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Social mechanisms and explanatory pluralism: Reflections on the Persson-Little-Chuang debate

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Persson's recent critique of Elster's account of social mechanisms (2012a) has sparked a lively debate (Little 2012a, 2012b; Persson 2012b, 2012c; Chuang 2012). Concerning this debate, I wish to make two points:

(1) The debate over social mechanisms overlaps instructively with accounts of explanation and mechanism in philosophy of science and philosophy of biology.
(2) Both these accounts and responses to Elster support a pluralistic approach to scientific explanation.

I discuss each of these points in turn.

Mechanistic explanations in biology describe how organized entities and activities give rise to an overall system or result (Machamer et al 2000). Though prominent in the life sciences, these explanations flout traditional philosophical criteria for scientific explanation, replacing derivation from laws with complex descriptions of diverse components and their interactions. Philosophers of biology for the most part reject the "hidden structure argument" that mechanistic explanations are implicitly law-based, and instead characterize mechanistic explanations as models of real causal systems at multiple levels of organization.[1]

In contrast, Elster's (2007) account of mechanistic explanation in the social sciences does make use of the notion of lawful hidden structures. Elster defines mechanisms as "frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences" (36). The hidden structures are causal laws that specify conditions under which a phenomenon of interest E *must* occur (of the form 'If conditions C_1, C_2, C_3,… C_n, obtain, then always E'). This is a version of the classic covering-law view of explanation: mechanisms, like laws, explain a phenomenon of interest by subsuming it under a more general regularity.[2] The difference is that, due to uncertainties about triggering conditions, overall effects or both, mechanisms admit exceptions, and so do not entail predictions ('If conditions C_1, C_2, C_3,… C_n, obtain, then sometimes E').[3] We must settle for Elsterian mechanisms when we lack the requisite knowledge to formulate an explanatory law — as is often, if not always, the case in social science.

Persson (2012a) identifies a dilemma for Elster's account. Clearly Elster must leave open the possibility that lawful hidden structures may be revealed by further inquiry, bringing us closer to

[1] E.g., Glennan 2002, Bechtel and Abrahamsen 2005, Kaplan and Craver 2011; however, see Weber 2005 for a dissenting view. The classic statement of the hidden structure argument is in Hempel 1965.
[2] The DN model of explanation (see Hempel 1965) is the best-known version of the covering-law view. Neither Elster nor any other contemporary philosophers, to my knowledge, endorse that particular theory, which is vulnerable to well-known objections.
[3] Here Elster's view deviates from the DN theory, according to explain a phenomenon is to show that it is to be expected; *i.e.*, prediction.

"the ideal explanation" (*cf*. Persson 2012c, 37). Persson argues that if such inquiry yields causal information about a mechanism's triggers and outcomes in a particular case, but falls short of revealing a universal law, then on Elster's view we have no explanation at all, and are "thrown back on mere description and narrative" (Elster 1999, 1). Such a case 'falls between explanatory chairs;' we have too much causal information for a mechanism, but not enough to support a covering law. This paradoxical explanatory gap, Persson argues, shows that Elster's account of mechanisms is seriously flawed. Little concurs (2012a), though his diagnosis focuses on definitions of 'mechanism' rather than explanation *per se*. [4] Chuang (2012) disagrees, arguing that the paradoxical situations Persson describes do not arise on Elster's view, properly understood.

Her argument hinges on the distinction between local instances of mechanisms (particular causal chains involving individual entities), and mechanisms themselves (more general causal patterns). Resolving indeterminacies about triggering conditions or outcomes for a particular causal chain, she argues, does not thereby resolve indeterminacies for the mechanism of which it is an instance. So we still have a mechanistic explanation, subsuming the instance to a more general (albeit less determinate) causal pattern. If we learn enough to identify triggering conditions and determinate outcomes for the mechanism itself, then we can formulate a causal law. In no case do we have detailed causal information, no mechanism, and no law.

Persson's latest reply (2012c) at once sharpens the dispute and narrows the distance between his and Chuang's view. He accepts the distinction between global and local causal descriptions. But, for the cases at issue, he argues, a global Elsterian mechanism only exacerbates the problem. The paradoxical cases involve acquisition of causal knowledge and loss of explanation. At one time (*ex hypothesi*), an Elsterian mechanism explained the phenomenon of interest. With more causal information, the indeterminate mechanism is replaced by a determinate causal account. But on Elster's account we make no explanatory progress this way; indeed, by replacing the original mechanism with a local causal account, we lose explanatory power. That this paradoxical situation can arise is the core of Persson's critique. At best, the phenomenon of interest is subsumed to a more general, indeterminate mechanism than the original; the causal information gains us nothing.

I think that Chuang would reply here that in such cases the Elsterian mechanism is unaltered, because removing indeterminacies about an instance does not improve explanatory strength through increased generalization. However, she would add, explanatory strength is improved by increased detail about the "purely local" instance (2012, 1; see also 18). The paradoxical situation is avoided, because the local account does provide a "descriptive form … of causal explanation" (8). So Persson and Chuang are actually in agreement about these cases: we can make explanatory progress either globally (via generalization) or locally (via detailed causal

[4] Briefly, Little (2012a, 2012b) takes the dilemma to show that Elster's epistemic characterization of mechanisms should be replaced with a realist or "ontic" interpretation. This accords well with scientific practice, but sidesteps Elster's primary aim, which is to extend the covering-law view to fields that lack laws but are rich in causal relations as well as rife with unknowns.

chains). They disagree as to whether Elster's account admits the 'local' variety of explanation. Underpinning that dispute is a deeper debate about monism vs. pluralism regarding explanation.

Elster states that to explain an event is to show "show it to be an instance of a general causal pattern" — a law or a mechanism, depending on the state of our knowledge at the time (2007, 37). [5] Though our epistemic situation changes, the basic form of explanation does not. This common form ('If C… then always/sometimes E'), together with remarks that to the effect that without a law or mechanism we are "thrown back on mere description and narrative," suggest a monistic view of explanation. If this is correct, then Persson's objection holds: Elster's view has no place for local causal accounts. [6] Such accounts are not laws, because they do not include exceptionless generalizations. Nor are they mechanisms, because there is no indeterminacy in the specific case at issue. The only other possibility is that they provide no explanation at all, but "mere description and narrative." Chuang rejects this diagnosis of such cases, claiming that "while a fine-grained explanation may be more powerfully explanatory, it may not exhibit improved explanatory strength in a law-like way" (18).[7] But if Elster's view of explanation is monistic, then he could not accept this statement.

The distinction between fine-grained and generalizing explanations can only aid Elster's account if he can accept both as explanatory; that is, if he allows pluralism about explanation. Chuang's remarks evince pluralist commitments, but her argument does not establish that Elster would acknowledge improved explanatory strength by fine-grained specific detail. However, if such an argument was provided, this would successfully rebut Persson's paradox, effectively 'plugging the explanatory gap' with another kind of explanation.

Interestingly, this alternative sort of explanation, which Elster (or, at least, Chuang on his behalf) is at such pains to distinguish from more general mechanisms, is termed mechanistic explanation in biology: fine-grained description of a complex causal system (see above). In a sense, Elster's account reprises unsuccessful mid-20th century attempts to extend the covering law model of explanation to biology. The current debate over Elsterian social mechanisms suggests a parallel solution: a genuine alternative to the covering law view. The parallels emerge most clearly in relation to experiment, the classic method of revealing causal relations. As Persson (2012a) notes, "local improvements" in causal explanations often result from manipulation of specific components of a more complex mechanism under (more or less) controlled conditions. Experimental methods can sometimes resolve the indeterminacy locally, but it is then a further question whether the results extend beyond the experimental context ('external validity'). Often,

[5] Chuang suggests that Elster admits other forms of explanation in social science (e.g., correlational and statistical), though he takes causal explanation to be superior (2012, 2). If so, then Elster's view is weakly pluralistic, and he may escape Persson's objection. There is some textual support for this; e.g., Elster's remark that "knowing the fine grain is intrinsically more satisfactory for the mind," which could be interpreted as endorsing a form of local causal explanation (1998, 48).

[6] *Cf.* Persson 2012c (37). *Contra* Chuang, Persson does not attempt to "pass off" elucidated applications of mechanisms as covering laws (2012, 14). His objection is precisely that, on Elster's view, these detailed local instances qualify as neither laws nor mechanisms.

[7] Little (2012b) also suggests that "compelling and empirically defensible answers to questions" about particular social events or trends can be explanatory, without covering laws (29).

as we learn more, we are less entitled to generalize. These are familiar points in philosophy of biology, where generalization from atypical or heavily-engineered "model organisms" is a longstanding conundrum (see, e.g., Creager et al 2007).

To clarify the concept of causal relations revealed by experiment, many philosophers of biology appeal to Woodward's manipulability theory (2003), which is itself based on methodology in the social sciences. The manipulability theory states that X causes Y (where X and Y are variables that can take two or more values) if and only if there is a possible manipulation of some value of X under idealized experimental conditions (an intervention), such that the value of Y changes only in virtue of the change in X. [8] Causal relations, but not mere correlations, are invariant under some interventions.

An associated theory of causal explanation, interventionism, characterizes explanation as aimed at manipulation and control; good explanations allow us to successfully intervene in the world by exploiting causal dependency relationships. Mechanistic explanations, on an interventionist view, describe a causal structure of multiple causal dependency relations, each invariant under some range of interventions. Because invariance is required only under some rather than all interventions, causal explanations need not include general laws. However, the broader a causal relation's range of invariance (that is, the more closely it approximates a universal law), the greater its explanatory power.

As the above remarks show, Woodward's theory provides just the solution Persson (2012b) recommends for Elster: to reformulate the account of mechanisms such that laws are a special case, thereby replacing the explanatory gap between laws and mechanisms with a continuum. Chuang (2012) also cites Woodward in this context, noting that on his account the difference between causal laws and mechanisms qua explanation is a matter of degree (more precisely, breadth of scope and range of invariance). But she further suggests that Elster's account of mechanisms is relevantly similar to Woodward's (11-12). It is true that interventionism and Elster's social mechanisms both preserve the core of the covering law view: that to explain is to subsume a particular event to a broader causal pattern.

So Woodward's account is well-positioned to frame a rapprochement between Elster (and Chuang), Persson (and Little), and philosophers of biology interested in mechanistic explanation. However, a 'Woodwardian resolution' to the explanatory gap requires pluralism about explanation; the appeal to interventionism does not avoid this. If the interventionist account is interpreted such that the only way to improve an explanation is to increase the range of invariance under intervention for the causal relation in question, then Persson's paradox remains in force. This is because the problem arises because specific causal information can enhance explanations without any increase in generality. However, Woodward's account also introduces a new explanatory aim: fine-grained control over causal systems. Increasing specific detail about causal dependency relationships in a complex system clearly contributes to this goal. So a 'Woodwardian' resolution to the debate over social mechanisms is a pluralist solution.

[8] Woodward's full analysis is more elaborate; this simplified treatment will do for present purposes.

To conclude: this essay notes several connections between the recent debate over Elsterian social mechanisms, and accounts of mechanisms and explanation from philosophy of science and philosophy of biology. I have argued that philosophers interested in social mechanisms should take advantage of relevant work in the latter fields, and that one influential account of causal relations (Woodward's manipulability theory) is a good starting-point for rapprochement among the different views on offer. In addition, I have diagnosed the root of the present debate as tension between monist and pluralist approaches to scientific explanation, and argued that the way forward is to endorse pluralism.

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