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0521851394 - Generating Predictability: Institutional Analysis and Institutional Design

Christoph Engel

Excerpt

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# 1 Introduction

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## 1.1 The puzzle

The obvious is often not self-explanatory. We obviously interact with others in a meaningful way. This presupposes that we can predict reasonably well what another person is going to do, and how he is going to react to our own moves. Yet psychology demonstrates the almost unlimited plasticity of human behavioural dispositions.<sup>1</sup> Why are we nonetheless able to interact successfully? This book claims that, to a substantial degree, it is because of institutions.

To use a metaphor: wild animals have fur to survive hostile weather. Humans are left naked by nature. They must sew clothes for the purpose. Likewise, animals have instincts to make their behaviour predictable to their peers. Humans again are forced to take recourse in artefacts for the purpose.<sup>2</sup> In both domains, the paucity of their natural endowment makes humans more needy. But they need not wear their fur when they move from Scotland to Sicily. Their less ready-made endowment thus makes for greater adaptability. The same holds for the mental endowment of humans. To a very high degree, it consists not of hard-wired solutions, but of the ability to find appropriate solutions in reaction to a permanently changing environment. But the Scots do wear furs (or modern equivalents). Likewise, humans often have to seek out mental clothing if they want to interact. This book purports to show that, and how, institutions provide humans with a rich wardrobe of mental clothes, all making them more predictable.

<sup>1</sup> The term is used in psychology, see e.g. Mischel and Shoda 1995: 246; it will be further fleshed out below, see in particular 2.1.3. NB. For ease of use, the masculine pronoun is employed throughout the book.

<sup>2</sup> The point has frequently been made. A characteristic voice is Anderson 2000b: 1: 'humans are exceptional in how plastic they are behaviourally'. For a stimulating account of the neurological bases, see Hebb 1949: 166–7. Consequently, for predicting human behaviour it is not sufficient to know the (human) species. One must know the history of the individual being, since, via learning, it has made an impact on its behavioural dispositions. Hebb 1949, 166.

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Let's be a little more explicit with respect to the elements of our puzzle, although a thorough analysis is to follow in later chapters. From the ancient Greeks onwards, observers have been overwhelmed by the unpredictability of their fellow humans.<sup>3</sup> For centuries, René Descartes' dualistic concept of human nature provided scientists with an intellectual tool to cope with the problem. In his perspective, all human behaviour is either one way or the other: either deterministic or volitional; either driven by reflex or an exercise of free will.<sup>4</sup> More than two hundred years later, scientists such as Ivan Petrovich Pavlov<sup>5</sup> and Charles Scott Sherrington rejected dualism.<sup>6</sup> For them, at closer sight, all human behaviour was deterministic. It was all reflexes. At least at the neurological level, the predictability problem then fades away. Today's neurobiologists also claim monism, but the other way round. For Paul Glimcher, all behaviour is probabilistic, even if it looks highly determined to an observer who sees only behaviour, not how that behaviour is generated mentally.<sup>7</sup> At least at the neurological level, the predictability problem then becomes pervasive. And the overview presented in chapter 2 of this book will demonstrate that the neurological plasticity to a remarkable degree translates to the symbolic level, that is, to human behavioural dispositions.

Predictability is paramount for co-ordination. If Ego has no clue as to how Alter is going to behave, Ego is better off staying as far away from Alter as possible. In economic terms, one can say precisely why. Humans are not born with identical endowments. Some have greater physical forces, others have quicker minds, to name only one dimension. By division of labour, they can exploit this diversity and make both co-operating individuals better off.<sup>8</sup> But the division of labour can only work if it makes sense for Ego to use some of his endowment on Alter's behalf. It does if Ego can reckon on Alter reciprocating. If the transaction is on the spot, Ego may be able to withhold his own contribution until Alter delivers. But often, simultaneous exchange is not within reach. Ego offers Alter a favour today, but he expects Alter to respond with a favour later. Economists have studied this situation at length.<sup>9</sup> But they have focused on a different aspect of the problem. They have asked

<sup>3</sup> The fascinating history of the neurosciences in Glimcher 2003 can also be read as a history of conceptualising human unpredictability; explicit references to predictability are to be found on, among others, pages 13, 27, 39, 272–3.

<sup>4</sup> Descartes 1664.

<sup>5</sup> Pavlov and Anrep 1927.

<sup>6</sup> Sherrington 1906.

<sup>7</sup> Glimcher 2003: 273 and *passim*.

<sup>8</sup> A much more elaborate account is to be found in Engel 2002b.

<sup>9</sup> A prominent contribution is from Williamson 1985.

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why Alter should have any interest in keeping his earlier implicit or explicit promise. But even if Alter is an honourable and caring citizen, the enormous plasticity of human behavioural dispositions might make it difficult for him to keep his promise. More importantly even, a breach of contract may not result only from outright 'opportunism'.<sup>10</sup> It suffices if Alter does nothing to counteract the low natural predictability of his own future behaviour. And, of course, not all human interaction involves mutual exchange. Pedestrians must predict whether cars are likely to stop at a red traffic light. Government must predict whether consumers are likely to drive less, and hence help the ailing atmosphere, if government doubles the price of petrol. These few examples should make it clear that human interaction could not be anywhere near as manifold as it is, had human beings not found ways drastically to narrow down the natural plasticity of their behaviour.

Predictability is thus defined very broadly here. It encompasses any situation where Ego would wish to know how Alter is going to behave in the future. Specifically, full predictability is defined as follows: Alter's behaviour is fully determined; Ego has access to the information about the determining mechanism, and about the presence of the input necessary from the environment to get the mechanism going. It is obvious from this definition that full predictability is extremely rare. The predictability problem, thus defined, is pervasive. This breadth is nonetheless justified. First of all, the most prominent model in the social sciences, the rational choice model, makes exactly this assumption. For it is a pure motivational model. Social interaction fails because the interaction partners are driven by conflicting interests. Any cognitive problem is assumed away. Moreover, it is true that institutional intervention typically creates no more than what will be called soft predictability.<sup>11</sup> But understanding why such prudence is warranted presupposes that the analysis starts from the idea of generating the maximum, that is, full predictability.

Finally, the basic claim of this book is the following: institutional analysts have fallen prey to their own role as actors within environments shaped by institutions. They have thus implicitly confounded the roles of observers and actors. In real-life environments, the predictability problem is indeed often not grave. Ego can take it for granted that the behavioural space of Alter is severely reduced. Ego can reckon that Alter will exploit almost none of the plasticity of his behavioural dispositions

<sup>10</sup> Williamson 1985: chapter 2, appendix has coined this term for the deliberate breach of promise.

<sup>11</sup> See below 3.2.9(e).

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in the situation at hand. Consequently, Ego can rightly focus on the remaining uncertainty, and on Alter's interests in particular. When they designed their research questions, institutional analysts wrongly started from their own real-life experiences. But the neatness of this situation is not natural. It is generated by heavy institutional intervention. Put differently, most context is not simply out there. It has been generated by institutions. This neglected institutional task becomes visible if the analysis starts from the broad concept of predictability just presented.

There are two qualifications. Predictability is not always a good thing. If Alter risks being Ego's prey, Alter is clearly better off not being predictable. Nature has even endowed animals with mental tools for generating randomness for the purpose. The classic example is the hare darting back and forth. Likewise, humans change their itineraries if there is a risk of being robbed. Alter's unpredictability can even be to Ego's benefit. If birds of prey were able to extinguish the target population, they would starve in the long run. Having a hard-to-hit target thus helps sustain the natural equilibrium between both populations.<sup>12</sup> A second benefit of unpredictability is more complicated to demonstrate. The full demonstration will be made in the rational choice part of this book. Suffice it at this point to mention the basic intuition. Egoistic actors can be caught in stalemate. Both would be individually better off if they co-operated. If, however, only one of them does, he becomes vulnerable to being exploited by the other. In such contexts, adding some uncertainty can make it rational to co-operate.<sup>13</sup>

The second qualification concerns sources of unpredictability. Although the character of behavioural dispositions is the most important source practically speaking, it is not the only one. Other sources include an overwhelming degree of complexity that goes beyond the cognitive abilities of Ego,<sup>14</sup> the neglect of available information,<sup>15</sup> or the inappropriate weighing of recent, salient information, at the expense of information about the past.<sup>16</sup> More generally, the limitation may lie not only in Alter's behaviour, but also in Ego's limited ability to cope with it. This point will be taken up at the end of this book.<sup>17</sup>

<sup>12</sup> The idea has been fleshed out in resource economics, see e.g. Hartwick and Olewiler 1998.

<sup>13</sup> More below 3.2.3(c).

<sup>14</sup> Elster 1989: 4; Glimcher 2003: 39–40; an interesting example is discussed by Walker et al. 2000: 218.

<sup>15</sup> Elster 1989: 8.

<sup>16</sup> Elster 1989; see also below 2.2.3(c) on deviations of standard subjects from statistical norms.

<sup>17</sup> See below, chapter 5.

This book not only uses a broad definition of predictability. It also defines institutions in a liberal way.<sup>18</sup> Any outside intervention that impacts on behaviour is here seen as an institution.<sup>19</sup> The intervention need not be legal or in other ways formal. In order to qualify as an institution, there are no particular requirements for structure.<sup>20</sup> The impact on behaviour can be the side-effect of activities aimed at other purposes. The behavioural effect can rest on the interaction between several coordinated or unco-ordinated interventions. The institution can, and indeed often will, comprise an entire institutional arrangement, rather than one single intervention.<sup>21</sup> The concept used here includes symbol systems, cognitive scripts and moral templates. It thus does not make a distinction between institution and culture.<sup>22</sup> The institution need not be purposively designed; it can result from some form of evolution, the course of which no single planner has directed. Only one definition offered in the literature is excluded: mere regularities of behaviour are not seen here as institutions.<sup>23</sup> This follows from the purpose of this book. It aims to understand how the individual obtains help from the outside – i.e. from institutions – to solve problems he could not solve on his own.

Again, this breadth is necessary to capture the essence of the problem. In reality, sometimes there is indeed ad hoc, targeted intervention to overcome one specific reason for unpredictability. For instance, untrained persons make many mistakes in using information on probabilities.<sup>24</sup> They do much better if this same information is given to them in the form of natural frequencies.<sup>25</sup> They then are told that, say, 5 cases out of 1,000 fall into some category, rather than 0.05 per cent of them.<sup>26</sup>

<sup>18</sup> For an overview of the many possibilities for defining institutions, see DiMaggio and Powell 1991; Hall and Taylor 1996; Peters 1999; Engel 2001b: 1–5; cf. also below, chapter 7.

<sup>19</sup> In this, the book follows North 1990: 3, who defines institutions as the ‘rules of the game in society or . . . these humanly devised constraints that shape human interaction’; Sweet 1999: 150 explicitly embraces this definition; Nee 1998: 12 similarly notes: ‘Sociology as a discipline has specialised in the study of humanly devised constraints’; in line with this, according to Nee 1998: 8, ‘institutions, defined as webs of interrelated rules and norms that govern social relationships, comprise the formal and informal social constraints that shape the choice-set of actors’; the criterion is also implicit in Peters 1999: 146, who finds it as common ground of all competing strands of institutionalist thinking.

<sup>20</sup> On this, see Peters 1999: 18.

<sup>21</sup> Cf. Hodgson 1988: 179, pointing to this implication of North’s definition.

<sup>22</sup> Hall and Taylor 1996: 947 see this as a characteristic of sociological institutionalism rather than political science institutionalism.

<sup>23</sup> This definition is prominently used by Hodgson 1998: 179 and *passim*. It goes back to Veblen 1919: 239 and to Hamilton 1932: 84.

<sup>24</sup> For an overview, see below 2.2.3(c).

<sup>25</sup> Hoffrage et al. 2002.

<sup>26</sup> This is particularly helpful for the correct treatment of conditional probabilities.

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But most cases are different. Intervention is much more diffuse. Predictability is increased in many respects at a time. Moreover, the intervention often does not only affect predictability. It also changes incentives. A characteristic example is the imposition of professional training. If a layman interacts with a professional, he comes with a whole set of expectations, and most of them are warranted most of the time. Moreover, being a member of the profession changes the opportunity structure. The individual professional knows that he will have to interact with his peers for decades, and that they will have joint interests in defending themselves from outside actors such as the government.

In its analytic part, the mission of this book is to reconstruct institutions rationally. Many of them serve a purpose that is typically neglected by institutional analysis: the generation of predictability. In order to make this claim, the book follows three indirect routes. Relying on evidence from the behavioural sciences, it demonstrates that the human mental endowment is a source of dramatic unpredictability. Relying on a game theoretic model, it demonstrates the limited ability of interaction partners to solve the predictability problem from scratch. Relying on institutional phenomenology, it demonstrates how many existing institutions can be interpreted as tools for easing the predictability problem.

Scientists from a culture of rigorous empirical testing will see all this as an exercise in generating hypotheses. They would want to test these hypotheses in experiments, or at least in meticulously controlled fieldwork. This is not done here. It would be beyond this author's competence. But it might also be difficult to do for reasons of principle. The basic hypothesis is that it is largely because of institutions that humans can interact in a meaningful way. In an institution-free environment, the problem of generating predictability would be overwhelming. How could this hypothesis be tested? In theory, the test is easy to design. Put a number of individuals in an institution-free environment, and observe what happens. According to the prediction, they would either fail to co-operate, or they would start creating their own institutions. But it is not easy to design such an environment. Not many subjects would be willing to stay in the laboratory long enough. If they know that the experiment is short-lived, they are likely to behave differently than they would otherwise. It would not be easy to control for the presence in the laboratory of informal institutions that subjects bring from their culture of origin. The very design of the experiment could serve as an informal institution that makes the predictability problem easy to solve for the participants. But other researchers may be more optimistic, and they may know after the fact that they were right.

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The topic of this book is a puzzle. Is it also a policy problem? Do the existing institutions fail to allow individuals properly to predict the behaviour of their interaction partners? Does individually or socially beneficial interaction fail to take place? Are the existing institutions unduly costly, or do they take suboptimal form?

Since prediction is fundamental to co-operation, it should not come as a surprise that the predictability problem is more often solved than not. Consequently, the contribution of this book to institutional analysis is more profound than its contribution to institutional design. But the implications for design are not negligible.

The design task is most visible if interaction takes place in an almost clean, context-free environment. Currently, the most prominent example is interaction over the Internet. On the Internet, people from the other side of the globe are just a click away. One usually has never seen those with whom one is interacting, and this is not expected either. One often has not even seen the face of one's online interlocutor, and only a webcam makes it possible to observe his reactions. Often nicknames even conceal the identities of those communicating. If an Internet user wants to go further, he can rely on encryption and remailing services.<sup>27</sup> Yet people use the Internet for a host of purposes, including trading goods. How do they overcome the predictability problem? They rely on the services of intermediaries. If the seller is a firm, the typical intermediary is a credit card organisation. For the credit card companies have chargeback systems. If the seller does not deliver on his promises, the buyer is reimbursed by the credit card company. This company disciplines the seller.<sup>28</sup> If consumers sell some of their property, they typically go through an Internet auction service such as eBay. This does two things for predictability. It offers a trading platform, thereby narrowing mutual expectations down to what can be done within this framework. More importantly, eBay also offers a technical tool for generating a reputation. Despite these interventions, the willingness to co-operate over the Internet is much smaller than in face-to-face interaction.<sup>29</sup>

<sup>27</sup> For an overview, see Engel 2000: 204–12.

<sup>28</sup> The European Commission, DG Internal Market, Payment Card Chargeback when Paying over Internet, First Sub-Group meeting of the PSTDG and PSULG held on 4 July 2000, Markt173/2000, S.3, [http://europa.eu.int/comm/internal\\_market/en/media/elec-comm/chargeback.pdf](http://europa.eu.int/comm/internal_market/en/media/elec-comm/chargeback.pdf); Perritt 2000: 689–94.

<sup>29</sup> More from Ockenfels 2003.

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In a second class of situations, the design task is a result of external shock. Before this shock, the predictability problem had basically been solved by the existing institutional arrangements. But redesign is necessary, since the earlier framework no longer performs adequately after the shock. This is what happens in situations of imposed decontextualisation. Many fear that the Internet has this potential. They see it as a threat to 'national values'.<sup>30</sup> If that really were to happen, the effect certainly would not be confined to the predictability problem. The erosion of social norms would also hamper traditional solutions to social dilemmas by informal institutions. But lower predictability would be an important portion of the problem. Nations might want to take action, for instance, by attempts at renationalising the Internet.<sup>31</sup>

Finally, the increased predictability problem can result from purposeful intervention. This is straightforward if lower predictability is in the interest of powerful actors. It may, for instance, help them escape otherwise stringent regulation. But not so rarely, the predictability problem is just a side-effect of an act of intervention with different goals. Again, the Internet may serve as an illustration. Especially during the Internet bubble on the financial markets, many countries felt that opening themselves up to the Internet was paramount for national growth. They proactively promoted the access of their populations to the Net. If the above-mentioned concern were real, they then would have deliberately taken the ensuing predictability problem into account. More generally, any deliberate decontextualisation has this effect. Two prominent examples are globalisation and the promotion of a multicultural society. But simple physical mobility can also be brought under this rubric. It exposes travellers to foreign mores, and it brings people with different cultural backgrounds in. It therefore is not difficult to tell a story of progressive decontextualisation.

One can even go a step further. Humans and animals have to survive in the same natural environment. Biologists sometimes speak about institutions in animals, like the 'state of bees', with a queen and her subjects. If one looks at primates, one might even find the equivalent of deliberate institutional design. But even if the difference in the end is one of degree rather than of principle, it would still be huge. The comparison supports a claim: 'natural' complexity is not the issue. Humans outperform animals, because a greater part of this complexity matters for them.<sup>32</sup> In our modern times, more and more of this complexity is even

<sup>30</sup> The concern has been addressed in National Research Council 2002.

<sup>31</sup> For more on the technological options, and the ensuing social cost see Engel 2003c.

<sup>32</sup> Cf. Bartlett 1932: 210.

endogenous, resulting from other humans, not from nature. The enormous plasticity of their mental apparatus is only a necessary, not a sufficient condition for the ability of humans to handle this complexity. The sufficient condition, this book claims, is a set of institutions for nonetheless generating an appropriate degree of predictability. From this angle, improving the pertinent institutions is a way of safeguarding survival, welfare and social betterment.

Analytically, making behaviour predictable and changing behaviour do not collapse. In a rational choice perspective, predictability is a matter of information. If an institution makes behaviour predictable, an outsider learns how an actor may behave. But the actor keeps his freedom of choice. Likewise, predictability is not a mere matter of compliance with cultural or social standards. The behaviour of those at the fringe of society is often easy to predict, even if it is highly inappropriate.

The analytic distinction between predictability and normative desirability makes an option for institutional choice visible. Institutional designers can adopt a one-level or a two-level approach.<sup>33</sup> In the former case, generating greater predictability and changing incentives are done simultaneously, in one and the same act of intervention. In the latter case, one set of institutions sees to predictability. To the extent that predictable behaviour is socially undesirable, another set of institutions intervenes in the interest of changing incentives. In this case, the predictability problem is only indirectly present at the second level. It adds a criterion to institutional comparisons. Institutions aiming at social betterment may be ranked according to the degree of predictability they presuppose. The more they presuppose, the greater their demands for first-level institutions.

If institutional designers follow the one-level approach, one and the same institution serves both purposes. It sees to predictability in that it makes addressees behave in the socially desirable way. This option for institutional design has an important analytic consequence. It tremendously increases the set of institutions that can be interpreted as tools for making behaviour more predictable. Specifically, every institution that is not exclusively symbolic must have this effect.<sup>34</sup> This insight might also explain why the role of institutions in generating predictability has attracted fairly little academic interest so far.<sup>35</sup> The interest of researchers may have been siphoned away by a concern with understanding how

<sup>33</sup> More on one-versus two-level institutions from Engel 2003d.

<sup>34</sup> The classic text on symbolic policy-making (and hence the symbolic character of institutions, if institutional design is the political output) is Edelman 1964; see also Hansjürgens and Lübke-Wolf 2000.

<sup>35</sup> For an overview of earlier attempts, see below 1.4.

social betterment can be brought about. Again, description and prescription are closely related. The possibility of a one-level approach adds an important dimension to institutional comparisons. If the institutional designer opts for a one-level approach, the comparative assessment of options must start with predictability effects.

### 1.3 An interdisciplinary approach

A single discipline would not be able to analyse the predictability problem in a satisfactory way. This book draws on three bodies of knowledge. In order to understand why low predictability would be pervasive in a world without institutions, it presents a host of findings from both psychology and experimental economics.<sup>36</sup> Both fields do also help understand how existing institutions are able to make behaviour more predictable. Insights from these fields can also be used to assess suggestions for institutional design.

The second body of knowledge is economics, and, more specifically, game theory. Game theoretic tools make it possible to generate a conceptual benchmark. How would two individuals be able to co-ordinate behaviour, if Ego knows that Alter can exhibit either of two kinds of behaviour? This is visibly a rigorous simplification of the actual predictability problem. But even in this extremely well-behaved environment, it is a serious challenge to overcome the predictability problem. This analysis thus allows a much clearer definition of the institutional task. And it generates valuable insights for institutional design. It points to additional options, like leaving the predictability problem as is, or insuring Ego against the behavioural risk. And it teaches institutional designers how to assess institutional options comparatively.

The third body of knowledge is institutional phenomenology. It is partly taken from law, but it also encompasses non-legal formal and informal institutions. This work not only provides ample evidence for institutions that actually do lower the predictability problem. It also offers criteria for systematising the evidence, and for assessing the comparative performance of different solutions.

### 1.4 Related approaches in the literature

The impact of institutions on the predictability of behaviour has never been a fashionable topic, at least not among economists and

<sup>36</sup> See chapter 2 below.