

JUDICIAL CONCEPT ACQUISITION: AN ANALYTIC FRAMEWORK

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Abstract: Drawing on contemporary trends in analytic and naturalistic philosophy of mind, this paper sets out to provide a theoretical account of the cognitive and practical process by which new concepts are acquired by judges over the course of a legal hearing. It also aims to discern the factors which condition the success or failure of that process and to provide a clear and sound framework for identifying, critically reflecting upon and reforming those aspects of the normative regime presently regulating legal hearings which facilitate or obstruct that process.

A. INTRODUCTION

Occasionally, in pursuing their adjudicative duties over the course of a legal hearing, judges are called upon to acquire new concepts, by which we mean concepts which they did not possess at the commencement of the hearing.¹ In performing their judicial role they are required to learn new things and, as a result, conceptualise the world in a way which differs (admittedly only slightly in many cases) from the way they conceived of things before the hearing commenced. For example, over the course of a medical malpractice or other torts claim a judge may need to acquire for the first time a concept of the rare, newly discovered or otherwise unfamiliar illness or disability suffered by the plaintiff in order to determine whether its occurrence has been caused by the actions of the defendant. Likewise, in a product liability case a judge may be required to gain a concept of the new or complex product alleged to have caused injury to the plaintiff in order to ascertain whether its manufacture involved an unreasonable risk of injury. In cross-cultural matters, too, similar demands may arise. Over the course of an indigenous land rights or other minority rights claim, a judge may need to gain a concept of an unfamiliar kinship relationship or cultural

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¹ Though my focus in this paper will be on judicial concept acquisition over the course of a formal legal hearing, I do not wish to imply from this that, in practice, the process of concept acquisition cannot or does not encompass a wider temporal and procedural context, including pre-trial proceedings and processes. Virtually all of what I have to say about judicial concept acquisition over the course of a hearing applies to these other contexts.

practice in order to determine whether evidence of its historic or present day occurrence justifies formal recognition and protection.²

In fact, in every situation in which a judge is required to reason about some phenomenon – an illness, a pharmaceutical product, a technological device, a cultural practice – say, to evaluate its comprehension by a legal definition or other standard or to infer as a matter of fact from its nature or structure to its causes or effects, the judge must possess a concept of that phenomenon. She must have an idea of the thing. This is a necessary condition of reasoning about things. We reason with concepts. Where the phenomenon in question has not previously been encountered by the judge (whether directly through sensory experience or indirectly through the interpretation of texts or the testimony of others) and where, as a result, the judge does not possess a concept of the phenomenon at the commencement of the hearing in which it becomes an issue, the judge must acquire such a concept over the course of the hearing if she is to adequately perform her adjudicative role.

For this to happen over the course of a hearing, the hearing process – its norms, its participants, its physical architecture, even – must realise or enable conditions conducive to such acquisition. It must provide an environment which facilitates this mode of judicial reasoning – the largely tacit, micro-reasoning of concept acquisition which occasionally informs the often more conscious macro-reasoning of deciding a case. It is not clear, however, that the conditions under which judges think and act over the course of a hearing are always as conducive to concept acquisition as they could or should be. By virtue of the kind of agent judges typically are, the rules and other norms they are subject to, and the physical environment within which they practice over the course of a hearing, judges may be constrained in effectively acquiring the concepts they need to acquire in adjudicating matters before them. As a result, the quality of the justice they purport to provide those who come before them may be compromised.

Judicial concept acquisition is then not only more common within a legal system but also more important to the effective and just operation of such a system than many might think. Yet as an aspect of judicial practice – as a mode of judicial reasoning – it has not (to this author's knowledge, at least) been explicitly and systematically theorised in any detail.³

² I describe the legal mechanics of this in detail in Anthony J Connolly, *Cultural Difference on Trial: The Nature and Limits of Judicial Understanding* (Ashgate Publishing 2010), Chapter 3.

³ James Penner, Michael Pardo, and Dennis Patterson are three legal theorists who, in thinking about law, have drawn upon contemporary strands in the philosophy, psychology, and cognitive science of concepts. Though their work clearly resonates with the project I am engaged in here, they have not sought to inquire into the nature of judicial concept acquisition as a mode of judicial fact-finding practice, as I have. See James E Penner, 'Cognitive Science, Legal Theory, and the Possibility of an Observation/Theory Distinction in Morality and

This paper seeks to address this comparative neglect. It sets out to provide a theoretical account of the nature of judicial concept acquisition – to describe the cognitive and practical process by which new concepts are acquired by judges, to identify those aspects of the legal system which bear on the success or failure of that process, and to provide a framework for thinking about the reform of the legal system so as to better facilitate this important mode of judicial reasoning (subject, of course, to the demands of the other ends and values a legal system is also designed to serve).⁴

It is, thus, a paper in both the philosophy of (the judicial) mind and legal institutional design whose objectives are both descriptive and critical. Its jurisprudential import lies in this dual orientation. Aside from opening up a new avenue of descriptive and explanatory knowledge about judicial thought and practice (in the manner of a ‘pure science’ of the phenomenon), the theoretical dimension of the paper is also of value in that it provides the only sound basis for explaining the efficacy (or lack thereof) of the various epistemic mechanisms that have already been established within legal process and for enabling the imagination and design of better, more effective mechanisms. There can be no effective and long term institutional critique and redesign without a proper understanding of the underlying physical and psychological infrastructure, no matter how expedient any set of ad hoc and theoretically shallow responses might appear. As is usually the case in scientific endeavour, sound applied science is best served by sound pure science.⁵

The paper proceeds as follows. In order to understand the judicial acquisition of concepts we need to understand what concepts are. In order to understand what concepts are, we need to understand the nature of the mental context within which they necessarily subsist – that of intentionality. Consequently Section B of the paper provides a philosophically naturalist⁶ account of the nature of the kind of mental states which provide this context – so-

Law’ (1998) 1 *Current Legal Issues: Law and Science* 1; James E Penner, ‘Common Law Cognition and Judicial Appointment’ (2000) 38 *Alberta Law Review* 683; Michael S Pardo and Dennis Patterson, ‘Philosophical Foundations of Law and Neuroscience’ (2010) *University of Illinois Law Review* 1211; Michael S Pardo and Dennis Patterson, *Minds, Brains, and Law: The Conceptual Foundations of Law and Neuroscience* (OUP 2013).

⁴ It is worth noting here that, to the extent that the reasoning involved in judicial concept acquisition resembles other modes of judicial reasoning, some light might also be shed on the nature and reform of the conditions of judicial reasoning more generally.

⁵ On the relationship between these two kinds of science and the value of each there is an extensive literature. See, for example, Ernest Nagel, *The Structure of Science* (Harcourt, Brace and World 1961); Karl R Popper, *The Myth of the Framework: In Defence of Science and Rationality* (Routledge 1994); Philip Kitcher, *Science, Truth, and Democracy* (OUP 2001).

⁶ Philosophical naturalism of the kind I subscribe to (physicalism) holds that all real phenomena are fundamentally physical and, as a result, knowable by the methods of the natural and associated higher order sciences. In the legal context, philosophical naturalism has been most influentially elaborated and advocated by Brian Leiter. See Brian Leiter, *Naturalizing Jurisprudence: Essays on American Legal Realism and Naturalism*

called *intentional* states (beliefs and desires and the like).⁷ The physicalist-functionalist approach to intentional states elaborated upon in this section provides an important basis not only for understanding the nature of concepts but also for understanding the acquisition of concepts by judges.⁸ These things are explored in Section C, invoking certain lines of thought advocated by a number of contemporary theories of concepts.⁹ In the section following, our attention turns more specifically to the legal context within which judges are called upon to acquire concepts, outlining both the cognitive and institutional architecture of that process. Here, we build upon the earlier, more general discussion by describing the various cognitive and practical processes by which a judge acquires new concepts. It is a premise of this paper that judicial concept acquisition is a species of concept acquisition as a general matter.¹⁰ In Section E, we identify the two key factors affecting judicial concept acquisition – the conceptual scheme or base possessed by the judge at the commencement of the hearing and the epistemic conditions which present over the course of the hearing. The paper will then go on to analyse the various elements which make up these conditions in the latter part of this section. Section F concludes the substantive discussion by noting the role that legal norms play in relation to the factors conditioning judicial concept acquisition and by confirming the possibility of reforming those norms so as to facilitate this process. In that section, the paper identifies a number of aspects of the normative regime governing legal hearings which might be reformed in the service of effective judicial concept acquisition. With this introductory coda in place, then, let us outline the psychology of judicial concept acquisition.

in Legal Philosophy (OUP 2007). For an elaboration of physicalism as a kind of naturalistic metaphysics and methodology see Jeffrey Poland, *Physicalism: The Philosophical Foundations* (OUP 1994); Jaegwon Kim, *Mind in a Physical World* (MIT Press 1998); Andrew Melnyk, *A Physicalist Manifesto: Thoroughly Modern Materialism* (CUP 2003).

⁷ The term ‘intentional’ here is used in the technical philosophical sense of being directed at some state of affairs (I believe that x, I desire that y) and, as a result, having what is called propositional content. The term is not used here in the ‘ordinary language’ sense of being intended or deliberate or willed. I elaborate further on this in the next section. See John R Searle, ‘Intentionality’ in Samuel Guttenplan (ed), *A Companion to the Philosophy of Mind* (Blackwell Publishers 1994) 379-86.

⁸ Again, flagging more detailed discussion in the next section, the physicalist-functionalist approach to intentional states envisages beliefs and desires and their conceptual contents as not only fundamentally physical but also as individuated as the phenomena they are by the function or role they play within the psychological and practical life of an agent. Some influential elaborations of physicalist-functionalist may be found in Ned Block (ed), *Readings in Philosophy of Psychology*, vol 1, (Harvard University Press 1980).

⁹ The work of Susan Carey and her colleagues at Harvard is becoming increasingly important to my work in this field. See especially Susan Carey, *The Origin of Concepts* (OUP 2009).

¹⁰ Any inquiry into the nature of judicial concept acquisition must be informed by a sound theory of the general nature of concept acquisition. Judicial concept acquisition is that species of concept acquisition in general which is characterised by the conditioning of the concept-acquisitive process by certain identifiably legal and judicial factors. I argue this in more detail in Connolly (n 2).

B. THE INTENTIONAL CONTEXT OF CONCEPTS

Put simply, a concept is a component of that category of mental states known as intentional states – beliefs and desires, for example – which necessarily inform all judicial thought and action.¹¹ In order to understand the nature of concepts, we need to understand the nature of these states. By virtue of the purposive nature of judicial action within which they necessarily subsist, intentional states are traditionally characterised by their being *about* or *directed towards* some actual or counterfactual state of affairs – some set of possible objects, properties and relations. One believes that “there is a glass of water on the table”, one desires that “the glass be removed from the table”, and so on. It is this *aboutness* or *directedness* that constitutes their intentionality.¹²

The state of affairs towards which an intentional state is directed is conventionally termed the *propositional content* of that state, expressible in language by means of an indicative sentence.¹³ This, in turn, may be analysed as comprised of a set of concepts. The proposition that “there is a witness testifying in the stand”, for example, is comprised of the concepts ‘witness’, ‘testifying’, ‘stand’, and so on. Thus, by virtue of her acting in the world a judge may be said to possess not only a given intentional state but also the propositions and concepts informing that state. To believe there is a witness testifying in the stand is to possess the concepts of witness, testifying, stand, etc. How could one believe such a thing without possessing the concepts in question? With this basic psychological postulate in place, we can make sense of the acquisition of concepts in light of what we know about the acquisition of intentional states.

What our best naturalistic philosophy and science tell us is that intentional states are those neuro-physiological states of an agent which perform a certain function, play a certain role or meet certain conditions within the overall sensory, cognitive and behavioural interaction of that agent with their environment.¹⁴ They are neuro-physiological states which mediate between an agent’s environment, other neuro-physiological states, and bodily behaviour. By virtue of their role within an economy of human action in the world,

¹¹ Jesse J Prinz, *Furnishing the Mind: Concepts and Their Perceptual Basis* (MIT Press 2002) 2.

¹² A useful account of the nature of this ‘aboutness’ may be found in David Braddon-Mitchell and Frank Jackson, *Philosophy of Mind and Cognition* (Blackwell Publishers 1996) – especially Parts II and III.

¹³ Such sentences typically say – either truly or falsely – how things are. That is, they indicate an actual or counterfactual state of affairs.

¹⁴ An interaction which, for many naturalists, is causal in nature. See the essays in Sven Walter and Heinz-Dieter Heckmann (eds), *Physicalism and Mental Causation: The Metaphysics of Mind and Action* (Imprint Academic 2003) on this.

intentional states have typical causes and effects.¹⁵ They are phenomena which typically cause behavioural events – that is, bodily events or bodily-caused environmental events (including non-observable ones). They are phenomena which – through the mediation of an agent’s sensory apparatus – are also typically caused by environmental phenomena. And finally, they are phenomena which typically cause and are caused by other intentional phenomena. An intentional state is by its very nature causally related to or mediating of these three categories of phenomena – environmental inputs, intentional inputs and outputs, and behavioural outputs – all according to a set of intentional regularities we may theorise in terms of a theoretical and practical rationality.¹⁶ To possess or be in an intentional state is to possess or be in a neuro-physiological state which is so related.¹⁷

The functional definition of intentional phenomena as a general matter is relatively straightforward. However, for *specific* intentional state types (say, a judge’s belief that there is a witness testifying in the stand) things are more complex. Specific intentional states are typically caused by specific kinds of environmental phenomena, typically cause and are caused by specific kinds of other intentional phenomena and typically cause specific kinds of behavioural phenomena, all provided that certain relevant background intentional conditions exist. A judge’s belief that there is a witness testifying in the stand is a functional state which takes specific kinds of environmental and intentional inputs and yields specific kinds of intentional and behavioural outputs according to some set of broadly rational intentional regularities – but only provided that some set of other background intentional states are obtained.¹⁸

As a result, specific intentional states fill a more complex causal-nomic role within a more complex system of environmental, intentional and behavioural phenomena – they meet a more multifaceted set of conditions – than the general category of intentional states

¹⁵ Daniel Dennett, *Brainstorms: Philosophical Essays on Mind and Psychology* (MIT Press 1978); Christopher Cherniak, *Minimum Rationality*. (MIT Press 1986); Philip Pettit, *The Common Mind: An Essay on Psychology, Society and Politics* (OUP 1993). Though, strictly speaking, it is events and not states which are the subject of causal relations, we can safely gloss the notion of an event in terms of a change of state over time and thus, make useful enough sense of the notion of a state being involved in causal relations. See Donald Davidson, ‘Causal Relations’ in *Essays on Actions and Events* (Clarendon Press 1980).

¹⁶ Samuel Guttenplan, ‘An Essay on Mind’ in Samuel Guttenplan (ed), *A Companion to the Philosophy of Mind* (Blackwell Publishers 1994), 99.

¹⁷ Kim (n 6) 19.

¹⁸ We may analyse the belief that there is a witness testifying in the stand as being typically caused (inter alia) by the environmental state of there actually being a witness testifying in the stand – but only provided that certain other beliefs (and other states) exist. An example of such an associated background belief is the judge’s belief that her sensory faculties are working properly. A judge will not typically believe that there is a witness testifying in the stand in response to the fact (or sensory cue) of there being one there if she at the same time believes that her sensory faculties are malfunctioning in some relevant way. To do so would be irrational and, as a general rule, agents are not *typically* irrational.

discussed above. Upon analysis, it is evident that a specific intentional state – say, a belief that there is a witness testifying in the stand – may be typically caused by and causal of any of a vast number of input and output kinds.¹⁹ All of these typical, causally relevant, kinds contribute together to the functional definition and individuation (both conceptually and ontologically) of the state in question. This feature is relevant to the judicial acquisition of concepts, as we shall see below.

With this account of the intentional context of concepts in place, we can make sense of the judicial possession of an intentional state and its component concepts in terms of a judge possessing a neuro-physical state which plays the particular causal-functional role individuating that state. Thus, a judge possesses a *concept* by virtue of possessing a neuro-physiological state which performs a characteristic concept-generating causal-functional role in the cognitive and behavioural interaction of the judge with her environment. Importantly, a given concept is possessed by virtue of possessing any of the possible intentional states containing that concept. Further, though, in order to possess, say, a belief that there is a witness testifying in the stand, a judge must *at the same time* possess a range of other intentional states which feature as background intentional states in the causal matrix individuating of that belief. As a result, a judge possesses the concept ‘witness’ by virtue of possessing a *set* of intentional states, some of which will be informed in their own propositional content by that concept.²⁰

An agent *comes to possess* – that is, acquires – an intentional state and its conceptual content by being in appropriate causal contact with any one of the environmental inputs or intentional inputs which typically cause that intentional state – whilst at the same time holding the set of background intentional states that are required for that causal link to hold. Thus, the two necessary conditions for the acquisition of an intentional state and its conceptual content are:

1. An appropriate causal relationship with at least one of the many environmental or intentional phenomena which typically cause that intentional state; and

¹⁹The belief in question may be typically caused by any of a range of phenomena, including, for example, the fact of there actually being a witness testifying in the stand *or* an utterance to that effect by another agent.

²⁰This fact reflects the importantly *holistic* nature of intentional states and of concepts. They are metaphysically dependent for their existence and identity upon the existence of certain other phenomena – namely, those comprising the system of environmental, intentional and behavioural phenomena they form a part of. This is to say that they are – in part, at least – metaphysically dependent upon the possession by a judge of certain other concepts. The metaphysical dependence at work here differs importantly from their ontological dependence upon the physical. See Jerry Fodor and Ernest Lepore, *Holism: A shopper's guide* (Blackwell Publishers 1992); Donald Davidson, ‘Mental Events’ and ‘Psychology as Philosophy’ in *Essays on Actions and Events* (Clarendon Press 1980).

2. The concurrent possession of relevant background intentional states (and concepts) associated with that causal relationship.

In the context of a judge acquiring intentional states over the course of a hearing, we can characterise the environmental phenomena mentioned in the first condition in terms of the evidence (as well as counsel submissions and arguments) a judge appropriately encounters over the course of the hearing. Likewise, we can characterise the intentional phenomena invoked in the first condition in terms of the judge's own process of reasoning by means of the existing intentional states (beliefs and desires) maintained by her. So too, in the judicial context, the second condition points us to the content of the judge's mind – her conceptual scheme and intentional profile (her beliefs and desires) at the commencement of the hearing.

C. POSSESSING CONCEPTS – A THEORETICAL ACCOUNT

We can refine this initial take on the nature and acquisition of concepts by adding to our functionalist account of intentionality, what is known in the philosophical and psychological literature as a 'theory-theory' account of concepts.²¹ Within this framework we can characterise concepts not merely as components of intentional states but as discursive tools some community of agents (a conceptual community) has developed in order to classify and otherwise make sense of themselves and the world around them.²² On this approach concepts may be conceived of as theories of things which, amongst other things, elaborate a description of the conditions which a candidate phenomenon must meet for membership of the class of things comprehended by or referred to by the concept in question.²³

Taking a concept which actual judges once had to acquire in order to do their job²⁴, the concept of the pharmaceutical Bendectin may be conceived of (for our purposes here) in

²¹ Stephen Laurence and Eric Margolis, 'Concepts and Cognitive Science' in Eric Margolis and Stephen Laurence (eds), *Concepts: Core Readings* (MIT Press 1999); Carey (n 9); Edouard Machery, *Doing Without Concepts* (OUP 2011).

²² Daniel Dennett, *The Intentional Stance* (MIT Press 1987); John R Searle, *The Rediscovery of the Mind* (MIT Press 1992); Carey (n 9).

²³ This is not the only way we might characterise concepts (see Machery (n 21)) but it is a way which is both consistent with physicalist-functionalism and – despite certain challenges – theoretically sound. Further, it is capable of comprehending a variety of important sub-theories of concepts ranging from externalist theories of natural kind concepts to constructivist theories of social and artefactual concepts. See Saul A Kripke, *Naming and Necessity* (Harvard University Press 1972), on the former and W B Gallie, 'Essentially Contested Concepts' (1956) 56 *Proceedings of the Aristotelian Society* 167 and John Searle, *Mind, Language and Society: Philosophy in the Real World* (Weidenfeld and Nicolson 1999), on the latter. For my purposes here, I will (with justification, I would argue) presume a degree of determinacy of content in relation to the concepts discussed.

²⁴ The well-known U.S. product liability case, *Daubert v Merrell Dow Pharmaceuticals, Inc.*, 509 US 579 (1993). In this case, the U.S. Supreme Court developed an influential standard concerning the admissibility of scientific evidence.

terms of the theoretical description “a white powdered mixture of pyridoxine and doxylamine²⁵ manufactured by the pharmaceutical company Merrell Dow Pharmaceuticals and prescribed to treat the nausea and vomiting associated with morning sickness in pregnant women”. Possessing this concept entails a judge possessing an intentional state or set of such states whose propositional content includes this concept. How else could it be possessed?²⁶

To the extent that we can properly characterise someone who possesses the concept of Bendectin as believing that “Bendectin is a white powdered mixture of pyridoxine and doxylamine...”, we can theorise the possession of a concept in terms of the possession of a theoretical belief (intentional state) of this kind. For anyone whose overall thought and behaviour justifies our ascription to them of a concept of Bendectin (they once took the drug when pregnant, they once prescribed it to pregnant women, they talk sensibly about Bendectin etc) we are justified in ascribing a theoretical belief to them with the content “Bendectin is a white powdered mixture of pyridoxine and doxylamine ...” The possession of this concept may be thought of as grounding a practical capacity to act in a ‘concept-of-Bendectin-possessing’ manner in the world – a capacity to distinguish between Bendectin and other substances, for example, in the judge’s official activities.²⁷

Following up on my earlier point about the acquisition of a belief, we may think of the acquisition of any concept x in terms of the acquisition of a theoretical belief about x – specifically, a belief which for the first time implicates x. We can then use this notion of the acquisition of a theoretical belief as a model of concept acquisition in general. Like all beliefs, such a belief would be acquired by a judge coming into appropriate causal contact with relevant environmental phenomena (here, viewing or chemically analysing a sample of Bendectin or being told about Bendectin by way of evidence, say) or other intentional states (a judge inferring from other relevant beliefs she might hold beliefs about Bendectin – which is to say, engaging in a process of reasoning), whilst at the same time maintaining certain other relevant background beliefs and desires.

²⁵ Pyridoxine is a water-soluble compound which plays a vital role as the co-factor of a large number of essential enzymes in the human body. Doxylamine is an anti-histamine.

²⁶ I address below the question of how much of this propositional content a judge must possess in order to be justifiably taken to possess the concept, as such. Notwithstanding my use of this concept in the discussion to follow, my analysis could also be applied to the judicial acquisition of much simpler concepts.

²⁷ Michael P Lynch, ‘Three Models of Conceptual Schemes’ (1997) 40 *Inquiry* 407, 418. With this in mind, we can make sense of the idea that possessing an intentional state informed by a concept of Bendectin involves possessing a theoretical belief about Bendectin by noting that if an agent possesses any intentional state informed by the concept of Bendectin, that agent will behave in a manner which justifies us in ascribing to her a theoretical belief about Bendectin as well.

What can we say about these other background beliefs here? Again, we can gain some insight into these in this context by considering concepts as theories. As theories, concepts are decomposable into those other concepts which feature in the constitutive theory. We may term these other concepts sub-concepts. Concepts are, therefore, analysable in terms of their component sub-concepts, as well as the characteristic syntactic relationship which exists between those sub-concepts. These sub-concepts and the syntactic relationship between them constitute the *content* of the concept.²⁸ The concept of Bendectin (termed a primary concept because it is our primary subject of concern at this point) is constituted by the sub-concepts (let us term these secondary concepts) of white, powder, mixture, pyridoxine, doxylamine, and so on – all syntactically related to each other in a manner characteristic or constitutive of the concept of Bendectin. The content of the concept of Bendectin may be analysed as comprising these sub-concepts, as well as the characteristic syntactic relation between them.²⁹ And, of course, each of these secondary concepts may themselves be analysed in terms of a further set of characteristically syntactically related sub-concepts (tertiary concepts relative to the primary concept of Bendectin) – pyridoxine, for example, as water-soluble compound which plays a vital role as the co-factor of a large number of essential enzymes in the human body, or some such.³⁰

Finally, it follows from the preceding account of things that a judge may possess the concept of Bendectin to a greater or lesser degree above the possession-sufficient minimum by virtue of possessing a greater or lesser number of its component sub-concepts – together,

²⁸ Georges Rey, 'Concepts and Stereotypes' (1983) 15 *Cognition* 237; Georges Rey, 'Concepts' in Samuel Guttenplan (ed), *A Companion to the Philosophy of Mind* (Blackwell 1999); Laurence and Margolis (n 23), 8-14; Prinz (n 11), 32-48. We can conceive of the possession of a primary concept in terms of possessing its sub-concepts, knowing (often tacitly) that they are sub-conceptual components of the primary concept and knowing the characteristic syntactic relationship they maintain with each other within the theory constituting the primary concept. I will have more to say on this below. It is worth noting here that I do not wish to imply by my use of the terms primary and secondary and so on that the sub-concepts of Bendectin are, in any metaphysical sense, more *foundational* than that concept. I am sympathetic to Quine's critique of foundationalism here and to the non-foundationalist metaphor of a *web* of interrelated concepts rather than that of a pyramid in thinking about the relationship between concepts and their contents. See WVO Quine, 'The Two Dogmas of Empiricism' in *From a Logical Point of View* (Harvard University Press 1953); Jerrold Katz, *Semantic Theory* (Harper and Row 1972); Eve Clark, 'What's in a Word? On the Child's Acquisition of Semantics in His First Language' in Timothy E Moore (ed), *Cognitive Development and the Acquisition of Language* (Academic Press 1973); Laurence and Margolis (n 21) 18-21.

²⁹ In order to possess a concept it is not enough to merely possess some syntactically unrelated set of its sub-concepts. A theory comprises a syntactically structured set of concepts. Bendectin is properly described as a mixture of pyridoxine and doxylamine and not as a pyridoxine of mixture and doxylamine. So too, a concept comprises a syntactically structured set of sub-concepts.

³⁰ These tertiary concepts may also be analysable in terms of other lower-order sub-concepts. Indeed, the sub-conceptual content of a given primary concept may extend to some significant part of the total conceptual scheme possessed by a judge. Again, in order to forestall concerns about foundationalism and infinite regresses and the like, I note my preference for conceiving of a conceptual scheme in terms of a web of interrelated concepts.

of course, with the requisite knowledge of their componency and syntactic relationship.³¹ A judge who, for example, believes that Bendectin is a white powdered mixture of pyridoxine and doxylamine manufactured by the pharmaceutical company Merrell Dow Pharmaceuticals may be said to possess the concept of Bendectin to a greater degree than if she believes merely that Bendectin is a white powder of some sort. The more of the theory – which is to say, the concept – a judge possesses, the more discriminating and effective she may be in her use of the concept, the more versatile she may be in her actions involving the concept. It is implicit in this line of thinking that by *acquiring* more sub-concepts of the concept of Bendectin, together with the requisite componency and syntactic knowledge, a judge might move from a sparser to a richer concept of the drug. This leads us to the question of how such acquisition might proceed.

D. THE JUDICIAL ACQUISITION OF CONCEPTS

As we saw above, a judicial belief containing the concept of Bendectin is, like any judicial belief, a neuro-physiological state of a judge which meets the condition of being typically caused by a distinctive individuating range of environmental and intentional inputs, given the obtaining of certain associated background intentional states.³² A judge possesses such a belief by virtue of being in the requisite physical state and, typically, she comes to be in the requisite physical state by having been subject to the causal influence of *at least one* of the members of the set of individuating environmental or intentional inputs which typically cause that state in that agent, whilst *at the same time* possessing the background intentional states relevantly associated with that input. Something needs to have caused the physical state that is the belief in question. That something will typically be one of the phenomena identified in the total functional definition of the belief in question as typically causal of that belief. These phenomena fall into two categories: environmental events, which in the context of the courtroom we may identify with the various forms of evidence or counsel submissions about a concept made available to a judge, and intentional events, which in the courtroom context

³¹ The extent of the sub-concepts of the ‘total’ concept of x (or, alternatively, the extent of the propositional content of a total theory of x) required to be maintained by an agent in order to be said to possess a concept of x is a conventional matter, determined with reference to the thought and practice of some community of agents who maintain the concept. See Laurence and Margolis (n 21) and Eric Margolis, ‘How to Acquire a Concept’ in Stephen Laurence and Eric Margolis (eds), *Concepts: Core Readings* (MIT Press 1999) on this. More generally, see David Lewis, *Convention* (Harvard University Press 1969).

³² And which typically causes a distinctive range of intentional and behavioural outputs, given the obtaining of certain associated background intentional states.

we may conceive of as comprising the elements of a process of reasoning on the part of a judge.

A theoretical belief that Bendectin is a white powdered mixture of pyridoxine and doxylamine etc is a physical state which is typically caused by, amongst other things, the environmental event of there being a sample of Bendectin in front of a judge³³ – but only given the possession by that judge of a series of associated background intentional states, including the belief that the judge’s sensory apparatus is working correctly, the belief that pyridoxine is a water soluble compound, and so on. Given the possession of these background intentional states and the presence of Bendectin in front of the judge, it follows by virtue of a non-strict intentional regularity of the kind discussed earlier that that judge will believe that Bendectin is a white powdered mixture of pyridoxine and doxylamine etc. If the judge had no concept of Bendectin before this encounter, she will acquire (some degree of) that concept by means of this encounter.

But, of course, the judge will only possess the background intentional states associated with this belief if the judge has previously been subject to the causal influence of at least one of the members of the set of individuating environmental or intentional inputs which typically cause each of those background states, whilst at the same time possessing the background intentional states relevantly associated with those inputs. And, likewise, for the background states involved in the causing of these background states. If she has not been subject to the relevant set of causal influences she will not possess the relevant intentional states and concepts. We can translate this talk of belief acquisition into talk of concept acquisition by noting that the acquisition of the primary concept of Bendectin will not be caused by the evidence in question unless the judge already possesses some multiple set of the secondary sub-concepts of the concept of Bendectin. Further, she will not have acquired those secondary concepts unless, at the point of that prior acquisition, she possessed some multiple set of the (tertiary) sub-concepts of those secondary concepts.

What emerges from this picture is that in order for a judge to come to possess the relevant belief and concept in question, not only must the judge possess *prior to this* a substantial number of other associated intentional states and sub-concepts, but over the course of her life prior to this particular encounter in court the judge must have been in appropriate causal relations with a substantial set of possession-relevant environmental and

³³ I am assuming a judge with normal sensory capacities here.

intentional phenomena generative of such associated states and sub-concepts.³⁴ Further, in order to possess the belief and concept in question this causal contact with environmental and intentional phenomena over time cannot have been in *any* temporal order whatsoever. Rather, it must have taken place in an order which enabled the judge to acquire the background intentional states and secondary sub-concepts necessary for the possession of the primary belief and concept in question.³⁵

One way to usefully – though, rather metaphorically – think about what is a highly complex set of conditions for the acquisition of a concept is in terms of the judge having taken a distinctive (though not uniquely necessary) environmental and intentional *trajectory* through time and space. It is her following of this trajectory which may be considered to have forged her intentional profile at large, including her acquisition and ongoing possession of any belief or concept in question.³⁶ A judge acquires a belief and its associated concepts by taking one of the set of such trajectories which lead to possession of that belief. At a certain point along the judge’s environmental and intentional trajectory, when sufficient associated background intentional states have been put in place and when an appropriate environmental or intentional event occurs, the judge acquires the concept-containing belief in question.

This is just to say that at a point in the judge’s intentional or conceptual development, when some possession-sufficient set of the sub-concepts of the primary concept in question have been acquired, the judge is able to gain knowledge that those sub-concepts are sub-concepts of that primary concept as well as knowledge of what their syntactic relation is in response to some relevant environmental or intentional event. She is able to acquire that

³⁴ This rather abstract point takes on important practical consequence in the discussion below on the epistemic benefits of selecting judges with some expertise or experience in those areas of fact and law in which unfamiliar concepts are likely to feature.

³⁵ Clark (n 28). Of course, a potentially vast range of different temporal orderings of the judge’s causal contact with relevant environmental and intentional phenomena may be compatible with the judge’s ultimately possessing the belief in question. She may acquire the concept of Bendectin or pyridoxine or compound early in life or later, outside the courtroom or in it, and by one of a range of environmental or intentional inputs. The key point here is that it is not the case that ‘anything goes’ temporally as far as concept acquisition is concerned. There may, though, be many ways leading to the acquisition of a given concept.

³⁶ An alternative way of conceiving of the process of concept acquisition is in terms of a process of enculturation into the world, way of life and conceptual scheme of a conceptual community – scientific or otherwise – already possessing the concept in question. This point is not inconsistent with the possibility that all physiologically normal humans possess certain innate concepts (hardwired into the human brain, for example). See Elizabeth S Spelke, ‘Perception of Unity, Persistence and Identity: Thoughts on Infants’ Conceptions of Objects’ in Jacques Mehler and Robin Fox (eds), *Neonate Cognition: Beyond the Blooming Buzzing Confusion* (Lawrence Erlbaum Associates 1985); JW Astington, PL Harris, and DR Olson (eds), *Developing Theories of Mind* (CUP 1988); Henry M Wellman, *The Child’s Theory of Mind* (MIT Press 1990); Renee Baillargeon, ‘The Object Concept Revisited: New Directions in the Investigation of Infants’ Physical Knowledge’ in Eric Margolis and Stephen Laurence (eds), *Concepts: Core Readings* (MIT Press 1999); and Susan A Gelman and Henry M Wellman, ‘Insides and Essences: Early Understandings of the Non-obvious’ in Eric Margolis and Stephen Laurence (eds), *Concepts: Core Readings* (MIT Press 1999) on this.

primary concept. At that point, a possession-sufficient set of the sub-conceptual content of the concept in question is maintained by the judge and the judge may be considered ‘ripe’ for the acquisition of the concept or belief. All she needs at that point is an appropriate environmental or intentional state to exert an appropriate causal influence upon her.³⁷ Thus, the judicial acquisition of a concept at trial is not independent of the judge’s conceptual development prior to the trial.³⁸

To illustrate this point, consider a judge who in the course of trial possesses some relatively sparse set of the sub-concepts of Bendectin (white and powder, say) but has no knowledge of their componency or syntactic relation within the concept of Bendectin. The judge may acquire knowledge of those things by a variety of evidentiary means over the course of the trial. She may observe by way of real evidence an actual sample of Bendectin or a visual representation of it (a photograph, say) and, by virtue of that observation, come to know that it is a white powder. In response to such observation she may come to know that the concept of Bendectin is comprised of the sub-concepts of white and powder, and know the syntactic relation between those sub-concepts (white powder not powdered whiteness). Alternatively, she may observe and interpret the oral testimony of a witness or the content of a written document asserting that Bendectin is a white powder (that the content of the concept of Bendectin is ‘white powder’) and come to believe the proposition asserted.

In these two cases, an environmental event of a certain kind is causal of a Bendectin-containing belief, against the background of the possession of certain associated intentional states. Alternatively, though, on the basis of some set of beliefs and desires she already possesses, she might *reason* to a conclusion that Bendectin is a white powder or that the concept of Bendectin is constituted by the sub-concepts of white and powder syntactically related in a ‘white powder’ kind of way. That is, an intentional event may be causal of the theoretical belief that Bendectin is a white powder, say, given the possession of certain associated background intentional states. In all cases she acquires an admittedly sparse concept of Bendectin by the epistemic means mentioned only on the condition that she already possesses some possession-sufficient set of the sub-concepts of the concept of Bendectin.³⁹

³⁷ This approach to concept acquisition is consistent with Wellman’s account of, what he terms, conceptual engendering (Wellman (n 36)). At p.318, Wellman states “[i]n this process [of conceptual engendering], an early achieved concept or distinction engenders or makes possible later conceptual progeny.”

³⁸ This is an important point as far as legal institutional design goes, going to the nature of judicial selection processes and to the ongoing education and training of judges. I will have more to say on this below.

³⁹ Or, in other words, a sufficient set of those background intentional states necessary for acquiring a belief containing the concept of Bendectin.

Where the judge does not possess a possession-sufficient number of the sub-concepts of Bendectin X – in our simple example, where she does not possess the concept of powder, say – then she has to acquire a sufficient number of those sub-concepts before she can acquire that concept. And she acquires a sub-concept of Bendectin by the same kinds of means by which she acquires the concept of Bendectin. That is, by means of evidence or a process of reasoning that causes her to possess such sub-concepts, against the background of a set of other intentional states – including, for example, beliefs about the content of some possession-sufficient set of the sub-concepts of these secondary sub-concepts (tertiary sub-concepts of the concept of Bendectin). For example, she may acquire the sub-concept of powder by means of testimonial evidence about that sub-concept – by interpreting and accepting an utterance asserting that powder is finely grained solid matter.⁴⁰ Where the judge does not possess a sufficiency of the tertiary sub-concepts as would enable possession of a secondary concept (she does not possess concepts of grained or solid), she must acquire those tertiary concepts by means of evidence or reasoning about those tertiary concepts.

So it goes, into the sub-conceptual ‘depths’ of the concept of Bendectin,⁴¹ building up the possession of the content of that primary concept, sub-concept by sub-concept, gradually acquiring that primary concept by her cognitive and interpretive efforts in response to real, representational and testimonial evidence and reasoning about its content, until such time as she possesses sufficient of its sub-concepts and sufficient knowledge of their syntactic relations as would constitute a practically adequate possession of the concept of Bendectin, given her purposes. This building up may be achieved by any one of a range of combinations of real, representational and testimonial evidence and streams of reasoning in any one of a range of temporal orders, reflecting the range of trajectories available for acquiring a concept over the course of a legal hearing.⁴²

⁴⁰ With a concept of powder thereby acquired, the judge may then go on to acquire the concept of Bendectin on the basis of the kinds of evidence about that concept mentioned above.

⁴¹ Or, to shift metaphors, across the sub-conceptual web of the concept of Bendectin.

⁴² It should not be supposed from this simple description of things that the judge’s way into possession of the concept of Bendectin must proceed by way of an item of evidence or a line of reasoning correlating to one and only one unpossessed sub-concept – that the evidence she encounters or conclusions she reaches about sub-conceptual matters must necessarily present themselves to her in some atomistic and linear manner. Rather, the judge may simultaneously gain knowledge of a number of sub-concepts of the primary concept upon coming into appropriate causal contact with a single environmental (evidential) event or piece of testimony or concluding belief, depending upon her intentional profile at that time.

E. FACTORS AFFECTING JUDICIAL CONCEPT ACQUISITION

It follows from the foregoing discussion that two factors fundamentally condition the capacity of a judge to acquire an alien concept over the course of a legal hearing. The first is the nature and extent of the judge's existing conceptual scheme at the commencement of the hearing. The more of the sub-conceptual content of the concept in question the judge already possesses at the commencement of the hearing – which is to say, the less alien the concept in question is to the judge at that point in time – the less concept-acquisitive work the judge will have to do over the course of the hearing. This is because she will have less sub-conceptual content to acquire over the course of the hearing.⁴³ Likewise, the less sub-conceptual content the judge possesses at the hearing's commencement – which is to say, the more alien the concept in question is to the judge at that point – the more concept-acquisitive work the judge will have to do over the course of the hearing. The notion of concept-acquisitive *work* here means acting (including thinking) so as to come into cognitive engagement with relevant environmental inputs and intentional inputs; identifying, manipulating, and cognising evidence, as well as engaging in reasoning so as to build up a conceptual scheme to the point where it includes the concept under acquisition.

Additionally, though, notwithstanding the extent of the judge's sub-conceptual base, her capacity to acquire an alien concept over the course of a hearing will be affected by what will be termed the *epistemic conditions* which prevail over the course of the hearing. These constitute the second of our fundamental factors. Put simply, a judge acquires a concept by means of the sensory-cognitive appropriation of evidence to do with (the sub-conceptual content and syntactic structure of) that concept, as well as by means of reasoning about that concept or the evidence tendered in relation to it. Such evidence may take a variety of forms, including actual tokens of relevant phenomena (real evidence), audio, visual and other representations of such phenomena, and oral or written testimony about the concept, its sub-conceptual content and syntactic structure or about other evidence led in relation to those things.⁴⁴ One way or another, the judge must come into causal contact with and cognitively appropriate some practically adequate set of such evidence (given her adjudicative ends) and,

⁴³ Indeed, where an appropriate sub-conceptual base (or set of background intentional states) is in place at a given point in time, all the judge may need for instant concept acquisition is a single environmental or intentional input from the list of inputs individuating an intentional state containing the concept under acquisition. Virtually no concept-acquisitive work will be required of her under such circumstances.

⁴⁴ For our purposes, such testimony may be taken to encompass not merely the testimony of witnesses (testimonial evidence properly termed) but also explanatory submissions by counsel about the nature of relevant phenomena or the content of relevant concepts.

additionally or alternatively, must engage in some practically adequate set of relevant reasoning if she is to acquire a concept to a practically adequate degree.

However, in order for the judge to be able to build up a primary concept in this manner from some or other sub-conceptual base a range of conditions – epistemic conditions – need to be obtained. First, sufficient relevant evidence, by some means or other, has to come within the sensory range of and be cognitively appropriated⁴⁵ by the judge. This is to say that it needs to *exist*, be located by counsel, and be tendered to, formally admitted and actually relied upon by the judge as evidence at some appropriate point over the course of the hearing.⁴⁶ In order to cognitively appropriate any such evidence, however, the judge has to possess both a capacity and motivation to do so. Alternatively or additionally, given an adequate sub-conceptual base, the judge must possess a capacity and motivation to engage in the kind of reasoning which will lead to the acquisition of the primary concept in question.⁴⁷ Further, in relation to both evidence and judicial reasoning, the external environmental conditions surrounding the judge over the course of the hearing must be such as to effectively enable the judge to cognitively appropriate relevant evidence and do the requisite reasoning. They must not be such as to prevent these things taking place.

Following through our analysis here, we can further categorise the epistemic conditions affecting the judicial acquisition of a concept in terms of either the internal capacities of the judge or the external circumstances surrounding the judge.⁴⁸ As far as internal capacities go, the judge must, for example, possess sensory apparatus which will enable her to sense appropriate relevant evidence provided to her about the concept under acquisition. She must possess cognitive apparatus enabling her to effectively cognise what she senses by way of evidence. She must possess behavioural apparatus and a behavioural repertoire which will enable her to behave in a concept-acquisitive manner in relation to evidence of that concept – which will enable her to locate and manipulate conceptually relevant evidence in a manner conducive to her acquiring the concept. Additionally, the judge must be able to reason effectively from premises to conclusions about concepts under

⁴⁵ By which I mean, become the subject of some set of intentional states which may, in turn, become the elements of a process of judicial reasoning oriented towards concept acquisition.

⁴⁶ This seemingly trivial requirement actually has important implications for institutional design, as we shall see.

⁴⁷ We might frame this aspect of the judicial mindset in terms of a judicial *ethos* (or ethics) and reflect upon the extent to which the set of virtues traditionally associated with sound judicial practice might include *epistemic* virtues along the lines indicated here. I am grateful to Alex Green for alerting me to this dimension of the issue.

⁴⁸ From a physicalist point of view, both categories of epistemic conditions comprise physically realised phenomena whose nature and effect on judicial concept acquisition is, in principle, knowable on the basis of scientifically sound empirical-cum-interpretive inquiry.

acquisition.⁴⁹ Judicial concept acquisition depends on the amount and nature of the reasoning about the concept in question a judge is willing and able to engage in over the course of the hearing.

This is all to say that the judge must possess a range of theoretical and practical *skills* – understood in terms of the possession of properly functioning sensory, cognitive and behavioural apparatus, appropriate intentional states (beliefs and desires) and an effective behavioural repertoire – in relation to the cognitive appropriation of evidence of and the carrying out of reasoning about those concepts she seeks to acquire. Concept acquisition is not a passive affair. It is a complex form of action oriented towards understanding which has both a theoretical and a practical dimension. The judge must be in possession of those skills which will enable her to engage in such action. She needs a certain knowledge in relation to the oftentimes complex and challenging practice of concept acquisition.⁵⁰

As far as external circumstances relevant to the judicial acquisition of concepts go, this is most importantly a matter of the amount and quality of evidence relevant to acquiring the concept in question which is available to, as well as actually provided to the judge (by legal counsel) for her sensory and cognitive appropriation. It is also a matter of the external assistance, human and technological, available to and actually provided to her in locating, manipulating and cognitively appropriating relevant evidence or engaging in relevant reasoning. This point implicates the important role that the actions of other agents (parties, counsel, witnesses, court officers, and the like) may play in the acquisition of concepts by judges.⁵¹ Also significant here is the time available to the judge to appropriate evidence or engage in reasoning, including any externally imposed time limits. Another key category of external circumstances involves the ambient environmental conditions affecting the judge's sensation and cognition of evidence or the conduct of her reasoning. These conditions include such things as available light, distance and line of sight in relation to the judge and the evidence, as well as background noise and other auditory conditions, and so on. Finally, these external factors may also be taken to comprehend the availability and provision of external technological phenomena such as amplification, computers, vehicles, binoculars, and so on,

⁴⁹ Including the kind of reasoning involved in interpreting the testimonial evidence of witnesses about the concept in question.

⁵⁰ At a more basic level of analysis, some knowledge-sufficient set of her beliefs about the acquisition process and its subject matter must be true. She must also be in possession of appropriate and sufficient (and sufficiently strong) desires as would motivate her to locate, manipulate and cognise relevant evidence and to pursue the amount and kinds of reasoning required to acquire the concept in question. Further, she must possess the behavioural resources to transform those beliefs and desires into action.

⁵¹ A legal hearing is, after all, a collective and cooperative endeavour.

by which the judge's own sensory, behavioural and reasoning capacities may be supplemented or improved.

Thus, there are two individually necessary and jointly sufficient conditions for a judge acquiring a concept – the possession by her of an appropriate and adequate sub-conceptual base, on the one hand, and an appropriate mode and degree of cognitive engagement by her with appropriate evidence and an appropriate exercise of reasoning by her in relation to her beliefs, on the other. We can redescribe these conditions in terms of the obtaining of an acquisition-enabling conceptual base (or degree of conceptual difference) and an acquisition-conducive set of epistemic conditions. If either or both of these conditions for the acquisition by a given judge of a given concept fail, then that concept cannot be acquired by that judge. The obtaining of merely one or the other of these does not enable the acquisition of an alien concept. If a judge is not properly engaged with appropriate evidence or in appropriate reasoning – that is, if suitable epistemic conditions are not obtained – then that judge will not be able to acquire an associated concept no matter how much of that concept's sub-conceptual content she possesses. Likewise, if a judge does not possess sufficient of a concept's sub-conceptual content, she will not (whilst that lack continues) be able to acquire that concept no matter what evidence or reasoning she engages with or in.

F. CONCEPT ACQUISITION, LEGAL NORMS, AND LAW REFORM

In light of all of this, we can imagine a situation in which the degree of sub-conceptual content of an alien concept possessed by a judge (her existing conceptual scheme) at the commencement of a hearing conspires with the obtaining of non-conducive epistemic conditions over the course of that hearing to render the judge unable to perform the acquisitive work required of her. We can imagine a situation in which an alien concept is not acquirable by a judge over the course of the hearing. This is to say that we can conceive of a situation of *conceptual incommensurability* obtaining as far as the judge, the hearing and the concept in question are concerned.⁵² Such a situation is, on the naturalist scheme of things adopted here, theoretically possible – but only contingently so. On the picture of things outlined here, no theoretical necessity attaches to the obtaining of such incommensurability.⁵³

⁵² This term connotes both a difference between the contents of the conceptual scheme of the judge and those agents who maintain the alien concept in question, as well as an inability on the part of the judge to bridge that difference by acquiring the alien concept. See Dorit Bar-on, 'Conceptual Relativism and Translation' in Gerhard Preyer, Frank Siebelt, and Alexander Ulfig (eds), *Language, Mind and Epistemology: On Donald Davidson's Philosophy* (Kluwer Academic Publishers 1994).

⁵³ I take the physicalist-functionalist account of concepts, mind and action outlined earlier as my possibility-defining theory of things for the purposes of this discussion. I define theoretical possibility and necessity with

Likewise, though, it is possible but not necessary that a judge's sub-conceptual base at the commencement of the hearing and the epistemic conditions which exist over the course of a hearing conspire to enable the judge to acquire any alien concept whatsoever over the course of the hearing. The content of a judge's conceptual scheme at the commencement of a trial is a contingent matter. Her scheme may or may not contain sufficient sub-conceptual content for the acquisition of a given concept at trial (assuming conducive epistemic conditions). Whether it does or does not depends upon her environmental and cognitive trajectory up until that point. So too, the nature of the epistemic conditions which exist at hearing is a contingent matter, in the sense that both conducive and unconducive conditions are theoretically possible on the naturalist account of things.

By virtue of their contingency, both the content of a judge's conceptual scheme at the commencement of a hearing and the epistemic conditions which exist for a judge over the course of a hearing may, to a significant extent, be subject to the actions of those agents who constitute and regulate the hearing process and the legal system more generally. This is to say that these things may be subject to some degree of *regulation* by legal norms.⁵⁴ In many contemporary legal systems, such norms include those statutory qualifications requiring that judges, as a qualification for holding judicial office, possess some practically adequate set of sensory, cognitive, behavioural and reasoning capacities; those rules of evidence regulating the kinds of testimony and real evidence which might be tendered to or relied upon by a judge over the course of a hearing; those norms prescribing (roughly) the time which might reasonably be spent by a judge in engaging with any given piece of evidence or, more generally, in acquiring any given concept at hearing; and those norms prescribing certain lighting and auditory standards for a hearing or permitting the use by participants of sensory, reasoning or behavioural aids such as microphones, computers and (when necessary to view a geographic location) vehicles. We can conceive of the actions of all the various agents involved in the judicial concept-acquisition process over the course of a legal hearing, including those of the judge, as being informed both by beliefs about those states of affairs prescribed by applicable legal norms and by desires to make one's own and others' internal

reference to the set of possible worlds in which that account of things is true. From this point, I will use the terms possibility, necessity, and contingency as connoting theoretical possibility, necessity and contingency in this sense.

⁵⁴ I will use the term legal norms to refer to all those norms regulating judicial practice in the relevant sense, notwithstanding that some of them are not legal rules or laws by strict positivist standards. It is worth noting that such norms may be taken to not only regulate but also constitute a component of the epistemic conditions existing in relation to the judicial acquisition of concepts over the course of a legal hearing.

capacities, actions and external circumstances conform to some degree with those (believed) states of affairs.

As a philosophical naturalist, this author subscribes to the view that legal norms themselves are theoretically contingent, socially constructed phenomena capable of being formulated, reformulated and eliminated so as to provide for the obtaining of a range of situations, all within the bounds of theoretical possibility.⁵⁵ As such, the contents of legal norms – specifically, the standards they prescribe in relation to the conceptual ‘qualifications’ of the judges they empower and the epistemic conditions of the hearing processes they regulate – are contingent upon the nature of the thoughts and actions of those agents who actively constitute those norms. Further, within the parameters of the physicalist-functionalist theory of things adopted here, the thoughts and actions of such agents are (largely) contingent phenomena which may take a wide variety of forms, including forms facilitating the judicial acquisition of concepts. There is then no reason to believe that any theoretical necessity operates upon the content of legal norms preventing them from providing, as general matter, for a prior judicial conceptual base and set of epistemic conditions conducive to the acquisition of any concept. Thus, the system of legal norms presently operative within a jurisdiction both prior to and during a judicial hearing is, in principle, capable of being reformed so as to enable any of the range of theoretically possible judicial conceptual schemes and epistemic conditions to be obtained at hearing, including those schemes and conditions most conducive, as a general matter, to the acquisition of any concept. Law reform – even radical law reform – in the service of an enhanced judicial concept-acquisitive capacity is a theoretically live option within the physicalist-functionalist scheme of things maintained here.⁵⁶

⁵⁵ On this point, I am sympathetic to Hart’s view of legal norms as social facts: collective complexes of human thought and action. HLA Hart, *The Concept of Law* (2nd edn, Clarendon Press 1994). See also, Edna Ullmann-Margalit, *The Emergence of Norms* (Clarendon Press 1977); Joseph Raz, *Practical Reason and Norms* (Princeton University Press 1990); Frederick Schauer, *Playing by the Rules: A Philosophical Examination of Rule-Based Decision-Making in Law and Life* (Clarendon Press 1991). I might say here that I do not believe that adopting a non-positivist theory of legal norms would significantly affect the nature of the analysis and reform agenda outlined in this paper.

⁵⁶ In this respect, the theory of things outlined in this paper may be distinguished from those radically pessimistic accounts of judicial practice in the cross-cultural sphere offered by certain so-called ‘post-modern’ theorists, which assert a necessary conceptual incommensurability and associated judicial conceptual incapacity. On such accounts, the prospects of success for law reform in this area of legal practice are low and efforts along this line largely futile. Jacques Derrida is an influential theorist who has been taken by some to maintain such a view. Jacques Derrida, ‘Force of Law: The “Mystical Foundation of Authority”’ (M Quaintance, Trans) in Drucilla Cornell, Michael Rosenfeld and David Gray Carlson (eds), *Deconstruction and the Possibility of Justice* (Routledge 1992). See also Mary E Turpel, ‘Aboriginal Peoples and the Canadian Charter: Interpretive Monopolies, Cultural Differences’ (1990) 6 Canadian Human Rights Yearbook 3; Penelope Pether, ‘Principles or Skeletons? Mabo and the Discursive Constitution of the Australian Nation’ (1998) 41 Law Text Culture 115.

It is not the aim of this paper to elaborate upon a detailed set of reform proposals in relation to the concept-acquisitive potential of legal systems, valuable as such a project might be. There may be some use, though, at this stage in providing a brief critical overview of certain key norms presently regulating the judicial acquisition of concepts within a number of common law jurisdictions with the intention of clarifying some (at least) of the applied, legal reformist potential of the preceding, largely philosophical analysis. The discussion to follow, then, is intended to be representative and illustrative, rather than comprehensive. It is intended to give some indication of the kind of substantive legal analysis, consistent with the philosophical analysis which has been carried out here, which might be engaged in in pursuing a critical and reformist agenda in this sphere of legal practice.

1. Legal Norms and the Judge's Prior Conceptual Scheme

Consider, to start, the relationship between legal norms and the first element of the overall conditions determinative of the judicial capacity to acquire an alien concept – namely, the content of judges' conceptual scheme at the commencement of hearings. It follows from our discussion so far that the degree of conceptual difference which exists between judges and alien concepts or bodies of thought and practice (discourses) might be 'lessened' – that is, judges might come to legal hearings in possession of a greater store of relevant sub-concepts and beliefs – were they to be subject over the course of their career to an ongoing process of familiarisation in relation to those concepts and discourses which they have some likelihood of coming into contact with over the course of their tenure – whether those concepts and associated discourses be scientific, medical or socio-cultural.⁵⁷ That is, rather than rely upon ad hoc judicial enculturation into alien conceptual schemes on a hearing by hearing basis, the process of enculturation might be pre-empted to some extent by a sustained and legally regulated process of what we might broadly envisage as interdisciplinary or cross-cultural education. By such means, the amount of concept-acquisitive work demanded of a judge over the course of a hearing – whatever the epistemic conditions which actually present at hearing – might be reduced and the acquisition of relevant alien concepts facilitated.⁵⁸

⁵⁷ So, for example, a strategically targeted (and, of course, relatively limited) education in medical matters might be offered to those judges who presently or who intend to regularly practice in the area of medical negligence.

⁵⁸ Though some moves towards judicial education of this kind are, in fact, currently underway within the legal systems of a number of jurisdictions, they have been limited. These jurisdictions include Canada, Australia and the US. See Livingston Armytage, 'Policy Development in Continuing Judicial Education: An Assessment of Some Approaches Taken in N.S.W., U.S.A., U.K., and Canada' (1993) 11 *Journal of Professional Legal Education* 51; Helen Gregorcuk, 'The Desirability of Judicial Education in Australia' (1996) 14 *Journal of Professional Legal Education* 77; John Williams-Mozley, *Overview Report on the National Aboriginal Cultural Awareness Program 1993-2000* (The Australian Institute of Judicial Administration 1999); Michael Kirby,

Alternatively or additionally, the norms presently regulating the selection of persons for duty as judges likely to be involved in proceedings involving alien concepts might be reformed so as to ensure that such selection draws exclusively from a field of persons already enculturated to some degree into the discourses in question. For example, relevant medical experience might be made a prerequisite for adjudicating upon medically complex tort matters or relevant scientific or engineering experience for intellectual property matters. Likewise, anthropological or sociological expertise might be made a prerequisite for appointment to indigenous or minority rights cases.⁵⁹

There is no denying, of course, the extent of the challenge involved here. The number of alien concepts and discourses judges might encounter over their careers may be quite substantial – particularly in light of a rapidly evolving scientific and technological terrain. It may not be feasible to even attempt to cover all or even most fields or to keep up with all or even most changes in those fields. Further, there are values and aims other than effective judicial concept acquisition which many legal systems are also concerned with pursuing, including public policy aims such as ensuring fairness to the parties, or optimising the efficient disposal of cases. These may compete with or frustrate an unfettered law reform along the lines suggested here. Nonetheless, some amelioration of the concept-acquisitive task facing judges may, as a general matter, be gained by initiating or furthering law reform of the kind mentioned.

2. Legal Norms and the Judge's Epistemic Conditions

As far as the epistemic conditions which generally exist over the course of legal hearings are concerned, all of which are regulated by some or other set of legal norms, a range of law reform opportunities present themselves by which the concept-acquisitive capacities of judges might be improved.

a) Internal capacities

By way of example, in relation to that category of epistemic conditions to do with the internal capacities of judges, the legal system might be rendered more concept-acquisitively effective

'Modes of Appointment and Training of Judges – A Common Law Perspective' (2000) 26 Commonwealth Law Bulletin, 540; Michael Cooke, *Indigenous Interpreting Issues for Courts* (The Australian Institute of Judicial Administration 2002); J Clifford Wallace, 'Globalisation of Judicial Education' (2003) 28 Yale Journal of International Law 355; Lynn Smith, 'Judicial Education On Context' (2005) 38 University of British Columbia Law 569. Further reform of existing norms regulating such education so as to improve its quality, duration and regularity might be expected to improve things in this regard.

⁵⁹ In a number of *non-judicial* decision-making contexts in Australia and elsewhere something like what is outlined here is already in place. Examples include professional disciplinary proceedings, as well as certain culturally-specific restorative justice proceedings.

if the norms regulating the selection, dismissal and ongoing functionality and motivation of judges were such as to ensure the employment of persons who possess and maintain a high standards in relation to these capacities. On this approach, only persons with suitable sensory and cognitive faculties, motivation and theoretical and practical skills would be appointed to and retained on the bench.⁶⁰ Those without these skills would be liable to redeployment to those matters where concept acquisition might be less prevalent or, perhaps, even liable to dismissal. In any event, active judges would be subject to ongoing support in maintaining their faculties, motivation and skills by way of skills training and education, the provision of employment conditions conducive to ensuring good mental and physical health, and so on.

Most legal systems are, at present, already largely oriented towards the appointment of persons with suitable faculties and motivation. They may not, though, be sufficiently oriented towards the ongoing maintenance of those faculties or to the ready redeployment or dismissal of those whose faculties have fallen below an acceptable standard.⁶¹ So too, it might be argued, the present norms regulating many jurisdictions adequately ensure neither the appointment of persons adequately skilled in scientific or cross-cultural concept acquisition, nor the ongoing education of existing judges in developing and perfecting such skills.⁶² From a purely concept-acquisitive perspective, further reform may be necessary in this area of law.

b) External circumstances

The other category of epistemic conditions judges are subject to over the course of hearings is that relating to their external circumstances. Perhaps the most important of these concerns the availability and cognitive accessibility of evidence relevant to the alien concepts under acquisition. As a preliminary point, the capacity of a judge to acquire a concept depends crucially upon the very existence of evidence about that concept adequate to her acquisitive task. If there is no (or no practically adequate) real or documentary evidence in the world informative of the content of that concept or no (or no practically adequate set of) agents capable of testifying about the content of that concept, then the judge will not be able to

⁶⁰ This statement should not be taken as implying that some generic set of sensory faculties is required of judges. Persons with non-standard sensory endowments (the visually or aurally challenged, for example) may be entirely suitable to the role with or without extrinsic aids, making up in one area of sensory capacity what they might lack in another.

⁶¹ Judicial tenure norms, though justifiable with reference to political ends (independence from executive interference, for example), may not serve purely epistemic ends as effectively. An important and difficult balancing act is at work here.

⁶² Though this point intersects with the point made earlier about the enculturation of judges into alien concepts and discourses, I am not referring here to the judge's possession of alien concepts but to their possession of generic skills by which they might acquire such concepts. The analogy here is with those generic skills of enculturation which anthropologists are taught and acquire in relation to their dealing with other cultures.

acquire the concept by evidential means. Hence, general extra-legal circumstances surrounding the production, preservation, and acquisition of relevant evidence importantly condition the ability of a judge to acquire new concepts. This is an important issue in the area of indigenous land rights litigation where artefactual evidence relevant to the success of claims is often at risk of destruction and where elderly indigenous witnesses with unique knowledge of the claim and associated culture are at risk of passing away or becoming otherwise incapacitated before they are able to give their testimony.⁶³ To the extent that legal norms are capable of regulating such matters, law reform might be engaged in oriented towards ensuring the preservation and acquisition of any such evidence.⁶⁴

Closer to home, the resources available to the parties involved in a legal matter in making relevant evidence available to the judge (including the knowledge and skills of their legal counsel in effectively identifying and tendering such evidence) are also important external circumstances here. Laws ensuring that parties – for example, indigenous or other minority claimants in indigenous and minority rights cases – are adequately resourced so as to effectively make out the evidential elements of their cases might be enacted or improved.⁶⁵ Existing legal aid provisions in many jurisdictions might be reformed to include mechanisms for the more regular engagement by disadvantaged groups of highly competent counsel, expert witnesses and other advisers. Alternatively, replacing the present adversarial mode of inquiry presently provided for in common law jurisdictions with a more inquisitorial mode might render the judicial interpretive and epistemic role more effective (judges would be less dependent on the parties and their resources) – provided, of course, that the judiciary and its investigative staff were adequately resourced. In any event, whatever the legal regime, the judiciary should be adequately resourced to enable them to perform their concept-acquisitive role more effectively.

An additional important factor here concerns the quality of witnesses in relation to their capacity and willingness to effectively impart information to a judge about alien concepts. The selection and preparation of those witnesses best able to convey pertinent

⁶³ See on this, Jo-Anne Byrne, *The Perpetuation of Oral Evidence in Native Title Claims* (National Native Title Tribunal 2002).

⁶⁴ As far as the preservation of relevant real evidence about the concepts of cultural minorities goes, cultural heritage protection legislation oriented towards the protection and preservation of significant minority cultural places and artefacts, offers an instance of the kind of legal norms which presently apply in many places and which might be reformed (or, in other places, introduced). As far as the availability of suitable witnesses is concerned (particularly culturally different minority witnesses), far more complex and structural issues come into play in relation to law reform – including, for example, issues to do with those laws affecting minority health, life-expectancy and education.

⁶⁵ Michael Asch and Catherine Bell, 'Definition and Interpretation of Fact in Canadian Aboriginal Title Litigation: An Analysis of Delgamuukw' (1994) 19(2) *Queen's Law Journal* 503, 532-3.

information to a judge may be affected by legal norms regulating the quality of legal counsel and the soundness of their advice to clients and witnesses and their courtroom advocacy. The quality of witnesses here may also be affected by norms providing for the informing of parties and witnesses – including scientific witnesses but especially, perhaps, those from minority cultures – about the operative legal process, both as it pertains to their case and generally. Further, alerting relevant witnesses to the effects which their discourse-specific or culturally-specific mode of interaction might have on the judge may also be of use in improving the quality of information about concepts provided to the judge.⁶⁶ Overall, the better relevant witnesses understand the legal system and their specified role within it, the better able they will be to navigate that system's evidentiary demands and provide the judge with what she needs to properly perform her role. Where legal regulation affects the quality of that understanding, legal reform may be able to make a contribution here.

One factor which can assist in this regard and which is presently subject to legal regulation in many jurisdictions in relation to cultural minorities is the provision of interpreters at hearing. These agents are tasked with the job of assisting culturally different witnesses to effectively convey their evidence, as well as helping the judge, counsel and others to understand that evidence. Within the normative regime regulating their actions at hearing in a number of jurisdictions, such interpreters may serve not only as translators of alien languages (including minority dialects of the dominant tongue) into the standard form of the dominant tongue (or, indeed, into legal variants of that tongue) and vice versa, but also in a more general explanatory role as mediators and facilitators of communication between culturally different witnesses and the judge and other agents involved in the hearing.

For example, interpreters might advise culturally different witnesses on the cultural and specifically legal practices and interactional styles of those dominant societal agents involved in the hearing, as well as advise those agents about the cultural practices and interactional styles of culturally different witnesses.⁶⁷ So, too, in the scientific sphere we

⁶⁶ Michael Cooke and others have noted the way in which certain of the interaction styles of members of cultural minorities may be misinterpreted by legal agents, compromising communication between them. Michael Cooke, 'Aboriginal Evidence in the Cross-cultural Courtroom' in Diana Eades (ed.), *Language in Evidence: Issues Confronting Aboriginal and Multicultural Australia*: (University of New South Wales Press 1995). These have been identified by Diana Eades as including a failure to make eye contact during conversation, an indirect style of providing information, an aversion to 'either-or'-type questions, and gratuitous concurrence to certain kinds of question or assertion. Diana Eades, 'A case of communicative clash: Aboriginal English and the legal system' in John Gibbons (ed), *Language and the Law* (Longman 1994). Scientists, too, may be guilty of their own 'culturally specific' and sometimes ineffective modes of communication.

⁶⁷ In discussing the Australian indigenous rights situation, Graeme Neate points out that "[w]hen translating a question or an answer the interpreter may, quite properly, wish to give a detailed explanation of the concepts used. This will, on the one hand, go beyond a strict translation (if such a translation be possible) and may tend to

might imagine the use of scientifically literate ‘interpreters’ who perform a similar task, mediating the communication of scientific expert witnesses to the court with a view to optimising the judicial acquisition of science-based concepts.⁶⁸

To the extent that the present set of legal norms in a given jurisdiction inhibits the capacity of interpreters to facilitate cross-discursive or cross-cultural understanding between the agents in question (and a number of commentators have argued that it does⁶⁹), those norms might be reformed. This might occur by making interpreters more available to parties and judges, by loosening up the conditions under which they may be relied upon, and by improving the quality of their cross-discursive understanding – including their understanding of legal process. As in all the areas discussed here, considerations relating to reform need to be tempered by those other, often non-epistemic values and ends which are maintained by the legal system, such as fairness to all parties and the need to maintain the integrity of the independent fact-finder’s role, for example.

Another aspect of the legal regime in a number of jurisdictions which has facilitated conducive epistemic conditions for the acquisition of alien concepts through improving the quality of the hearing environment – and one linked to the preceding discussion – are those legal rules which authorise the holding of all or part of the hearing at some relevant geographic location. A range of concept-acquisitive issues are addressed by the provision of this option to a judge.

First, being physically in an evidentially relevant environment rather than merely hearing about it via testimony or viewing it by photographic or other means will generally improve a judge’s sensory and cognitive access to any relevant real evidence of alien concepts which might subsist on site there. Such an alternative to the courtroom may also provide an environment in which witnesses to concept-relevant facts may more comfortably – and, hence, more effectively – present their testimony. A number of commentators have noted the obstructive effect which the standard court environment in most modern jurisdictions has on the effective provision of evidence by witnesses unfamiliar with such

be an explanation incorporating the interpreter’s view about the information sought or the answers being given.” Graeme Neate, *Land, law and language: Some issues in the resolution of Indigenous land claims in Australia*. Paper presented at the Conference of the International Association of Forensic Linguists, Sydney (2003), 37-8. Of course, there are important legal issues here to do with the risk of an interpreter slipping out of her legitimate role as a translator of testimony to one in which she acts as an independent and putatively expert witness about matters of fact in issue at the hearing. See Michael Black, ‘Developments in Practice and Procedure in Native Title Cases’ (2002) 13 *Public Law Review* 16 and Neate *ibid*, on this.

⁶⁸ This is assuming that the scientific expert witness is unwilling or unable to assist the judge themselves in this regard.

⁶⁹ See, for example, Eades (n 66) and Cooke (n 66).

environment.⁷⁰ Again, in indigenous land title matters, indigenous witnesses have been found to be more relaxed and informative giving their evidence ‘on country’ than in a courtroom dealing merely with photos and maps of the land under claim.⁷¹

Of course, whether in the field or in the courtroom, witnesses testifying to the content of an alien concept are presently subject in many jurisdictions to the norms establishing and maintaining an adversarial mode of fact finding within the legal process. Under this mode, the testimonial evidence of witnesses in relation to alien concepts is provided to the court by way of responses to questions asked by counsel leading the evidence. Those responses are then subject to testing by way of questions asked by opposing counsel in cross-examination. It is commonly thought that this mode of fact finding best serves the interest legal systems maintain in fair, effective and efficient truth-finding, through enabling the parties themselves to gather and present the evidence they think best serves their case and to rigorously test the reliability of the evidence gathered and presented by other parties.⁷²

Empirical research, however, has noted the detrimental effect that various aspects of the adversarial process can have on the capacity of witnesses – particularly, members of culturally different minorities – to effectively testify about relevant matters. The most notable of these is that set of norms which often permits the aggressive and manipulative cross-examination of witnesses by counsel for other parties.⁷³ Evidence also points to the fact that members of certain culturally different groups are insufficiently skilled in the question-answer mode of interaction as a communicative strategy – even when that mode is engaged in in examination-in-chief, let alone under the emotional and cognitive pressure of cross-examination. Many such people maintain alternative modes of communication – less linear or more narrative in style – which are often interfered with by the strict question and answer demands of the adversarial mode.⁷⁴ As a result, the capacity of culturally different and other

⁷⁰ Diana Eades, ‘Misunderstanding Aboriginal English: The Role of Socio-cultural Context; in Graham R McKay and Bruce A Sommer (eds), *Further Applications of Linguistics to Australian Aboriginal Contexts* Occasional Papers No. 8, (Applied Linguistics Association of Australia 1984); Eades (n 66); Cooke (n 58) and (n 66); Neate (n 67).

⁷¹ Black (n 67). As part of the ethos underlying this approach, judges in Australian indigenous land title claims have themselves taken to adopting a less formal and hierarchical stance, sitting with indigenous claimants under trees in open necked shirts and speaking to them in a style which is intended to be less intimidating and more intelligible to them.

⁷² Andrew Ligertwood, *Australian Evidence* (Butterworths 1988). This system is said to serve fairness by ensuring that the judge stays out of the evidence gathering and testing process and maintains an impartial stance towards all parties.

⁷³ Michael Walsh, ‘Interactional styles in the courtroom: an example from northern Australia’ in John Gibbons (ed), *Language and the Law* (Longman 1994), 231; Eades (n 66), 241-6; Cooke (n 66), 77.

⁷⁴ Eades (n 70); Diana Eades, *Aboriginal English and the Law: communicating with Aboriginal English speaking clients: a handbook for legal practitioners* (Queensland Law Society 1992). In the indigenous rights context, Neate (n 73), 25 states that “the elicitation of information by direct questioning is generally foreign to

witnesses to provide information about alien concepts within the adversarial mode may be compromised.

To the extent that the legal rules and the application of those rules by judges permit such a mode of interaction, epistemic effectiveness on the part of the judge would demand the reform of those rules and their application so as to provide for a less adversarial approach to the giving of testimony. It must be noted again, though, that fairness concerns vis-à-vis other parties to the proceedings (who may be concerned about the reliability of the testimony in question and who may want the reliability of that evidence tested in the crucible of strong cross-examination) currently serve as a significant constraint on reformist tendencies in this particular regard.⁷⁵ These concerns are legitimate ones, not unproblematically ignored or otherwise marginalised in pursuit of concept-acquisitive reform.⁷⁶

G. CONCLUSION

The practical issues raised in the latter part of this paper are all important and interesting ones, deserving of a more thorough exploration. Regrettably, such exploration is a task to be pursued – in detail, at least – in another context. The predominant purpose of this paper has been to provide a philosophically and legally informed basis for the pursuit of a sustained and systematic consideration and, if necessary, reform of the legal norms regulating judicial concept acquisition. The assumption that we have been working with here is that the likely effectiveness of any such reform will be enhanced by its grounding in a sound philosophical analysis of how things relevantly are in this sphere. An important meta-theoretical aim of this paper has been to serve as a token of or pointer to the contribution which naturalistic philosophical analysis – a practice often derided for its practical and political inertness – might make to the cause of legal reform. Effective law reform demands an adequate understanding of both the relevant legal norms and the phenomenon regulated by those norms. An adequate understanding of these things is only possible upon a sound – which is to say a naturalistic and analytic – philosophical foundation.

Aboriginal people and indirect discourses are often preferred.” See also Cooke (n 66), 279 and Walsh (n 73), 231.

⁷⁵ Ligertwood (n 72), 321-2.

⁷⁶ In a number of jurisdictions there has been significant reform of traditional legal rules in relation to the questioning of culturally different witnesses. For example, in the Australian indigenous land title sphere, a range of statutory rules have been enacted which have enabled judges to manage the questioning of indigenous witnesses so as to assist them in communicating their knowledge and their concepts to the court, whilst at the same time providing for the legitimate interests of other parties to the claim. See Stephen Odgers, *Uniform Evidence Law* (LBC Information Services 2000), 55 and Neate (n 67), 37-38, on this.