comes to pass has been studied at some length in Markey-Towler (forthcoming), extending the evolutionary insights of Institutional Theory and the Brisbane School and fusing them with those of Almudi *et al.* (2017) to show how institutions as rules for interpreting the world (and how to behave in it) are propagated by the selection and retention of ideas as institutions in the competition of ideas in the public sphere.

Herein too is the primary source of behavioural heterogeneity across the population. In the first instance, a given institution is not necessarily *relevant* across the population – many institutions serve to determine acceptable behaviour in socioeconomic environments people will never find themselves within. Further, any given institution does not necessarily *apply* across the population – many institutions create social positions in socioeconomic environments that people will never occupy. But most importantly, not all institutions will be *accepted* across the population in such a form as would cause them to determine behaviour. Because they might be incorporated in the mind in only a modified form, or even entirely rejected, there will be heterogeneity in how individuals respond to socioeconomic environments in which institutions ought to guide socioeconomic interaction.

Perception: when the rules apply

There is, however, a deeper cognitive predicate for institutions to determine behaviour. Decisions proceed on the basis of analysis, and an institution must actually be *applied* to interpreting it and how to act in it before the institution may determine our behaviour. If it is necessary for the rule structure of the institution to be *applied* to the information perceived in the environments in which it ought to be applied it is then necessary for the objects and events related together by the rule structure of the institution to be presented to the mind by perception of those environments.

This is not particularly straightforward, for the objects and events related together by institutions will not necessarily present themselves in the external environment for us to merely 'connect up the dots' of appropriate behaviour, as it were. The mental operations by which institutions interpret our world and how to behave in it will, in principle, require greater internal abstraction than external sense-data will supply. For instance, the 'social positions' created by institutions as defined by Searle and Lawson in any given environment, which are associated with obligations and empowerments to act in certain ways, are abstract concepts that must be called to mind by perception. There are symbols and signifiers of the social position of chief executive officer or the Crown in the environment, but they are symbols and signifiers of an abstract social position created by an institution. That category (a social position) of objects and events in the environment (people and their bearing and their accoutrements), and further events that might take place (the actions they might take), must be perceived before the environment can be classified in a particular manner by the rule structure of an institution.

The higher-order abstract categorisations of external objects and events in the environment that institutions as mental rules connect together must therefore be called to mind by perception upon the realisation of environments in which they ought to apply. That is (as Egon Brunswik, 1943, might have put it), upon perceiving certain objects and events in the environment, perception must call to mind their antecedent categorisations within the rule structures of institutions by which appropriate actions on the part of the individual as defined by those institutions may be identified. This is entirely possible due to a phenomenon known as 'chains' in perception, whereby the perception of certain objects or events will cause the perception of others provided they are linked by sufficiently strong connections in the mind (see Markey-Towler, 2018: Chapter 7). As Hume (1777) said, thoughts introduce each other with a certain degree of method and regularity that is given by the structure of our memory. This is underlain by certain neurological traits: electrical signals pass along synaptic connections between neurons provided that their charge is sufficiently strong, a process both Hayek (1952) and Luria (1973) argued to underlie categorisation at ever higher levels of abstraction. The famous investigations of Luria, in particular of the higher cortical functions, suggest here that the higher-order and more abstract the categorisations related by an institution are (i.e. the more 'removed' they are in

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mental networks from basic impressions of objects and events in the environment), the less they are applied in an automated, even subconscious manner.

We may say then that in order for institutions to determine behaviour, a sufficiently developed perceptual apparatus must exist within our mental networks to call to mind the relevant institutions in all environments we might face. The second precondition we might formulate for institutions to determine behaviour then is:

- There must be a perceptual apparatus within mental networks sufficiently extensive and subtle for the elements of institutions to be perceived in situations where it is appropriate for them to guide thinking about the environment and behaviour in it.

This grounds institutional theory more firmly in the cognitive science of perception (Eagleman, 2011; Newell, 1990; Pinker, 1999) and alerts us to an important aspect of institutional theory. This perceptual apparatus in mental networks is likely to be contained significantly in the realm of the *subconscious* mind. Our sensory cortex, where our sense-data are processed for referral to memory in the hippocampus and higher-level processing in the cerebral cortex, is within a region of the brain that is prior to the regions associated with the higher cortical functions from whence consciousness is believed to arise (Luria, 1973). In fact, the perceptual apparatus within our mental networks, and thus the process whereby institutions are called to mind to guide thought and behaviour, cannot *but* be largely subconscious. The set of possible environments we might face is too vast, too individuated, too subtle and too complex for the perceptual apparatus to *not* be automated and subconscious in large part (Heiner, 1983, 1985). For this reason this perceptual apparatus is also likely to be tacit knowledge (Polanyi, 1962), for such knowledge as exactly when an institution ought to be applied to guiding thought and behaviour will be difficult to express linguistically – it's something we 'just know', but can't express.

This leads to an intriguing likelihood – our minds know when institutions ought to apply and guide our thinking about world and behaviour in a way that we do not consciously know and cannot express. In a sense, we know more about the institutional structure of our society than we know we 'know', and it is more complex than we can actually vocalise. We know that this is possible because of the developmental psychology of how our schema for interpreting the world grow. These schemata grow and extend progressively as we question and experiment with our world and observe the reactions of it and others within it to our behaviour (Dewey, 1910; Piaget, 1923), and our schema become increasingly automated and subconscious. Developmental psychology would suggest however that the perceptual apparatus required for institutions to be applied, and to determine our behaviour, can only be acquired over a long period of experimentation. It would suggest that in the process of socialisation, we learn about the institutions that order our society from the actions and interactions of others in response to our own, but we also learn *when* those institutions are to be applied. Over time, as a result, we develop an automatic and subconscious sensibility about what is the appropriate institution to apply to interpreting the world and how to act in it relative to whatever environment we are in.

Emotion: why the rules are followed

The cognitive psychology of institutions that we have developed thus far still lacks a certain sense of *urgency*. We have established that an institution must be expressed as a rule within mental networks and that it must sit within a further web of perceptual apparatus which calls those rules to mind when appropriate situations are recognised for it to determine our behaviour. But the question that still remains is: under what conditions will institutions have a sufficient hold on our preferences for those preferences to be rule-trivial, guided by the dictates of that institution as a rule for thought and behaviour? It is necessary for those institutions to *urge* us toward this behaviour or that behaviour when we interact in society.

George Kelly (1963) and especially his student Deniss Hinkle (1965) theorised, and found empirically, that personal constructs of reality (mental networks) are arranged hierarchically around an

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axiomatic 'core' that anchors value judgements within the way the individual thinks. Therefore, personal constructs are anchored by what we might think of as a moral core, which provides the ultimate urgency of thinking about behaviour. This moral core provides the axiomatic foundation for value judgements about the world and how to act in it and thereby creates urgency toward modes of action consonant with that foundation. Reflecting these findings, we can demonstrate (under reasonable technical conditions – see Markey-Towler, 2018: Chapter 4, Section 4) Nietzsche's (1901) argument that true nihilism is impossible if one is to act in the world and that *some* form of moral beliefs must always exist. Unless the motivational complexes within our mental networks are activated when considering how to act in any given environment then we cannot act, because our preferences cannot be guided. Of course, motivational complexes that we might think of as moral cores are not simple, and have multifaceted hierarchical structures (Maslow, 1943), such that the exact manner of their activation can have significant effects on the mode of behaviour they endow with urgency, even to the extent of realised behaviour *contradicting* non-activated parts of these complexes.

We know these findings are also reflected in neurophysiology, for the essential neural basis for our emotions involves our hypothalamus and amygdala (LeDoux 1996; Panksepp, 1998; Sapolsky 2017), which sit at the base of our brain close to the brain stem whence sense-data from our body enters the brain. Even the data from our eyes and ears is routed by a secondary circuit to our emotional core before it is passed to our sensory cortex (as discovered by Joseph LeDoux 1996: 156–174). Emotion, thus the most potent form of motivation that causes us to react viscerally and powerfully to the environment (Elster, 1998; Loewenstein 1996, 2000), actually *precedes* even what we *see* (as Goleman, 1996, put it well). Indeed, unless those transformed data reach our prefrontal cortex (the seat of 'reasoning') before they reach the motor cortex, it can be very difficult to prevent ourselves from acting entirely impulsively and even against our own interest (Baumeister and Tierney, 2011; Baumeister *et al.*,1998; Metcalfe and Mischel, 1999; Mischel, 2014).

This suggests that no institution can have a hold on our mind and determine our behaviour unless it overlaps with our motivational complexes, especially emotion. Unless it is *anchored* to some urgent emotion, the dictates of an institution about our behaviour cannot actually motivate us to this action or that; it will be inert. The third precondition we might formulate for institutions to determine behaviour then is:

- The institution must be sufficiently *anchored* (contain connections) to an emotion visceral enough to provide the institution with urgency, the individual with motivation, and thus determine preferences.

This grounds institutional theory firmly in affective neuroscience and psychology and incorporates in particular the insights of Jonathan Haidt (2001, 2012) on the basis of moral psychology in the emotions. Haidt has discovered, consistent with our understanding of neurophysiology, that the moral core on which the rules which guide our behaviour are built are founded on *emotion* and visceral reaction. In a sense, our action is ultimately founded not on consequentialist reasoning, but on deontological reaction, so that consequentialist reasoning gains its hold over behaviour only insofar as it has a foundation within deontological reaction.

Now this is a more contentious claim, because it holds only under certain technical conditions (again, see Markey-Towler, 2018: Chapter 4, Section 4) which are, in principle, verifiable empirically. The behaviour observed when these conditions do not hold would be entirely reflexive. No emotional states would be activated; there would be a simple transformation of sense-data into motor activity. There is evidence to support the notion that such conditions do exist – the reticular system, for instance, regulates cortical tone and circadian rhythms with a high degree of automation free of the activation of any emotional states (Luria, 1973). Many finer motor activities and adjustments involved in implementing a particular course of action attain a high degree of automation, also free of the activation of any emotional states (Eagleman, 2011).

However, when considering action on the order of social behaviour however, reflex alone seems insufficient from a psychological and neurological perspective for institutions to gain their hold

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over behaviour given the nature of the decision, which must include fairly involved sensory processing and memory. It is not necessarily the case that the emotional state necessary for the institution to gain urgency will be of full intensity. Indeed, there are gradations in the intensity of emotional states, and it is by no means the case that only the most intense activations of 'fear' or 'rage', or what Panksepp (1998) calls 'seeking' (anticipations of 'reward'), are necessary to provide institutions with the degree of urgency necessary for them to guide behaviour. For the initial decision to act in consonance with institutions at least, we would expect (and this is in principle empirically testable) it to be necessary for at least *some* (potentially low-intensity) emotional state to be activated that endows the institution with an urge to comply with it.

Incorporating this notion of urgency and motivation within our theory means we also allow for a broad range of motivational psychology to be incorporated into institutional theory. Freudian drive theory (Freud, 1917, 1930), Jungian archetypal theory (Jung, 1964, 1968), Maslowian hierarchical necessity theory (Maslow, 1943), in which emotions arise from the relation of the world to personal objectives, Simon's cognitivist theory of emotion (Simon, 1967) and Nietzsche's views on nihilism (Nietzsche, 1901) all inform us of the particular manner in which emotions endow particular modes of behaviour with urgency. We have, of course, known in economics of the potency of emotions for some time (Elster 1998; Loewenstein, 1996, 2000), but this thinking goes beyond the relatively 'transactional' view of them that we have taken thus far as merely enhancing or degrading utility. Here emotions provide the very urgency of preferences themselves by providing a visceral reaction for or against some behaviour and interaction in society. They affect a qualitative reaction rather than a smooth quantitative trade-off.

There are good evolutionary reasons for emotions to develop and become involved in the determination of our behaviour if they lend this urgency to our interpretation of the world and how to act in it. If emotions urge us to action, and actions are necessary for us to accumulate resources necessary for greater survival and procreation, then they interact with selection pressures exerted at all levels of existence from the biological to the social. Darwin began to hypothesise such a relationship in his *Expression of the Emotions in Man and Animals* (1872), linking the activation of emotional states with behaviour that contributed to the process of selection by survival (natural selection) or procreation (sexual selection), which he had proposed in *The Origin of Species* (1859). More recently it has almost become axiomatic in works on affective neuroscience and neurobiology such as those of Panksepp (1998) and Sapolsky (2017) that the link established between the neural correlates of emotions and the urgency they create toward particular modes of behaviour in the physical and social worlds exists in an evolutionary system. Those genes which establish a proclivity toward the activation of emotions that support behaviours promoting greater survival and successful procreation contribute to the survival of genes within individuals, individuals within groups and groups themselves.

This is the case, *ipso facto*, for behaviour that corresponds to institutions. We know that, as a rule (there are, as in all evolutionary theory, exceptions), adhering to generally accepted institutions enhances the survival and procreation of the individual within a group – social exclusion exacts a terrible cost. We also know particularly from the work of Elinor Ostrom and Douglass North that adhering to particular institutions which promote cooperation enhances the survival and procreation of the group that so adheres to them by enhancing their ability to accumulate resources. Emotions which give urgency to institutions that promote cooperation encourage the selection of the interactors which so behave, and thus does evolution reward the activation of such emotions, or at least the genetic proclivity toward them in a co-evolutionary process.

Reason: legitimising a fait accompli

Notice that among the three conditions necessary (and, incidentally, sufficient) for institutions to effect thinking and determine behaviour, reason as the logical construction of consequentialist *ratio decidendi* (Elster, 2009) is quite absent. Psychologically and neurologically speaking, the individual has no need of anything like rational cost–benefit analysis for institutions to give the rule for behaviour to follow. There is good reason for this, and it aligns well with psychological theory as well as

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neurophysiology. The finding of reasons to justify behaviour is quite superfluous for rules (thus institutions) to determine behaviour, for they cannot provide such urgency as a visceral emotion or other motivational complex provides.

In fact, what our theory would suggest, once we account for the role of cognitive dissonance (Festinger, 1957) in the evolution of mental networks, is that reason emerges only in the presence of action guided by institutions. When we act, our environment will present new connections to our mind between objects and events in our environment, and those that are more consonant with our mindset at that moment are more likely to be incorporated in the mind *inter alia* (see Markey-Towler, 2018: Chapters 3 and 7). So those reasons for acting in a particular manner that are presented to the mind, and reinforce our belief that a chosen course of action is correct are more likely to be incorporated in the mind, unless the outcomes that we are experiencing at the time are nearly catastrophic. Those reasons affirming the urgencies of an institution toward a particular behaviour that then correlates with positive outcomes are more likely to be incorporated in the mind. In a sense, our consequential reasoning is *posterior* to, and builds upon, our basic deontology.

This makes institutional theory yet more consonant again with psychology and neurophysiology. Our theory aligns well with Jonathan Haidt's findings in moral psychology (Haidt, 2012, 2001) as well as with the clinical observations of Jordan Peterson (Peterson, 1999) that 'in the beginning' there is the deontologically determined act, and later consequentialist reasoning is built to give it legitimacy. This also aligns with our neurological and psychological knowledge that reasoning is *anterior* to emotions-based rule-following and serves as a restraint, a 'brake' to deter impulsive behaviour when it is not providing justification for that behaviour, by reminding the individual of negative consequences that have attended upon it in the past (Baumeister and Tierney, 2011; Baumeister *et al.*, 1998; Mischel 2014; Metcalfe and Mischel, 1999; Sapolsky 2017; and of course Goleman, 1996). The hypothalamus and amygdala (the 'seat' of emotion) are anterior to our prefrontal cortex (the 'seat' of our reasoning about the future) and our reasoning must therefore neurologically proceed on the basis of our emotion.

Contrary to what we might believe if we (likely) misconstrue New Institutional Economics as a theory of behaviour, we don't act based on reason and rationality about the future consequences of our actions. We act in the world based on our rules, perception and emotions and *then* discover rationalisations for (sometimes against) such action. If we discover that rationalisations against such action are sufficiently consonant with our emotional experience, we have to act again to discover if some other candidate institution might be submitted to that has less negative outcomes as a guide for behaviour and interaction in society. We are, as Kelly (1963) theorised, somewhat analogous to scientists – testing whether the rules of our behaviour are functional or not, building schemas of rationalisation from the experience, and suffering from neuroses when they are not.

Predictions and policy insights

Addressing this final lacuna in institutional theory has a marked impact on our ability to predict how institutions will affect the ordering of our societies. Not only do we now understand the process by which they spread between individuals and across societies. We also know the conditions under which they will serve to determine behaviour and order society. To recapitulate, in order for an institution to determine behaviour, it must be the case that:

- The institution is encoded as a rule structure for processing information in the world within mental networks.
- There exists a perceptual apparatus within mental networks sufficiently extensive and subtle for the elements of an institution to be perceived in situations where it is appropriate for it to guide thinking about the environment and behaviour in it.
- The institution is sufficiently *anchored* (contains connections) to an emotion visceral enough to provide the institution with urgency and the individual with motivation, and thus determine preferences.

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Reasoning and rationality are quite superfluous and secondary here. Reasons serve for the most part to justify existing institutions and actions taken in consonance with them unless they lead to catastrophic consequences. This theory makes some definite predictions, and also offers some insights for policymakers.

Predictions: when institutions will serve to order society

This theory speaks to the necessary (and sufficient) conditions for institutions to determine behaviour. If all three conditions above are satisfied, the institution to which they apply will determine behaviour. If *any* of them do not, it will not.

This gives us a definite and powerful prediction. Unless an institution is embedded as a rule structure within mental networks, unless it is embedded within a sufficiently extensive and subtle perceptual apparatus that will apply it to environments in which it ought to guide behaviour, and unless it is anchored to a sufficiently visceral emotion as to determine preferences, it will not be effective. It will be inert. In particular, if it appeals *only* to rational, consequentialist reasoning about costs and benefits, it will be inert; it will not serve to determine behaviour and order society.

Note that this, in some sense, is contrary to what the New Institutional Economics would predict if it is taken on face value. Rational cost–benefit analysis is not enough, and institutions require the input of visceral emotions to have a real hold on our behaviour. It is, as Seabright (2004) argues, difficult to guarantee the conditions under which a cooperative equilibrium will hold in a strategic setting. We need something more to get to a society ordered by institutions. We need emotion, perception and rules in the mind.

We may actually go somewhat further than this and derive a more specific prediction, for instance, with respect to the rule of law. The law sets forth rules about the proper way to behave in society, and who might apply punishment to transgressors thereof (Hart, 1961). We know from the above however that reason alone is insufficient to guarantee adherence to institutions, so the rule of law – the adherence to the institutions given legitimacy by the law – cannot be guaranteed by manipulation of 'trade-offs' alone, by altering the costs and benefits of obeying the law. The economic analysis of crime and of constitutions, for instance (Becker, 1968; Buchanan, 1990), therefore lacks an account of the necessary cognitive and affective aspects of institutions. Our theory suggests that for the law as an institutional structure to determine behaviour requires that the rules it sets forth become embedded in the mental networks of those to whom they apply, that those rules become embedded within a perceptual apparatus sufficiently extensive and subtle for the law to be applied in thinking about the world and how to act in it, and for the law to be anchored to a sufficiently visceral emotion as to deter breaking it.

These are all the traits of a social norm. Social norms embed themselves in the mind and they come to be surrounded by a perceptual apparatus which causes them to be applied in appropriate situations and are anchored to the powerful emotions of fear and dread of social exclusion as an individual's psychology develops toward maturity and socialisation (Piaget, 1923). We can predict, then, that those laws will be more effective, and the rule of those laws more easily secured, where they legitimise extant social norms, extant institutions. Specifically, such laws, we predict, will achieve a far greater rate of adherence, and faster, than other laws. Similarly, we may predict that any law that is *not* accompanied by a substantial effort to promote it as a social norm will be far less likely to achieve the rule of its provisions over behaviour. HLA Hart, the great legal theorist, was approaching this realisation when he argued that some form of extrajudicial 'social pressure' oriented toward establishing compliance with the law as the norm would be necessary for the law to have effect (Hart, 1961).

The predictions of our theory make sense of why, for instance, the British, Australian, New Zealand, Canadian and United States constitutions have such force of power even while the first is almost completely unwritten. These laws are all supported by a (relatively) common institutional matrix, a cognitive and affective structure descended from British political history that has attained its hold over the mind and behaviour over the course of a thousand years of history and innumerable lifetimes of development and socialisation. Our theory explains why constitutions with a shorter history of development (even, for instance, the French constitution) have so much less power that they

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are often rewritten in entirety or have little effective power at all so that the rule of law is little more than the rule of whoever controls the strongest army.

Stepping away from the basic laws, we might also apply our theory to predict the hold of relatively more prosaic laws over our behaviour. Those laws that legitimise social norms (existing institutions), we would predict, will have a greater rate of adherence over a shorter period after their passage than those laws that do not. Murder, for instance, while not uncommon, is a crime that is proscribed not only by law but by a vast literature and cultural apparatus in most cultures, and we would predict therefore less commonly transgressed (when accounting for undiscovered crime) than, say, tax laws, transgressions of which have hardly acquired the taboo of murder and are sometimes even celebrated while they can carry severe penalties.

This is why Suri Ratnapala (2003, 2009) has written of the necessity of an 'institutional matrix' to support the rule of law, especially the rule of constitutions, which form the base of the legal structure. This is also why Jonathan Crowe (2014a; Crowe and Lee, 2015) has written of the necessity of understanding the law as an 'institutional artefact' that creates a deontological obligation to obey it and goes beyond establishing costs and benefits to have a hold on *memory*. Indeed, we are essentially approaching from cognitive and affective psychology a view of the law as an institutional system, which Crowe and Ratnapala have arrived at from legal philosophy and psychology. Law, like any institution, requires a substantial cognitive and affective apparatus to be effective in determining behaviour.

Policy insights: when institutions will serve to order society

Now if we simply extend these predictions and endow them with normative properties we see a range of policy insights emerge from institutional theory, grounded as it now is in cognitive and affective psychology and neuroscience. Policymakers either in business, government or other organisations are tasked with the business of promoting change in the ordering of society. We see here that they are tasked with achieving no small feat – which is perhaps reassuring (Popper, 1945).

Before their desired change may take effect they must first have the ideas that would become institutions selected and retained as such so that individuals carry those institutions as rules for interpreting the world and how to act in it. This is a difficult task of rhetoric and communication, which requires substantial investments of time and effort in campaigns for change in the public sphere (Markey-Towler, forthcoming). Yet this is not the most challenging barrier for the policymaker!

Any individual can *know* an institution, but it is inert unless it is *applied* in the process of thinking about the world and how to behave in it. The policymaker needs be able to replicate something on the order of a developmental psychology to ensure that an adequate cognitive apparatus exists in mental networks for perception to call those rules to mind in appropriate situations to interpret the world and how to act in it. This is an especially difficult task for any policymaker, for it is difficult not to leave 'blind spots' in the perceptual apparatus that would cause the institution not to be called to mind when it ought to be without replicating something like the process of socialisation in development psychology, which can take decades. It is also morally troubling, calling to mind images of test-tube babies and conditioning in Aldous Huxley's *Brave New World* or the brainwashing of *The Manchurian Candidate*. This is therefore probably the most challenging task faced by policymakers.

An institution is still inert, however, unless it is endowed with sufficient urgency to provide the individual with motivation. A policymaker must therefore ensure that any institution is anchored to a visceral emotion. It is foolish for a policymaker to appeal to reason and incentive *alone*, for we know that it is visceral emotion that provides our basic urgency toward particular actions; consequentialist reason serves for the most part to justify behavioural tendencies that affective elements of the psyche have already created. This is probably the easiest of the necessary conditions for an institution that determines behaviour to meet – policymakers in business have known since discovery of Freud on Madison Avenue in the 1950s that one must appeal to a baser level than reason (Packard, 1957) – yet it is, again, morally ambiguous to seek to change behaviour by seeking to anchor institutions to visceral emotions and thus provide them with urgency and the individual with motivation. Vance Packard's

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book *The Hidden Persuaders* (1957) for instance left us with little room for doubt as to his views on marketing for the purpose of manipulating emotion, and it was very successful partly because of this.

However, these difficulties are also in direct proportion to the scale of social change that the policymaker is seeking to engineer, and the extent therefore of the institutions that must be changed. It is difficult to change an institution, or introduce one of such extent as to be integral to social order. It is less difficult to change an institution, or to introduce one that would serve to order a subset of society. It is less difficult again to change institutions within or introduce institutions into one's own community and one's own self.

Our theory argues therefore, in a sense, for the possibility and efficacy of *governance* and taking responsibility for social change at the community and neighbourhood level, and against the difficulty and inefficacy of *government* engaging in difficult and morally ambiguous efforts at engineering outright change at the level of entire societies. It argues, somewhat, from a cognitive and affective psychological perspective for the radical legal theory of Friedrich Hayek (Crowe, 2014b), which argues for those laws which legitimise norms for interaction that have emerged from an evolutionary process in society and against those laws that seek to impose norms. It is, in a sense, an anarchic theory (Marshall, 1992), but one that does not rely on rational choice theory to argue for the value of anarchistic governance (it adds value, in this sense, to arguments made by Peter Leeson, 2009, 2014).

Conclusion: rules, perception, emotion

In this paper we have sought to extend institutional theory by giving it a greater basis in cognitive and affective psychology. We have sought, in doing so, to answer a simple question: when do institutions determine behaviour? We have made use of a new view of the psychological process as operating within networks to integrate insights from cognitive and affective psychology into institutional theory to answer this question. We have discovered, in so doing, the psychological predicates (the necessary conditions) for institutions to have a hold on the mind and determine behaviour. They are three:

- Institutions must be encoded as a rule structure for processing information in the world within mental networks.
- Institutions must be embedded within a perceptual apparatus within mental networks sufficiently extensive and subtle for the elements of institutions to be perceived in situations where it is appropriate for them to guide thinking about the environment and behaviour in it.
- Institutions must be sufficiently *anchored* (contain connections) to an emotion visceral enough to provide the institution with urgency and the individual with motivation, and thus determine preferences.

Roughly, we could say that institutions need to be such that people have rule structures embedded in their mental networks whereby they know *how* to act, *when* to act and *why* to act. Rationality as consequentialist reasoning has a secondary and superfluous role in this theory. It will, for the most part, due to the role of cognitive dissonance in mental evolution, serve to justify institutions that already exist.

From this theory have emerged definite predictions about which institutions will have a hold on mind and behaviour, guiding thought about the world and how to act in it. If any institution is such that individuals do not know how, when or why to act, then it will be inert: it will not have a hold on the mind or behaviour, and it will not serve to order society. Any institution that appeals solely to reason without appealing to emotion, or does not establish a sufficient cognitive and affective basis in the mind, will be inert. A more specific prediction is that those laws that legitimise existing institutions will (*ceteris paribus*) have a greater rate of adherence and this rate will be achieved faster than laws that do not.

From this theory have also emerged insights into policy. Our theory suggests that efforts in large-scale engineering of the social order by changing existing or introducing new institutions are

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either faced with significant difficulties or must necessarily stray into morally ambiguous methods. It suggests that this difficulty lessens in proportion to the scale of social change a policymaker is seeking to bring about, and argues for the value of *governance* emerging from the smallest possible unit of society. It suggests that emergent, quasi-anarchistic governance of society is possible and valuable for cognitive and affective reasons.

It is to be hoped, therefore, that this paper has made a contribution to the literature of institutional theory by providing it with a yet more compelling grounding in psychology. It is to be hoped, further, that this contribution has yielded practical value for institutional thinking by providing us with definite predictions and practical insights into how our societies are ordered by institutions which have a hold on the mind and behaviour of the individual.

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