

Options for Moving beyond the Canonical Model of Regional Path Dependence

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Abstract

Ron Martin's recent critique of the canonical model of regional path dependence constitutes a significant original contribution to evolutionary economic geography, and is likely to open up a whole new range of promising directions of theoretical debate and empirical research. In the first part of my commentary, I highlight and discuss the following two assumptions implicit in his work: (1) broader and less restrictive models are better than narrow and restrictive ones; and (2) economic geographers are better served by a model that emphasizes change than by one that emphasizes continuity. In the second part of my commentary, I suggest that Martin's own alternative model could be further developed by: (1) replacing the binary distinction between 'path as movement to stable state' and 'path as dynamic process' with a continuum; (2) avoiding, with the help of mereology, the hasty generalization to regional economies of processes of change originally theorized in the context of institutions; and (3) tracing the implications for evolutionary economic geography of the recent analytical work on contingency — a hitherto under-theorized concept that has been central to evolutionary reasoning in general, and to the problematic of lock-ins in particular.

A number of recent developments indicate that evolutionary economic geography is engaged in a process of thorough re-evaluation of its conceptual foundations. The focus of this commentary is on what I take to be by far the most promising of these developments, namely Ron Martin's (2010) proposal for a major move beyond the canonical model of regional path dependence. According to Martin, the reasons for the inadequacy of the canonical model are, first, its narrow and restrictive applicability, and second, its conceptual reliance on problematic equilibristic thinking. In more substantive terms, the canonical model is guilty of emphasizing continuity rather than change, whereas Martin feels that economic geographers need a model that stresses change rather than continuity. With this belief in mind, he ventures outside geography, into political science and historical sociology, in a search for ways of thinking about institutional path dependence that hold the promise of avoiding the connotations of stasis implied by the metaphor of 'lock-ins'. He finds four such promising ideas (layering/delaying, conversion, structured variety and recombination) and proposes that they have 'readily identifiable counterparts' (*ibid.*: 22) in the geographical study of local and regional economies. The culmination of his work is a synthesis (*ibid.*: Figure 5) that dialectically surpasses both the thesis of the canonical model and the antithesis to it that emerged in

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political science and historical sociology. Economic geographers can now have the best of both worlds. It is for this reason that I personally rank his reconceptualization of regional path dependence as the single most important original contribution to evolutionary economic geography of the last decade. It certainly holds the promise of opening up a whole new range of exciting theoretical debates and ingenious empirical studies.

Bearing this overall positive assessment in mind, I submit the remainder of this commentary in a constructive spirit, as a means to stimulate further debate and to identify some of the work that remains to be done in the wake of Martin's seminal contribution. In a nutshell, I think it is useful to highlight and discuss two of the deep assumptions on which Martin's project rests: the first is the idea that broader and less restrictive models are better than narrow and restrictive ones; the second is the idea that economic geographers are better served by a model that emphasizes change than by one that emphasizes continuity. After having paused to reflect on these assumptions, I continue the commentary by suggesting that Martin's own alternative model could be improved by: (1) replacing the binary distinction between 'path as movement to stable state' and 'path as dynamic process' with a continuum; (2) avoiding, with the help of mereology, the hasty generalization to regional economies of processes of change originally theorized in the context of institutions; and (3) tracing the implications for evolutionary economic geography of the recent analytical work on contingency — a hitherto under-theorized concept that has been central to evolutionary reasoning in general, and to the problematic of lock-ins in particular. Lest my comments seem excessively negative, I hasten to add that everything in Martin's work which I do not explicitly criticize, I implicitly praise. Furthermore, the criticism itself is intended to be constructive, i.e. to open up fertile conversations rather than give premature verdicts on a work still in progress.

Martin's critique of the canonical model

To criticize a model for being narrow and restrictive presumes that, *ceteris paribus*, broader and less restrictive models are better. The following shrewd elaboration of a suggestive analogy may enable us to begin to understand just what might be problematic with this presumption (Cohen and Stewart, 1994: 365):

A theory is like a net. It catches what it's designed to catch . . . A shrimp net yields shrimp, a tuna net tuna, a whale net whales . . . That's great, because you can catch one type of thing without wasting your time on all the others. But a Theory of Everything is like a Net for Everything, a net that catches everything in the ocean. Such a net would have a mesh so fine that it catches every atom in the ocean, and every particle of light. It would be a vast sheet of black plastic. When you go fishing with it, you catch the entire ocean, intact. But if anybody asks you what's in the net you have no idea. It is black; you can't see inside, and even if you could, you can't pick out anything interesting. Yes, it's wonderful to know that the Net for Everything contains the entire ocean, but it's not much use if you can't get anything out.

Martin criticizes the canonical model because it does not capture all the complexities of the evolutionary dynamics of regional economies, but a more charitable interpretation of that model would be that maybe it was not set up for such a grandiose and elusive task. Instead, its circumscribed (and therefore empirically tractable) purpose was to explain why and how a regional economy changes so drastically between an initial time t (high contingency and instability) and a subsequent time $t + 1$ (lock-in to one of the absorbing states of a non-ergodic Markov process). Seen in this light, it becomes apparent why Martin's claim that the canonical model stresses continuity at the expense of change rests either on a misunderstanding or, more likely, on a different angle of vision or frame of

reference. The model can be interpreted as being all about change: the change of a regional economy from one regime characterized by uncertain ground rules, instability, diversity of economic agents and contingency, to a regime characterized by a lock-in into a basin of attraction that gives the appearance of stasis (*cf.* Djelic and Quack, 2007). One of Martin's (2010: 6) ambitions is to extend the canonical model backwards (from time t to time $t-1$) because he feels that 'to regard path creation as . . . accidental . . . is not particularly revealing'. But this extension is problematic on both logical and epistemological counts, because it quickly becomes intractable: once at time $t-1$, the very same thirst for comprehensive understanding that pushed the researchers from t to $t-1$, will push them from $t-1$ to $t-2$, and so on, until we reach the Big Bang. If philosophers and logicians (who do not have to do empirical research) are worried about infinite regress problems, empirically oriented economic geographers should be all the more so.

But let us suppose for the sake of argument that Martin is right about the claim that the canonical model emphasizes continuity rather than change. Why should that fact count as an argument against the canonical model? Why should economic geographers focus on change rather than continuity? If one sees an island of stability in an ocean of change, one is likely to perceive the island as out of the norm, and therefore in urgent need of being explained (see White, 2005 for a discussion of the urgency of *explananda*). Ours are times of rapid change, so it would seem all too human to take economic change for granted (the norm, the expected, the banal, the background) and to be puzzled by those regional economies that defy change and seem locked-in into a self-similarity across time (Becker *et al.*, 2006). If this reasoning is right, then the emphasis on stability should count as an argument for, not against, the canonical model. The foregoing inferences pull us into the vortex of a broader and deeper problem in general epistemology (Lipton, 2004) and the philosophy of historiography (White, 1965), namely the problem of the value-relativity of explanation. Different scholars with different theoretical training, and therefore different expectations, are likely to perceive different things in need of being explained (i.e. different *explananda*; Shanteau, 2001). To give an example, if one is a Marxist, one assumes that people are born biologically equal, and therefore the abnormality crying out for an explanation is human inequality. If, on the other hand, one is a conservative or a behavioral geneticist, human inequality appears as an obvious fact of life, and what is abnormal is the obsession of the Left with achieving equality at all costs. Economic explanation is never explanation *simpliciter*. As researchers, we never really ask 'Why fact p happened?'. Instead, either implicitly or explicitly, we ask 'Why fact p happened rather than foil q ?'. In other words, explanation has a contrastive character (Lipton, 2004): we want to know why and how a surprising fact p occurred, rather than the expected foil q . Different scholars with different interests and theoretical expectations might try to explain the same fact p , but by choosing different foils for it: why lock-in rather than ongoing contingency (Paul David, Brian Arthur); why lock-in rather than incremental change and ongoing adaptation (Ron Martin). Alternatively, they might disagree even about the very fact that needs explaining: why stability rather than change versus why change rather than stability. What all these messy but unavoidable relativisms mean is as plain as it is clear: Martin's argument against the canonical model may indeed sway those economic geographers who think that we are better off if we concentrate on change. Those economic geographers, however, who think that in these times of pervasive change we might understand economic processes better if we focus on the mechanisms that generate stability,¹ will be less moved by his account (see also Shanteau, 2001).

1 For the sake of precision, as I discuss later in the commentary, note that all the world changes all the time. What we refer to as 'stability' is an entity that keeps changing in the same way, and therefore appears to us as not changing. What we refer to as 'change' is an entity that changes its ways of changing. In other words, in a process philosophy perspective (Rescher, 1996; Abbott, 2001) 'stability' is shorthand for first-order change (something that keeps changing in the same way), whereas 'change' is shorthand for second-order change (something that changes its way of

Martin's model of regional path dependence

So far I have outlined the assumptions underlying Martin's critique of the canonical model; for the second part of this commentary I would like to explore more closely Martin's own alternative to this model. Of the three suggestions that I contribute for its further development, the first one brings to bear the insights of process metaphysics (Rescher, 1996) on Figure 5 in Martin (2010) — the culmination of his theoretical moves. I suggest, on process metaphysical grounds, that the binary distinction between 'path as movement to stable state' and 'path as dynamic process' may be too coarse and should, for the sake of both accuracy and empirical utility, be replaced with a continuum. This is because, as a scholar of many-valued logics (Kosko, 1993: 5) remarked: 'Science reveals a world of jagged edges and quantities that vary smoothly. More precision does not take the gray out of things — it pins down the gray'. Binary (or digital) distinctions create artificial borders, and whenever one creates borders, one creates the problem of border-cases and the attendant arbitrariness of forcing them to fit into one box or the other. Maintaining Martin's dichotomy would have the infelicitous consequence of leading scholars to equate lock-ins with a frozen state. From an ontological point of view it is wiser to forcefully bring out the fact that any apparent frozen state is itself a process, which only gives the semblance of immobility because of the higher rate of change in the surrounding processes. In other words, immobility in the economic world is always only an illusion, a framing effect ensuing from the perception of differential rates of change. Both the flower and the mountain are fading, but their different paces make us see the mountain as static. The advantages of incorporating into Martin's model the postulates of process metaphysics (as opposed to those of a substantialist metaphysics; cf. Rescher, 1996) are manifold. First, by postulating that everything is change and process, we can replace his binary 'path as movement to stable state'/'path as dynamic process' with a continuum of change. Second, an apparently static entity such as a locked-in regional economy emerges redefined as a thing that 'keeps changing in the same way' (see also Abbott, 2001 and footnote 1 above). This phrase is cleverer than it first seems, because it allows us to apprehend that what we usually mean when we say 'economic change' is 'a change of economic change'. As Rescher (1996: 17) shows, 'everything in the world is caught up in a change of some sort, so that it is accurate rather than paradoxical to say that what is changing is change itself'. Third, by assuming the universality of economic change, the abnormal thing that needs explaining becomes the locked-in regional economy, which enigmatically 'keeps changing in the same way'. By embracing process metaphysics, we can begin to unlock this enigma in a principled manner. These carefully crafted words from Rescher (*ibid.*: 39) will clarify what I mean:

But how can a process preserve its own self-identity in the face of alteration — how it can be one particular item and yet change? The answer lies in a single factor: internal complexity. A process does not change as such — as the particular overall process at issue — but any such process can incorporate change through its unifying amalgamation of stages or phases . . . Even as a story can encompass foolishness without itself being foolish, so a process can encompass changes without itself changing.

The second constructive suggestion I offer for the further development of Martin's model concerns the need to be more careful about the temptation to commit the fallacy of hasty generalization. It is a serious matter because, as the leading contemporary logician who studied the subtleties of this kind of fallacy (Walton, 1999: 161) remarks, 'this fallacy can be used as a sophisticated tactic to boost up the apparent acceptability of a conclusion drawn by a generalization through using the power of suggestion'. Whereas the four

changing). There is therefore no contradiction at all between saying, on one hand, that a research focus on stability (i.e. stable pattern of change) is desirable, and saying, on the other hand, that everything is changing.

processes of layering/delaying, conversion, structured variety and recombination have been studied in historical sociology and political science in the context of institutional change (see the other contributions to this debate, namely Drahoukoupil, 2012, this issue; Oosterlynck, 2012, this issue), Martin (2010: 22, emphasis added) nonetheless believes that ‘these processes have *readily identifiable counterparts* in local industrial and technological development’. I do not think that a totally clear and fully convincing case has been made that this is indeed the case. I fear that there is a danger of importing uncritically certain notions initially developed to characterize institutional change, and applying them to local and regional economies without serious analysis of the differential mereological properties of these two types of entities. Mereology is the branch of metaphysics concerned with part–whole relations, and its insights are particularly relevant for any attempt to compare and contrast two composite entities — namely institutions and regional economies. After having read Peter Hedstrom’s (2005: 67–100) piercing analysis of the mechanisms of social interaction and social change and Mario Bunge’s (2004: 9–25) discerning comparison of the processes of combination and association, I fear that institutions and regional economies might be two quite distinct kinds of collective entities, and that therefore the processes of change studied in the first do not straightforwardly map into the second. To give just one example of what worries me, consider the often-noted fact that institutions have the general property of being internally stratified. This is important, because institutional change crucially depends on precisely this property. In Hedstrom’s (2005: 97) own words, ‘a single individual’s action can have a substantial impact in a large collectivity, if this collectivity is internally stratified’. This property, however, can only tenuously (if at all) be said to obtain for the case of a regional economy. The direct epistemological consequence of this dissimilarity is that processes of change in institutions and processes of change in local and regional economies cannot be taken to be isomorphic.

My last suggestion for developing Martin’s contribution pertains to some of the recent work I have done on the concept of contingency (Simandan, 2010). As any serious review of evolutionary economic geography and evolutionary economics would quickly reveal (e.g. Boschma and Martin, 2010), the concept of contingency is central to evolutionary reasoning in general and to the problematic of regional path dependence in particular. Consider the following telling quote from Martin (2010: 3, emphasis added):

We obviously need to ensure that we know what it is that we are discussing. This precaution applies especially to the notion of lock-in, arguably the core concept of the path dependence model. *It is this notion that most fully captures the idea that the combination of historical contingency and the emergence of self-reinforcing effects steers a technology, industry, or regional economy along one ‘path’, rather than another.*

I highlighted in the text Martin’s key observation that the concept of lock-in is a higher-order abstraction that emerges from the bringing together of two other abstractions: the concept of contingency and the concept of self-reinforcing feedback loops. Martin’s piercing observation immediately suggests the idea that one cannot fully understand the ramifications of the concept of lock-in without having a solid understanding of the other two concepts presupposed by it. There has been a lot of attention paid recently to reinforcing loops in social systems (e.g. Lane and Husemann, 2008) and my reading of *The Handbook of Evolutionary Economic Geography* (Boschma and Martin, 2010) led me to conclude that economic geographers have a sound grasp of this concept. But can the same be said about the idea of contingency? In my recent article published in *Environment and Planning D* (Simandan, 2010) I deplored the fact that not only economic geographers, but also human geographers more generally, have engaged in a fetishism of the idea of contingency at the expense of a careful logical and philosophical analysis of the structure of this concept. Once we pause to investigate with the tools of formal logic the precise manner in which this concept works, an apparently simple idea turns out to be riddled with logical perplexities and philosophical

conundrums: (1) whether something appears contingent or necessary depends on the amount of detail with which it is described; (2) an implication of (1) is that contingency and necessity are best conceptualized as the extremes of a continuum rather than as digital categories; (3) excessive levels of either contingency or necessity reduce our ability to control the course of events; and (4) the truth status of the hypothesis that a particular historical event was contingent is empirically undecidable, which means that any talk that relies on the notion of contingency is far more speculative than we would like to believe.

The results of this formal analysis of contingency were surprising even for me, and I have yet to explore (hopefully with Martin's help) just how it changes our understanding of regional path dependence, lock-ins and evolutionary reasoning more generally. The point I am trying to make here is that one fruitful avenue for further work in evolutionary economic geography would be the bringing together of Martin's analysis of lock-ins and my analysis of contingency, to see what might perhaps emerge when we begin to tie these loose ends together.

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References

- Abbott A. (2001) *Time matters. On theory and method*. The University of Chicago Press, Chicago.
- Becker, M.C., T. Knudsen and J.G. March (2006) Schumpeter, Winter, and the sources of novelty. *Industrial and Corporate Change* 15.2, 353–71.
- Boschma, R. and R. Martin (eds.) (2010) *Handbook of evolutionary economic geography*. Edward Elgar, Cheltenham.
- Bunge, M. (2004) *Emergence and convergence. Qualitative novelty and the unity of knowledge*. University of Toronto Press, Toronto.
- Cohen, J. and I. Stewart (1994) *The collapse of chaos*. Penguin, London.
- Djelic M.-L. and S. Quack (2007) Overcoming path dependency: path generation in open systems. *Theory & Society* 36.2, 161–86.
- Drahokoupil, J. (2012) Beyond lock-in versus evolution, towards punctuated co-evolution: on Ron Martin's 'Rethinking regional path dependence'. *International Journal of Urban and Regional Research* 36.1, 166–71.
- Hedstrom, P. (2005) *Dissecting the social. On the principles of analytical sociology*. Cambridge University Press, Cambridge.
- Kosko, B. (1993) *Fuzzy thinking. The new science of fuzzy logic*. Hyperion, New York.
- Lane, D.C. and E. Husemann (2008) Steering without Circe: attending to reinforcing loops in social systems. *System Dynamics Review* 24.1, 37–61.
- Lipton, P. (2004) *Inference to the best explanation*. Second edition, Routledge, London.
- Martin, R. (2010) Roepke lecture in economic geography — rethinking regional path dependence: beyond lock-in to evolution. *Economic Geography* 86.1, 1–27.
- Oosterlynck, S. (2012) Path dependence: a political economy perspective. *International Journal of Urban and Regional Research* 36.1, 158–65.
- Rescher, N. (1996) *Process metaphysics. An introduction to process philosophy*. State University of New York Press, Albany, NY.
- Shanteau, J. (2001) What does it mean when experts disagree? In E. Salas and G. Klein (eds.), *Linking expertise and naturalistic decision-making*, Lawrence Erlbaum Associates, Mahwah, NJ.
- Simandan, D. (2010) Beware of contingency. *Environment and Planning D: Society and Space* 28.3, 388–96.
- Walton, D. (1999) Rethinking the fallacy of hasty generalization. *Argumentation* 13.2, 161–82.
- White, M. (1965) *Foundations of historical knowledge*. Harper & Row, New York.
- White, R. (2005) Explanation as a guide to induction. *Philosopher's Imprint* 5.2, 1–29.

Résumé

La récente critique du modèle canonique des sentiers de dépendance régionaux qu'a présentée Ron Martin constitue un apport original important pour la géographie économique évolutionniste, laissant présager de nouvelles orientations prometteuses pour le débat théorique et la recherche empirique. La première partie de ce commentaire souligne et analyse deux hypothèses implicites dans son travail: les modèles généraux et peu contraignants sont meilleurs que les modèles limités et restrictifs; les géographes économiques ont intérêt à utiliser un modèle qui s'attache au changement plutôt qu'à la continuité. Dans la seconde partie, il est suggéré que le modèle de Martin pourrait lui-même être développé selon trois axes: remplacer par un phénomène continu la perspective binaire du sentier vu soit 'comme un mouvement vers un état stable', soit 'comme un processus dynamique'; en s'appuyant sur la méréologie, éviter de généraliser hâtivement aux économies régionales les processus de changement conçus à l'origine dans le cadre d'institutions; repérer comment la géographie économique évolutionniste peut être affectée par les récents travaux analytiques sur la contingence — notion peu théorisée jusqu'ici, mais centrale pour la logique évolutionniste en général, et la problématique des blocages (lock-ins) en particulier.