

Comment on Andrew Abbott/2

by Gianluca Manzo

doi: 10.2383/24752

In the sociological approach currently known as “analytical sociology” (hereafter referred to as AS), the “mechanism” concept is fundamental in the study of social phenomena [Hedström 2005]. Despite intense epistemological efforts to clarify the nature of this concept [Bunge 2004], it remains ambiguous on certain points, as does the type of explanation it implies.

My argument here is that Andrew Abbott’s brilliant critical analysis pertains more directly to those ambiguities than to any fundamental incompatibility between his ideas and AS.

Assuming that I have correctly understood Abbott’s arguments, they can be summarised as follows: *a*) AS involves a commitment to individualist-type ontology and is micro-reductionist; *b*) structural elements are acknowledged only rhetorically; *c*) the image of the actor adopted by AS is simplistic. In the “relational sociology” advocated by Abbott, instead: *d*) interaction (rather than the individual) comes first; *e*) each actor’s action is systematically embedded in a circular relation between his past and present actions; *f*) each actor’s action is also embedded in a circular relation with the actions of *n* other actors; *g*) caught up in this twofold recursivity, each actor’s identity is being perpetually redefined.

First, criticism *a*) and counterproposition *d*) override each other. Supposing that AS is based on an individualist-type ontology, Abbott is also defending a specific ontological option, the one that Tilly [1998] calls “relational realism.”

In ontological terms, the supposition adopted by AS is of course that the individual is the only entity capable of transforming and connecting events; the individual, in fact, is the only entity endowed with intentionality. The latter, however, hardly

appears to me as a demanding supposition. It does certainly not imply that other entities (structural ones, for example) do not exist, nor is there any *petitio principii* concerning the temporal order of these multiple entities, which is instead to be specified “case by case”, for each phenomenon studied.

Moreover, Abbott himself, in agreement with sociologists such as Peter Abell, with whom he developed the concept of “narrative” (which he perhaps prefers to “mechanism”), has acknowledged in several works that the ultimate reference in sociological analysis is “activity.”

For sociologists, however, these do not seem to me as the best grounds for discussing the problem of structure/actor relations. The problem pertains more to the logical structure of explanation than to the elementary structure of reality, and therefore it might be handled more fruitfully from a methodological perspective than from an ontological one. If we accept this shift in viewpoint, it will appear that, at the general level, AS is less micro-reductionist than Abbott claims, and, more specifically, criticisms *b*) and *c*) are only partially justified, whereas counterpropositions *e*), *f*) and *g*) can be readily integrated into the mechanist view. Let us consider these more specific points first.

Abbott’s criticism *b*) seems too harsh. First of all, in programmatic terms, Hedström and Swedberg’s typology of mechanisms [1998, intro] provides for a class of “situational mechanisms” that may be used to relate “structure” and “action.” In other works, the authors linked macro-to-micro mechanisms to Popper’s concept of “situational logic”. In fact, as Udhen has shown, it was Popper who, by means of this notion, first weakened what was a “strong” – i.e., psychologising and reductionist – conception of methodological individualism. Moreover, certain mechanisms that are generally interpreted in purely individualist terms – e.g. adaptive preferences, counter-adaptive preferences and “wishful thinking” – actually fall into the situational mechanisms’ category. Lastly, many AS-inspired empirical analyses – e.g. the “vacancy chain models” developed by Sorensen and Hedström, following White – go far beyond mere rhetorical use of situational mechanisms.

I therefore see no legitimate reason for using the affirmation that “There exist no such things as ‘macro-level mechanisms’” [Hedström and Swedberg 1998, 24] as a proof that AS does not recognise situational mechanisms (Mayntz and Sawyer, for example, have reutilised this argument in recent articles). The main purpose of the proposition just cited is to counsel researchers to always indicate a theoretical model by specifying the generative mechanisms (situational among others!) that brought about the relation between two (or several) given macro states.

In terms of Hedström and Swedberg’s mechanism typology, criticism *c*) amounts to the affirmation that AS uses simplistic, possibly inappropriate action

formation mechanisms. Abbott's identification of the micro mechanism construction in AS with one particular conception of individual rationality does not seem to me very constructive: instrumental actor rationality is not the only kind of rationality compatible with micro mechanisms. On the contrary, those mechanisms can be based on a concept of rationality as "evolutionary" (Macy's understanding), which implies an actor integrated into a recursive loop fuelled by his own actions. This means that AS is open to Abbott's counterproposition *e*). Action formation mechanisms, however, may also be based on a "mimetic" conception of rationality (recently discussed by Hedström), in which actors are thought of as integrated into multiple loops fuelled by the effects that the actions of some are likely to have on the actions of others – and this answers to Abbott's counterproposition *f*). Other micro mechanisms may make use of "cognitive rationality," which relates actors' construction of axiological and descriptive reasons to the particular situation in which they are acting. This is why Boudon [2001, 455-456] at times called his own notion "contextual rationality" – another argument in response to the reductionism criticism. Lastly, we may think of some micro-sociological mechanisms as concerned primarily with the emotive components of human action (as Elster proposed) and/or we can complexify actor objectives by introducing the notion of a quest for others' approval (as Lindenberg suggests). Both of these choices would open the way for thinking in terms of a changing individual identity, and this, in turn, would satisfy Abbott's counterproposition *g*).

Since these complexifications are not incompatible with AS, the degree to which micro-sociological mechanisms are detailed seems to me a function of the type of societal regularity to be explained, rather than a point to be determined *a priori*. Moving from "conventional psychology" (to use Simmel's expression as cited by Boudon) to more sophisticated cognitive and emotional mechanisms would then be a means of justifying on a case by case basis, by combining what Lindenberg called principles of "sufficient complexity" and "decreasing abstraction."

Abbott's counterproposition *f*) criticises AS for granting little importance to actor interdependence structures. Once again, this criticism seems too strong to me.

In the matter of getting from micro to macro, the problem of interdependence among individual actions is decidedly crucial in AS, as indicated in some of Coleman's programmatic passages and by Boudon's "emerging effects" (a notion first outlined by Merton). It can of course be noted that such interdependence is usually indirect: we are dealing with inter-individual effects mediated by the combined aggregates of previous actions, whether these aggregates involve actor awareness (strategic interdependence) or not (parametric interdependence, to use Abell's terminology). The aggregation mode typology outlined by Coleman in the introduction to his *magnum opus* is therefore incomplete.

We should however not forget that in little-known passages of *The logic of social action*, Boudon recognises the existence of “direct” types of interdependence, rooted in interaction structures. In what are now considered classic studies, Coleman himself looked at the aggregate effects of social networks of different shapes. Other AS proponents such as Hedström continue to do the same in empirical analysis of collective action.

Once we understand that AS also explicitly recognises the mediating role that may be played by interdependence, dyadic interactions and network configuration in the “descending” transition from “structure” to “action” [Barbera 2004; Hedström 2005, ch. 3], we see that this sociological approach concretely takes into account multiple types of interdependence.

To make this fact visible, I believe it is useful to integrate Hedström and Swedberg’s typology of mechanisms. Specifically, in the category of transformation mechanisms, I suggest to distinguish overtly between *simple transformation mechanisms*, where the move from micro states to the macro state occurs in the absence of ties among actors, and *complex transformation mechanisms*, where the move from micro to macro is made through indirect ties among actors – *interdependence structures* – and/or direct ones: *interaction structures*. In the category of situational mechanisms, moreover, I suggest we use the term *relational situational mechanisms* to indicate any situational mechanism in which the external state – that is, the state escaping actor’s immediate control – is identified with the structure of indirect or direct ties in which the actor may be caught up.

Once again, circularity between structural ties and actor identity should not be posited *a priori*, contrary to Abbott’s counterproposition g), but rather understood as depending on the phenomenon under study.

Given the points just outlined, can it really be claimed that AS relies on a reductionist version of methodological individualism?

This is the claim in Abbott’s criticism a) and I disagree with it. Though AS focuses on the micro-foundation of the societal regularities to be explained, it does not micro-reduce these regularities. Individual actions are fully embedded “upstream” in all sorts of structural and relational elements, and they give rise “downstream” to different types of interdependence and interaction structures. In the 1970s, Dutch sociologists used the name “structural individualism” for this hybrid form of methodological individualism situated between “holism” and “individualism” [Wippler 1978, 141-144]. Moreover, Abell recently indicated that relational elements may very well be integrated on both sides of the Coleman boat.

I suggest using the term *complex methodological individualism* to indicate that, in the correct understanding of AS, all social regularities are conceived of as emer-

ging from the process fuelled by the interlinking of several “macro-to-meso-to-micro-to-meso-to-macro” loops. It is important to see that this is only a general grid for specifying the explanation, not a set of propositions about the nature of actors, structures or their mutual temporal relations. Within this grid, the researcher needs to specify the status (s)he attributes to the different mechanisms connecting the different levels of analysis; justify the generative hypotheses (s)he constructs about those mechanisms; explain why, in the study of a specific social phenomenon, (s)he has introduced certain mechanisms and eliminated others.

It is crucial to realise that technical devices now exist that make it possible to apply this complex form of methodological individualism and practice to the particular kind of modelling it implies. Computer simulation techniques – to which Abbott has recently granted space in the prestigious journal he heads – make it possible to formalise and activate generative hypotheses *invitro*, hypotheses that pertain to heterogeneous analytic levels. Specifically, Multi-Agent Systems (MAS) allow for individually modelling entities (agents) and inserting them into network structures to study their dynamic development and thereby establish the (possibly recursive) ties between their behaviour, indirect interdependencies, interactions, and the systematic results these interactions lead to. Although this has seldom been done, the technique also allows to construct refined representations of agents’ internal structure (cognition and emotion).

Although the difficulties involved should not be underestimated, my recent experience with this technique [see Manzo 2006; 2007] leads me to think that increased use of MAS for formalising and validating generative models that respect the logical structure of complex methodological individualism can only increase the strength of AS. Hedström [2005, ch. 6] has recently drawn attention to this technique, and it is extremely interesting that MAS proponents working outside AS have independently arrived at a “generative” conception of explanation [Epstein 2006, chs. 1, 2].

The crucial point is that using computational simulation, particularly the multi-agent variety, makes it possible to clarify the relation between “mechanisms” and “processes” and to endow that relation with a technological infrastructure. When we *write* a set of computational algorithms (the program), formalising the generative hypotheses the consequences of which are to be studied, what we are doing is hypothesising a series of generative mechanisms. When we *execute* the program – that is, as soon as the first instruction is read by the computer after the algorithm initially formulated in a high-level language has been transformed into “machine language” (program *compilation*) – we engender the process deriving from the set of posited generative mechanisms. With the technical distinction between program “writing,” “compilation,” and “execution” it becomes clear that a “process” is nothing more

than the dynamic aspect of one (or several) mechanism(s): it is what the mechanism can trigger.

AS is perhaps only one option among others, as Abbott claims, but it seems to me a highly attractive and in some respects fundamental one. First, as I have tried to show, it encompasses a general structure of sociological explanation – complex methodological individualism – that extends to include generative mechanisms of various types. “Mechanisms” and “relations” here are hardly incompatible; rather they combine and give rise to one such mechanism type. This is attested very clearly by Tilly’s notion of “relational mechanisms” [Tilly 2001], which covers my concept of complex transformation mechanisms. Second, as just indicated, an AS that accepts and uses MAS will teach that “mechanisms” always logically precede “processes,” which are in fact only their dynamic aspect. This means that the “relational sociology” that Abbott defends is inconceivable without the “mechanismal sociology” (AS) he critiques.

References

- Barbera, F.
2004 *Meccanismi sociali. Elementi di sociologia analitica*. Bologna: Il Mulino.
- Boudon, R.
2001 “Which rational action theory for future mainstream sociology: methodological individualism or rational choice theory?” *European sociological review* 17: 451-457.
- Bunge, M.
2004 “How does it work? The search for explanatory mechanisms.” *Philosophy of Social Sciences* 34: 182-210.
- Epstein, J.
2006 *Generative Social Science: Studies in Agent-based Computational Modelling*. Princeton: Princeton University Press.
- Hedström, P.
2005 *Dissecting the Social: On the Principles of Analytical Sociology*. Cambridge: Cambridge University Press.
- Hedström, P., and Swedberg, R. (eds.)
1998 *Social Mechanisms: An Analytical Approach to Social Theory*. Cambridge: Cambridge University Press.
- Manzo, G.
2006 “Actions, interactions et structure dans l’émergence de la stratification sociale des diplômés: un modèle de choix discrets avec externalités.” *Mathématiques et sciences humaines*. 175: 53-99.
2007 “Le modèle du choix éducatif interdépendant: des mécanismes théoriques aux données empiriques.” *Archives européennes de sociologie* 48.

Tilly, C.

1998 "Micro, Macro, or Megrim?" in *Mikrogeschichte-Makrogeschichte: Komplementar oder Inkommensurabel*, edited by In Schlumbohm J. ed., Göttingen: Wallstein Verlag; Göttinger Gespräche zur Geschichtswissenschaft, vol. 7.

2001 "Mechanisms in political processes." *Annual Review of Political Science*, 4: 21-41.

Wippler, R.

1978 "The structural-individualist approach in Dutch sociology." *The Netherlands Journal of Sociology*, 14.

Mechanisms and Relations

Abstract: Reacting to the original papers outlining the importance of “social mechanisms,” this paper contrasts two views of the social process, the mechanistic and the relational. In the sources here analyzed, the mechanistic perspective is largely based on methodological individualism and generally presupposes rational, or at least intentional, action. A fundamental assumption of this approach is that the meaning of an action is given in itself. The relational view by contrast holds that the meaning of an action arises only from its relation to other actions, both temporally and structurally. The relational view takes not actors but interaction as primitive and focuses on the scene (context) of action rather than the intentions of actors. The paper investigates these differences by examining the Elsterian mechanisms of “endowment” and “contrast,” both theoretically and through the example of application of students to institutions of higher education in America.

Keywords: mechanisms, interdependence, interaction, agent-based simulations, processes.

Gianluca Manzo is a researcher at the CNRS (GEMAS), Paris and teaches quantitative methods at the University of Paris IV – Sorbonne. His research interests include philosophy of social science, social inequality, social statistics, social simulation and complexity. He is author of various articles in *Révue Française de Sociologie*, *Archives Européennes de Sociologie*, *L'Année Sociologique*, *Mathématiques et Sciences Humaines*, *Quality and Quantity*, *Studi di Sociologia*. His first book about an application of agent-based modelling to educational stratification is in press at *Presses Universitaires de Paris Sorbonne*.