

PROBLEMS WITHOUT ENDS: HOW RATIONAL CHOICE THEORY ESCAPES ITS EXPLANATORY TASK

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In discussing the place of rational choice theory (RCT) in sociology, claims are often made that RCT is implicit in and necessary for much, or even most, sociological research. Heckathorn (1997: 11) states that the only difference between traditional sociological theory and RCT is that "the latter makes explicit that which is implicit in the former", and Goode (1997: 23) says about RCT that "whatever its sins, almost everyone engages in it" and goes as far as to suggest that the use of RCT is "hard-wired into our thinking".

These claims can be correct or utterly wrong, depending on the definition of RCT. In this essay I discuss the fundamental distinction between RCT as a mere assumption of intentionality, and RCT as a testable theory, and I criticize the lack of clarity in the RCT literature as regards this distinction, which is of great importance. Though the distinction may seem clear enough, it is not often so in practice, and RC theorists cannot always be assigned to one of these standpoints. Whereas the intentionality assumption is hardly controversial, the testable versions of the theory often are. A common problem is that RC theorists tend to defend the use of the latter by invoking the plausibility of the former, a practice that is at best confusing and at worse false marketing.

I argue that RC theorists' treatment of ends, and commonly also beliefs, as exogenous is the root to the theory's problems as an explanatory theory, because it forces them to choose between an unrealistic but testable theory and a realistic but untestable theory. This problem cannot

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be solved within RCT because a move from one type of problem is a move towards the other: assuming a broader range of ends makes the theory more realistic but less testable, and assuming a narrower range of ends makes the theory more testable but less realistic. If researchers instead seek to endogenize concrete ends and beliefs, that is, explain their variation in different situations, they stand much better chances to provide realistic *and* non-tautological explanations of human choices. Boudon's cognitivist model (1998, 2001) holds promise in this regard.

My discussion concerns the relevance of RCT for explaining real-world sociological problems. RCT is originally a normative (or prescriptive) theory, in difference to an explanatory (or descriptive) theory (Elster 1990: 19; Brennan 1990). In practice, the border between normative and explanatory RCT is fluid, and defence and critique of the same theories are sometimes expressed in terms of whether they correctly capture real choices, and sometimes in terms of whether they correctly capture rational choices. I believe that sociologists normally want to know what people do and why, not what they should do (if they were rational).¹ As a consequence, I will not discuss whether theories correctly capture 'rational' choices, only whether they correctly capture the essentials of real choices.

RATIONAL CHOICE THEORY

Because RCT and its associated terms mean different things to different people, definitions of the concepts I will use are warranted. These definitions do not aspire to be 'final' or better than other possible definitions, but they are a way of fixing the terms of my discussion in order to avoid ambiguity.

Some common definitions of RCT are: (1) People maximize their utility given their beliefs and preferences, (2) people choose the best means (or the means they believe are best) for given goals/ends, and (3) people weigh costs and benefits and seek to maximize the expected net benefit. When discussing the RCT literature I will mainly use the terms beliefs and preferences. Figure 1 illustrates my definitions of beliefs and preferences and their relation to choice.² Since choices are intentional, they are oriented towards the consequences that one expects from the choice. I take 'beliefs' to be the *subjectively expected consequences* from

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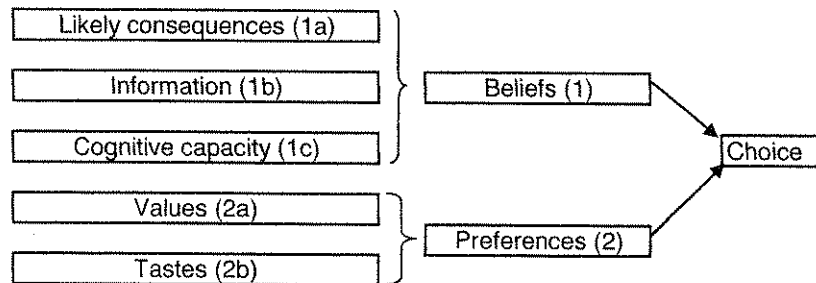


Figure 1: Choice as a function of beliefs and preferences

alternative choices, while 'preferences' is one's *evaluation* of these consequences. The subjectively expected consequences need not be identical to the actual consequences, because people often lack relevant information and/or the cognitive capacity to foresee the true consequences. So beliefs depend upon (1a) the objectively likely consequences, (1b) the information one has about these consequences, and (1c) one's cognitive capacities. Preferences, in turn, depend upon (2a) one's values and (2b) one's tastes, where values refer to stable moral convictions, and tastes to preferences in other regards.

The most common standpoint is that rational choices are those that can be explained by the consequences that people have objectively correct — or at least good — reasons to expect, and not by variations in their perception or evaluations of these consequences. In other words, the theory normally allows variation in choices only as a result of variations in the factor labelled 1a in Figure 1 (i.e., 'likely consequences'). Variations are sometimes also allowed in the availability of information (i.e., factor 1b in Figure 1), and more seldom in the cognitive capacities (factor 1c). Explanations in terms of variations in factor 2 (preferences) are however generally avoided.

RCT is often described as individualistic, which normally means one of two different things. The strong form of individualism, most common in economics, seeks explanations that do not refer to social institutions or social structures (Udehn 2001).³ The second kind of individualism, which sociological RC theorists normally stand for, is a 'weaker' form that allows social factors in the explanation but emphasizes the explicit consideration of individual choice (e.g., Friedman and Hechter 1988,

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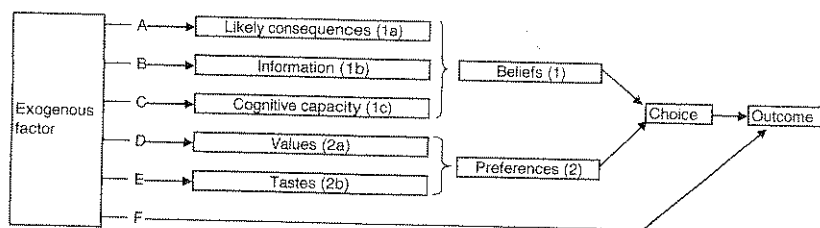


Figure 2: *The choice process and possible mechanisms of social causation*

Coleman 1990). Importantly, individualism does *not* mean that explanations are in terms of choices alone, because an explanation involving choices must always consider the exogenous context to which choice is an adaptation (cf. Popper 1945: 86). In fact, in traditional economic RCT, which assumes perfect information and fixed preferences, nothing but exogenous factors varies and hence these, not choice, implicitly drive the explanation.

Figure 2 adds the contextual dimension to Figure 1 in terms of a factor that can be anything exogenous to the individual. The normal empirical RCT explanation can be represented by arrow A in Figure 2, i.e. it assumes that some exogenous factor — which can be a social factor if the RCT version is not strongly individualistic — affects our choices through affecting the likely consequences of different alternatives. To affect our choices, we must perceive these consequences and we must put some value on them, but our degree of knowledge and our preferences are assumed to be unaffected by the exogenous factor (i.e. arrows B to E are assumed away). In the words of Hedström (1993: 167):

Rational choice theory usually assumes that variations in individual behavior are explained by differences in the opportunity structures actors face, rather than by variations in the internal 'makeup' of the actors. In sharp contrast to this, sociological theorizing traditionally has focused on between-individual variations in norms, values and cultural orientations, i.e. on precisely the types of factors ignored by most rational choice theorists.

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It is sometimes the case that any explanation that replaces a cultural or normative explanation is seen as an RCT explanation, even if it does not involve choices, so rational choice explanations can also be in terms of arrow F. Fehrejohn and Satz (1994: 72) even argue that RCT "is most powerful in contexts where choice is limited."

Traditional sociology is often depicted as leaving no room for choice, or as focusing on the constraints on choice. The term 'constraints' is however ambiguous. Some authors use it to refer to absolute constraints making certain outcomes impossible, like the law of gravity, while others refer to factors that can result in negative consequences, or 'costs', from choosing something, e.g., laws, rules, norms, or even psychological constraints (cf. Elster 1989: 13). Relating to Figure 2, absolute constraints will operate through arrow F, because the outcome will be independent of the choice process, while constraints that are not absolute will affect the outcome through affecting the choice through one or more of the arrows A to E (depending on how constraints are defined). I believe that sociological explanations seldom *reject* choices entirely, i.e. they tend not to be only in terms of arrow F. Rather, they often tend to *neglect* choices, thereby leaving the underlying mechanisms implicit, i.e. they do not detail which of arrows A to E might be of importance. This ignorance of social mechanisms is indeed one of the more common criticisms against traditional sociology by RC theorists and other sociologists of an individualistic orientation (Hedström and Swedberg 1998, Hedström 2005). While one need not embrace RCT to appreciate the value of explicit consideration of individual choice (for example, see Boudon 1998 or Hedström 2005), RCT has no doubt contributed to sociology by making individual choice more visible.

RCT AS AN ASSUMPTION OF INTENTIONALITY

RCT is often presented as being all about means and nothing about ends (e.g., Elster 1990, Hargreaves Heap *et al.* 1992, ch. 2, Sen 1997, Goldthorpe 2000): For any given ends that people may have, they are rational if they seek to *maximize* their chances to satisfy these ends. What is not always recognized is that if one accepts this, RCT can neither be unrealistic nor falsified. Unless it is specified what people strive towards, any purposive behaviour entails maximization (cf. Heckathorn 1997,

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Broome 1990) and for any behaviour one can come up with some ends that make it compatible with purpose.

For example, Esser (1993a) contends that RCT is compatible with Schutz's theories of everyday behaviour and habits, if the costs in terms of time and effort put into information search and deliberation are taken into account. Kahneman and Tversky (1984) show that people are more willing to travel 20 minutes if they can save \$5 off a \$15 purchase than if they can save \$5 off a \$125 purchase. This is irrational if one assumes that people are motivated by costs and benefits in terms of time and money, but, Kahneman and Tversky say, it may be more pleasurable "to save \$5 on a \$15 purchase than on a larger purchase", and they point out that whether one sees this behaviour as irrational depends on whether such "secondary consequences" (i.e., pleasure) are considered legitimate. Similarly, Riker and Ordeshook (1968) 'solve' the voting paradox by including psychic satisfaction among people's ends. One may approve or disapprove of these uses of RCT, but if ends are truly exogenous to RCT there is nothing that prohibits such uses.

The above also illustrates the unclear limits between the concepts of consequences and preferences. If the evaluation of some consequence, such as getting more money, depends upon other consequences — e.g., the social disapproval people are likely to face, or their feelings of 'psychic gratification' — this will be seen as a variation in preferences if we assume that people value only economic outcomes, but as a variation in consequences if we assume a broader range of fixed preferences. Including consequences in terms of social approval ('social' costs and benefits) in RCT is often taken as unproblematic. The point where debate often arises is on consequences stemming from inside individuals⁴ ('psychic' costs and benefits). These can be consequences that, though stemming from inside individuals, have an intersubjective character, such as a bad conscience from not following internalised norms or moral principles. Costs of this kind may be hard to change and individuals can experience them as out of their control just as much as consequences stemming from external sources. However, psychic costs can also be defined as the positive and negative feelings associated to doing something one likes or dislikes, an approach most forcefully promoted by Gary Becker (1976, 1993):

When an apparently profitable opportunity to a firm, worker or household is not exploited, the economic approach does not

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take refuge in assertions about irrationality, contentment with wealth already required or convenient ad hoc shifts in values (i.e., preferences). Rather it postulates the existence of costs, monetary or psychic, of taking advantage of these opportunities that eliminate their profitability — costs that may not be easily 'seen' by outside observers. (Becker 1976: 7)

This approach can be seen as a way of 'cleansing' the concept of preferences by removing everything in it, except the basic drive for well-being, and expressing the removed content in terms of consequences ('costs', 'prices' or 'incomes' in Becker's terminology) instead. With such an abstract definition of preferences, rationality becomes an entirely subjective notion and there is no conceivable choice that warrants refutation of the theory. An assumption of consistent and fixed preferences is thus empty and meaningless if preferences are not defined, or if they are defined so broadly as to include 'psychic gratification' or 'well-being'. Within the constant over-arching preferences, people may differ in concrete preferences (in Becker's terms, their psychic costs associated with different alternatives can vary) and these must still be defined for any prediction to be made in the case at hand.

When defining RCT as leaving preferences outside the theory, some authors recognize that the theory cannot be explanatory, and RCT is then defended as a starting point, framework, or meta-theory (e.g., Fararo 1992; Goode 1997), often with the imperative not to leave any behaviour outside as irrational and thus inexplicable (Becker 1976; Popper 1994, ch. 8).⁵ The theory in this form is then not meant to be tested or to do any explanatory work by itself, but to direct us to the factors that can help us to explain certain outcomes. While some see the rationality of all behaviour as an obvious truth that *cannot* be tested, others see it as a convenient approximation that *should not* be tested. For example, von Mises argues that "action is necessarily always rational" (1996 [1949]: 19), while Popper says that we need the assumption of rationality (what he calls 'the rationality principle') to animate our explanations in spite of knowing that, as a universal principle, it is false (1994: 180).⁶

Not all, however, agree that RCT in which preferences are undefined has no explanatory value. For example, Homans (1961, 1964) explicitly puts forward his general psychological statements ("Men are

more likely to perform an activity, the more valuable they perceive the reward of that activity to be" and "Men are more likely to perform an activity, the more successful they perceive the activity to be in getting that reward") as an explanatory theory, opposing himself to functionalist theories which, according to him, "possess every virtue except that of explaining anything" (1961: 10). In line with this stance, Farmer (1992: 415) argues: "that which makes rational choice theory a general theory is that which makes it an explanatory theory." While she recognizes that a general theory where all behaviour is seen as rational (i.e., purposive) needs hypotheses about "actors' purposes, knowledge and the constraints they face", she claims that "[i]f human behaviour is purposive, and if we accept that those purposes explain action taken in pursuit of them, then it is the actor's purposes that have explanatory content" (1992: 416). It is thus, says Farmer, "nonsense to say that because a general theory claims that a mechanism such as 'rational' purposive action has universal application it must be a worthless tautology."

I believe that it is a tautology, but not worthless. It is a tautology because, as Smelser put it (1992: 403), a theory that explains everything in terms of purpose actually explains nothing. To yield explanations on a deeper level than 'they did it because they wanted to', we need information from outside this theory, and it is this information that drives the explanations, because rationality (or purpose) is a constant (cf. Udehn 1987: 162).⁷ A general assumption of this kind need however not be worthless. In fact, I believe that an (implicit or explicit) assumption of intentionality is indispensable for the explanation of most sociological problems. However, I see no reason why we should call this assumption 'rational choice theory'. First, because 'rational' has a normative connotation suggesting that the choice is objectively correct in some sense and, second, because 'theory' suggests that it is testable. In addition, the use of the RCT label for this assumption risks confusion with the explanatory versions of RCT.

RCT AS A TESTABLE THEORY

RCT is often put forward as a *general* criticism theory, and these 'imperialist' ambitions have engendered strong critique (e.g., Smelser 1992, Green and Shapiro 1994). However, there is no consensus regarding the

sense in which RCT can be a general theory. If it is as an explanatory theory: Is its aim to explain all sociologically interesting outcomes entirely, to explain some outcomes entirely, to explain a part of all outcomes, or a part of some outcomes? In other words, when is the theory falsified?⁸

For example, it is often considered a failure of RCT that it is not able to explain why people vote, as their cost, however minute, must certainly be higher than the benefit, understood as the influence on the election outcome. On the other hand, RC theorists have noted that people tend to vote less in bad weather, and this has been taken as support for RCT (see Green and Shapiro 1994). The important difference is that, in the first case, the hypothesis is that *nothing else* but this version of RCT accounts for voting, while in the second case, the hypothesis is only that variation in voting can be *partly* explained by the theory. If RCT is meant to explain the outcome at hand entirely, it is refuted if it fails to do so, but if the RC theorist wants to show only that the theory accounts for the outcome in question to some degree, it is refuted only if this is not the case. Obviously, it should be much easier to refute the first hypothesis than the second one, so the choice of standpoint makes a huge difference.

If one agrees that an explanatory theory must be falsifiable, it must be possible to identify some conceivable outcome that is not compatible with RCT if it is to be explanatory. This means that preferences must be given substantive content. The typical (implicit or explicit) preference assumption of RCT is that actors "are motivated to attain private and instrumental goods such as wealth — or, less commonly, power and prestige — that are exchangeable for other immanent goods that are valued *sui generis*" (Hechter 1994: 318–319). These assumptions appear unrealistic in many cases of sociological interest. Because attempts to make RCT more realistic move it towards tautology, an alternative move has been to defend the use of unrealistic assumptions with the argument that RCT is concerned with explanation of social phenomena and therefore it needs no or only minimal behavioural assumptions. It is pointed out that the theory is not meant to yield correct predictions for every individual, but only roughly on average:

With respect to choosing between realistic behavioural assumptions and falsifiable hypotheses [...] simple and 'unrealistic' assumptions like wealth-maximization are more appropriate as predictors of aggregate behaviour than they are of individ-

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ual behaviour, since aggregation cancels out the idiosyncratic preferences of individual actors. (Hechter 1983: 9; for similar arguments see Coleman 1990: 19, Hernes 1992, Fehrejohn and Satz 1994, Hechter and Kanazawa 1997)

However, if the individual deviations from the model are systematic, i.e. if people in a specific situation tend to deviate in the same way from the assumed beliefs and preferences, explanations of aggregate tendencies will also be inaccurate. So while it is true that a choice theory can be useful even if it fails in the prediction for single individuals, it will be deficient if it fails to include the factors that are of systematic importance for the outcome. This deficiency can be of two kinds: the explanation can be *incomplete* (i.e. one would explain the outcome better by assuming several motivations), or it can be *biased* (i.e. the explanation is partly or entirely incorrect, because the relation is caused or suppressed by another mechanism operating simultaneously).

The first problem occurs when RCT cannot by itself give a sufficient explanation for an outcome, i.e. RCT is not enough to make the choices of the relevant actors understandable, as in the common example of voting. The second problem occurs when an RCT explanation compatible with an observation is not the *real* explanation. If RCT is meant to explain all or some outcomes entirely, both incompleteness and bias must be considered. If RCT is only meant to partially explain outcomes, the incompleteness of the theory is of course not a problem, but the risk for bias remains. One, often implicit, strategy has been to ignore potential biases on grounds of a 'paradigmatic privilege' for some version of RCT over alternative explanations. Hence, RCT 'explanations' typically do not extend beyond showing that some outcome or relation (often one that has previously been explained in terms of differences in norms and attitudes) is consistent with some version of RCT. Obviously, this does not rule out that it is also consistent with other explanations, which may be no less plausible.⁹

Without becoming tautological, RCT is unlikely to be able to provide complete and unbiased explanations of more than a few problems. Limiting the interest to such problems would mean ignoring many problems of central sociological interest, so a more viable use of explanatory RCT is as a partial explanation of outcomes (tested against alternative explanations). Of course, few would contest that people are to some

extent affected by incentives in terms of 'private and instrumental goods', so a partial RCT explanation can by itself often be trivial. A realistic and non-trivial use of explanatory RCT would be to use it in conjunction with other theories to study the relative importance of different factors in bringing about some outcome or relation of interest. This would however basically be just a matter of thinking in a realistic way about people's situations, beliefs and preferences—something we can do without RCT as well. The best explanations are likely to be achieved by starting from an aim to explain what people do, rather than from an aim to test whether — or to show that — people are rational. After all, what matters for outcomes is what people do, not whether they are 'rational' or not.

JUMPING BETWEEN THE RCT VERSIONS

The RCT literature is often ambiguous on the distinction between RCT as an intentionality assumption and RCT as a testable theory. When one version is criticized, RC theorists often take refuge in the other version. A common response to critique about the unrealistic assumptions in explanatory RCT is to claim that the theory is misunderstood, and that it can incorporate those points on which it is criticized (e.g., Friedman and Diem 1990; Farmer 1992; Kiser and Hechter 1998). But, importantly, the use of unrealistic models cannot be defended with what the theory *in principle* is capable of doing. In a similar way, the critique that RCT as an intentionality assumption is tautological has been rejected with the argument that testable hypotheses can be generated if concrete beliefs and preferences are also assumed (e.g., Farmer 1992, Esser 1993b). However, if one claims that *RCT is tested* when certain preferences and beliefs are assumed, one must accept these preferences and beliefs as part of RCT. If hypotheses are falsified but choices are assumed to be rational given some other preferences or beliefs, no outcome can lead to the refutation of RCT and it is thus not RCT that is being tested. There is no way around this: *if RCT is to be a testable theory, it cannot at the same time be a universal assumption.*

The most common view among RC theorists is that the imputed preferences and/or beliefs should be blamed if hypotheses are falsified. Abell (1992: 203–204) stresses that "if the predictions of our theory fail,

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then we should at least initially assume that we have modelled the preferences incorrectly rather than to presume sub-optimal choice”, and Kiser and Hechter (1998: 809) argue that “in the face of anomalous findings, modifications of the explanations should be made first in the least central part of the theory, with successive consideration of more central elements if that tack fails.” Because some RCT version will always be compatible with an observed relation, this use of RCT will tend towards the same degeneration as Hechter (1983: 10) accuses functional theory of (just replace ‘functional’ with ‘rational’ and ‘institution’ with ‘choice’):

Empirically, functional explanations are especially difficult to falsify. It is always possible to argue that institution *x* isn’t functional for reason *y* but this does not rule out that it is functional in some as yet unanticipated way.

ENDOGENIZATION OF BELIEFS AND PREFERENCES AND BOUDON’S COGNITIVIST MODEL

Above I have sought to show the importance of distinguishing between RCT as a general assumption of intentionality and RCT as a testable theory. Both these types of RCT have problems from an explanatory point of view: the first is simply not an explanatory theory, and the second often tends to be unrealistic. There is however a “third way” that achieves realism without being tautological. This approach involves the same realistic view on preferences and beliefs as the tautological version of RCT but extends its reach to endogenize these preferences and beliefs. In other words, an explanation in terms of e.g., ‘psychic costs’ is of little use unless we can explain how some observable factor affected these ‘costs’ and thereby choices in a plausible way. Hence, what matters is not whether we define ‘psychic costs’ in terms of preferences or in terms of consequences, but whether we seek to explain their variations.

Boudon’s *cognitivist model* (1998, 2001) is a promising way forward. Like most RCT sociologists, Boudon recognizes that choices are adaptations to a context that often is of a social nature. The main achievement of Boudon’s approach in relation to RCT is that he problematizes *how* the adaptation to the context takes place. While RCT provides explanations only in terms of arrows A and F in Figure 2, Boudon’s cognitivist model also aims to endogenize the formation of ‘cognitive

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beliefs' (beliefs about what is true, likely, plausible) and of 'axiological beliefs' (beliefs about what is good, fair, legitimate), i.e. the mechanisms described by arrows B to D in Figure 2. Boudon argues that RCT can say nothing about cognitive beliefs and axiological beliefs because these cannot be explained by cost/benefit calculations. However, as shown above, the problem is even worse: RCT does normally not even *aspire* to explain cognitive and axiological beliefs, but does merely take them as given.

As noted by Boudon, some beliefs and preferences are so self-evident that they do generally not need explanation. He gives the example of looking to the left and right before crossing a road, which is based on the trivial preference for staying alive and the equally trivial belief that looking to the left and right before crossing the road is an effective means to avoid getting killed (1998: 182). Naturally, treating beliefs and preferences as given in such a case would not be problematic. But, in Hollis' words (1987: 64): "whenever it *makes sense* to ask why the agent prefers *x* to *y*, and to *expect a reason*, the preference is not exactly given" (my emphasis). The same argument holds for beliefs. For many sociological problems, what people believe and what they are motivated by are neither trivial nor uninteresting questions, and by treating beliefs and/or preferences as given our understanding of the problem is stumped.

Through attempting as far as possible to re-create the 'good reasons' of people to hold certain beliefs or values given the relevant situational features, Boudon manages to make people's 'subjective' rationality understandable in an 'objective' way. Although it emphasizes the importance of arrows B to D, Boudon's approach does not *a priori* exclude any of the mechanisms described by arrows A-F. Rather, the plausible mechanisms are sought through a thorough understanding of the subject matter and the situation that the relevant actors are facing. This kind of approach is unavoidably more problem-oriented than RCT, but this does not mean that its explanations are idiosyncratic and atheoretical. The relevant situational features that affect beliefs and preferences may have a high degree of generality and be common to many different concrete situations.

Naturally, the use of richer models comes at a price. Explanations are likely to be more complex than RCT explanations, and one may find competing explanations that have to be subjected to further research.

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However, it is a price one has to pay, because the elegance and simplicity of an explanation is worthless if it is false.¹⁰ As Boudon points out, “scientific theories have to be realistic before anything else” (1998: 195).

ACKNOWLEDGEMENTS

I am grateful for many useful comments from Jan O. Jonsson. The chapter has also benefited from comments from Peter Hedström and Lars Udehn on my earlier work on this topic.

NOTES

1. What people do may in itself be the outcome of interest, or a means to understand some outcome for which individual actions are necessary. To avoid misunderstanding, note that to explain what people do does not imply an interest in singular individuals, but in systematic tendencies within groups of individuals.
2. I use the concept ‘choice’ in a broad sense, referring merely to an individual’s intention to bring about some outcome. I prefer the concept choice to ‘action’, because I want to analytically separate the effect of the social context that goes *through* individual intentions from the effects operating on individuals without going through their intentions. While external factors affect choice only through affecting individual motivations and perceptions, action may depend also on external factors that operate without going through the individual. For example, I may choose to (try to) take the bus to work, but if the bus does not show up I cannot carry out the action ‘take the bus to work.’ The action can thus be seen as an outcome of both intention and external causes. ‘Behaviour’ is a broader concept than action, in that it includes everything people do regardless of whether there is an intention behind.
3. Though it is not clear whether this kind of explanation is at all possible (Udehn 1987; Arrow 1994).
4. The view that RCT should not include consequences stemming from oneself appears to be consistent with Weber’s definition of *zweckrational* action, which he defines as “determined by expectations as to the behaviour of *objects in the environment and of other human beings.*” (1978 [1921–22]: 24, my emphasis).
5. Becker only concedes that RCT as he defines it is *almost* tautological, because he claims that the assumption of stable preferences provides a foundation for predictions (1976: 7). As noted above, however, the preferences that Becker assumes to be stable are so abstractly defined as to render predictions impossible.
6. It is hard to see how the rationality principle can fail to be true when it, as Popper defines it, only means that action is adequate to the situation as perceived by the individual, including his or her ‘obsessions’, ‘limited or overblown aims’, ‘limited or overexcited imagination’ and ‘limited experience’ (1994: 178ff).

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7. Homans does use such information in his theories, but (like Farmer) he thinks that the explanation lies in the universal psychological statements.
8. Cf. Green and Shapiro's (1994) discussion about 'partial' and 'segmented' universalism.
9. RCT explanations using aggregate data are especially vulnerable to bias, since many different individual-level processes can result in the same aggregate outcome (cf. Jonsson (1999), who shows that while an RCT model fits the aggregate data very well, the empirical analyses on micro-level data are less supportive of the RCT hypotheses.).
10. As noted above, it is important to distinguish between true but incomplete explanations (which are not worthless) and explanations that are biased or false (cf. the discussion about instrumentalism in Hedström 2005: 62).

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