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Cultural longevity: Morin on cultural lineages

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Olivier Morin's *How Traditions Live and Die* is a valuable book. It offers a thorough analysis of contemporary accounts of cultural evolution, and presents the most developed genealogical approach to culture since Dan Sperber's (1996) *Explaining Culture*. It is praiseworthy for bringing the methods and models of cultural evolution (e.g. Cavalli-Sforza and Feldman 1981; Boyd and Richerson 1985; Sperber 1996) in to dialogue with a mesmerising range of anthropological, ethnographic, and psychological results. Particularly interesting is a large section on childhood traditions – a fascinating exploration of how behavioural traditions can be maintained over time in unusual conditions.

Morin's master argument is that the picture of how humans acquire behaviours (Morin's *'cultural transmission'*) put forward by dual-inheritance theorists like Peter Richerson, Robert Boyd, and Joseph Henrich is wrong. This picture, which according to Morin relies on mechanisms of high fidelity instances of imitative learning, is deficient in capturing how traditions of behaviour are maintained over time. Instead, Morin argues that we need to recognise behavioural traditions, or lineages, are maintained by ostensive communication, a wide range of socio-demographic factors, and by what he calls he calls 'intrinsic appeal' and 'cultural attraction.'

In what follows, I examine this master argument. First, I show that some aspects of Morin's positive picture might be less compelling than suggested. Next, I argue that his characterisation of Richerson, Boyd, and other dual-inheritance theorists might not be on target. Finally, I show that Morin's focus on oral traditions underemphasises the wide range of environmental structures that may play important roles in stabilising and maintaining behavioural lineages. As I hope becomes clear, my analysis does not attempt to provide a refutation or knockdown argument against Morin's approach. Instead the following should be seen as highlighting some important conceptual issues raised by the text, with the aim of opening a fruitful middle ground between his approach and that of the dual-inheritance theorists.

Cultures, Traditions and Transmission

In a 2012 article, Peter Godfrey-Smith looks at how spatiotemporal 'zooming' (moving between levels of spatiotemporal grain or scale) allows one to observe different kinds of processes and change within and across populations. At the smallest scale (the most 'zoomed in'), one can model, observe, and possibly intervene on the processes that regulate how behaviours (or traits more generally) are distributed in populations. At the next scale up, one can look at how lineages of behaviours (traits) are formed, and which ones succeed over many generations. Morin's analyses straddle these two spatiotemporal scales. He is interested how behaviours are distributed and acquired by individuals in a population, and how this acquisition process might have effects on the constitution and long-term stability of behavioural lineages.

Morin focuses his discussion on two problems, what he calls the *wear-and-tear* problem and the *flop* problem. The wear-and-tear problem is a problem facing behavioural lineages: how are such lineages maintained in the face of noisy and error-prone learning? The flop problem, by contrast, is a problem facing the initial

distribution of behaviours in a population. Lots of behaviours are produced by individuals in a population, and only some of those go on to be acquired by other individuals and form long-term, intergenerational lineages. One of Morin's key interventions in the cultural evolution literature is to draw attention towards this flop problem, and to examine in some detail how factors affecting behavioural acquisition have ramifications for the number and longevity of behavioural lineages.

Keep attention for the moment on the flop problem. Morin suggests that there are two broad categories of causal factors that influence the likelihood that behaviours will be picked up and disseminated over time. The first, factors of *accessibility*, are sets of exogenous factors, external to the agent. The second, factors of *attraction,* are endogenous factors, picking out causal factors internal to agents. I will have more to say about this conceptual and empirical split between causal-explanatory factors as I go along. For the moment, though, let us consider these two sets of factors in more detail.

Accessibility has to do with the extent to which individuals have access to opportunities for acquiring behaviour. Accessibility can be changed in virtue of the physical distribution of individuals in an environment, the number of individual in a population, and power relationships (in that some powerful individuals can control access to, and costs of, learning opportunities) among other factors. Accessibility factors, quite simply, have to do with the way in which features exogenous to agents can impact the opportunities for learning and innovating certain behaviours – and this in turn can have direct consequences on which behaviours will flourish over time.

But what about *attraction*? Here things are less clear. We're offered several articulations of 'attraction', 'factors of attraction' (pp. 8, 147 – 148), 'attractivity' (p. 8), and 'intrinsic appeal' (*passim*), none of which are very specific. As the book transpires, it seems that Morin includes cognitive, affective, doxastic, and motivational states and processes as underpinning attraction (pp. 148 – 151). If these phenomena are all potentially relevant to attraction, then 'factors of attraction' just seems to be a term for picking out whatever psychological structures and processes are involved in explaining the acquisition of behaviour and proliferation of behavioural lineages.[1] Attraction is shorthand for the endogenous.

Morin discusses two kinds of attraction, *local* and *global*. These two kinds of attraction differ in terms of their scope. Local factors of attraction pick out those factors that are somehow restricted in space and time, usually indexed to a particular population and a particular scenario, while global factors of attraction are not so restricted. As an example of local attraction, Morin cites the case of the 'Manchu haircut':

> Legend has it that the Manchu haircut (a tight braid in the back behind a shaved head) had been adopted because it freed the field of vision of steppe raiders. Others say the braid could be used as a pillow to sleep on the rough. Unsatisfying just-so-stories, perhaps: there are many other

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[1] It should be noted that Morin's characterisation of factors of attraction is much broader than other definitions proffered by cultural epidemiologists. Sperber (1996), for instance, predominantly considers the doxastic background of an individual in determining the extent to which certain behaviours are acquired, in virtue of the fact that doxastic backgrounds bias processes of inferential reconstruction during learning.

ways to get one's hair out of one's eyes, or to improvise a cushion. [...] Either way, it was such a strong symbol for the Manchu Qing dynasty that it decided, upon its accession, to make it mandatory for all the emperor's subjects, on pains of death. (p. 146)

Here, an imbalance in power has radical implications for what behaviours are attractive. Severe punishment for the innovation and proliferation of new haircuts means that the Manchu haircut is the only game (or haircut) in town. Much attraction, Morin suggests, is going to be like the Manchu haircut. It is going to be local in nature. Thus, most explanations of behavioural proliferation and lineage persistence will come down to quite local and context-sensitive combinations of psychological factors and political, social, and demographic contingencies.

But what about *global* factors of attraction? Here, it seems, we cannot appeal to such local and context-sensitive contingencies. Indeed, here Morin leans heavily on the notion of *intrinsic appeal*. Morin seems to equate 'intrinsic appeal' with something like a human nature: long-standing traditions "succeeded because they appealed to the most generic, species-universal kind of appeal." (p. 248) As such, intrinsic appeal picks out those behaviours that "should be of interest to anyone at all." (p. 218) From this it follows that "Unappealing traditions are less likely to stabilize." (p. 228) The most vivid instances of such 'intrinsically appealing' global factors of attraction are those that explain what Morin calls *extreme traditions.* These are exceptionally long-lived behavioural traditions. As Morin argues, it is the intrinsic "appeal of extreme traditions [that] allows [such behaviour] to make it through the passing of generations, when nothing else does." (p. 236)

Appeals to 'generic, species-universal' tastes or preferences will sound suspicious to sceptics of nativism and human nature. But even aside from such suspicions there is a further definitional worry for Morin's account. For if intrinsic appeal is whatever explains the persistence of long-lived behavioural lineages (absent confounding accessibility issues), and long-lived behavioural lineages are defined in terms of intrinsic appeal, then we have moved in a very tight, and empirically vacuous circle. This is not to say there is no mileage in the notion of intrinsic appeal, or relatively broad-scope factors of attraction. As Kimmo Eriksson and Julie Coultas (2014) have shown, some individuals preferentially attend to and pass on more disgusting elements of stories. This might be taken to support the idea that 'core disgust' is something that has species-wide impacts on the attractiveness of behaviour, and how such behaviour is relayed over time (Rozin, Haidt, and McCauley 2000). But such claims should be treated with caution. In Eriksson and Coultas' study, for instance, some individuals preferred *not* to transmit disgusting stories. There is thus a worry that generic appeals to human universals of taste or preference will run headlong into problems of cross-populational and inter-populational diversity.

The worry here is that the notion of intrinsic appeal is circular: that long-lived, or extreme behavioural lineages are intrinsically appealing because if they weren't intrinsically appealing they wouldn't be long-lived. But if the notion is not circular, then whatever the term picks out in a given situation is likely to be cashed out in local (perhaps individualistic) and context-sensitive ways; it is not clear that intrinsic appeal will track anything generalisable across populations. Both sides of this dilemma will have consequences for Morin's book. It suggests either that 'intrinsic appeal' needs to be redefined non-circularly or that it should be recognised

as a placeholder term, but one that doesn't do much work on its own. My intuitions weigh in favour of the latter. Intrinsic appeal is going to be like the concept of attraction: a useful concept, but only as a heuristic or placeholder for a wide range of heterogeneous internal structures and process relevant for behavioural acquisition. But as we've seen above, these internal factors are not explanatory on their own. It is only when internal structures and processes are seen in the context of political, social, and demographic contingencies that they can carry out the real work of explaining distributions of behaviour.

Modelling Imitation

In the central chapters of the book, Morin takes aim at what he calls 'dual-inheritance theorists.' Dual-inheritance theorists – predominantly represented here by thinkers such as Peter Richerson, Robert Boyd, and Joseph Henrich (though Michael Tomasello comes up for criticism in connection to this group as well) – are said to be committed to a picture whereby learners 'compulsively' imitate individuals according to a limited number of informational cues, mostly the prestige of individuals and prevalence of behaviours in a population. According to Morin, compulsive imitation is the way in which the dual-inheritance theorists solve the wear-and-tear problem, which is their primary aim. However, we have reason to be sceptical of this characterisation. Dual inheritance theorists are much more cautious than Morin at separating out the results of their models (predominantly dealing with the distribution of behaviours in a population) from the mechanistic interpretations of such models. There is a worry that Morin might be eliding these two strands of their thought.

In many models, dual-inheritance theorists appeal to imitation as a process that underpins high-fidelity transmission of behaviour (Boyd and Richerson 1985, 2005; Henrich and Boyd 1998, 2002; Henrich 2001, 2004; Henrich and Gil-White 2001; Richerson and Boyd 2005). But while their models appeal to "special-purpose cognitive machinery," (Boyd and Richerson 2005, p. 60) the precise structure and form of that machinery is left open for interpretation. It is true that in some instances this machinery is discussed by dual-inheritance theorists in terms of 'imitation' or 'infocopying' (e.g. Henrich and Gil-White 2001), but when we interrogate the definition of these terms we find that 'imitation' or 'infocopying' is rarely given a mechanistic interpretation or definition, merely a functional one: that it engenders the "reliable transmission of information from one brain to another." (Boyd and Richerson 2005, p. 56) Further, reliability here need not mean one-shot reliability, as dual-inheritance theorists have been quick to point out: high-fidelity transmission is likely to be the outcome of several instances of learning, perhaps under the tutelage of many different teachers and models (Richerson and Boyd 2005; Eriksson and Coultas 2012). Whatever special-purpose piece of cognitive machinery underpins the acquisition of behaviour, it can be noisy, so long as over an extended period of learning it reliably leads to the acquisition of the requisite behaviour.

This general functional role – the reliable acquisition of behaviour – can be fulfilled by a large number of underlying mechanisms. For instance, it seems perfectly compatible with Boyd and Richerson's (1985) models that their results can be explained in virtue of mechanisms that Morin endorses, those involved in ostensive communication, which in some prominent formulations requires sophisticated

metarepresentational and theory of mind capacities (e.g. Sperber and Wilson 1995; Scott-Phillips 2015). But we should not confuse the abstract role employed in many dual-inheritance models – that some mechanisms, whatever they are, allow for the reliable acquisition of behaviour – with a specific narrative or characterisation of an underlying mechanism or set of mechanisms. It is true that dual-inheritance models are representations of behavioural acquisition, and that these models require interpretation. Further, while it might be true that Boyd, Richerson and Henrich believe that the results of their models are best interpreted as mapping on to the outcomes produced by mechanisms of imitative copying (see here, especially: Richerson and Boyd 2000, 2005; Henrich and Gil-White 2001), we can separate this interpretation of their models from the results of models themselves, which make no such mechanistic assumption.

Morin appears to conflate the functional 'transmission' sense of imitation with the 'mechanistic' sense. The discussions of chapters two and three in particular are extended arguments against the idea that mechanisms of imitative, observational learning – where individuals observe and copy the behaviour of others, a view Morin attributes to Boyd, Richerson, Henrich and Tomasello – suffice to explain all the features of behavioural lineages. This might be so. It might even be the case that behavioural lineages are better explained in virtue of the psychological structures and processes of ostensive communication. But we might equally think that such phenomena could be explained in a deflationary way. Cecilia Heyes (2000, 2012a, b), for instance, suggests that environmental structures, together with simple mechanisms of learning (perhaps even associative learning) can do much of the heavy lifting in explaining the persistence of behavioural lineages over time. All these readings are compatible with dual-inheritance theory models.

This is not to diminish the effectiveness of Morin's arguments against the picture of compulsive imitation. I think that Morin has shown that the concept of imitation used by dual-inheritance is ambiguous at best (and in a way that is harmful in that it obscures important conceptual distinctions). And here it is worth reminding readers of Morin's impressive achievements in marshalling a wide range of anthropological investigations and experimental studies to convincingly show the complexities of maintaining behavioural lineages over time. Behavioural lineages cannot be wholly explained by appeals to brute imitative capacities. But as I've shown, this approach is less fatal to the approach of Boyd and Richerson than Morin might care to admit. Boyd, Richerson, and other modellers of culture can rightly acknowledge that their models are idealised representations, that their interpretations were too simple, and that anthropological data is likely to prove them less than accurate. But these models are not necessarily linked to a mechanistic interpretation of compulsive imitation, and difficulties of de-idealisation are part and parcel of any modelling enterprise.

What is lacking in Morin's criticism is a clear picture as to when and where we might expect the utility of Boyd and Richerson's modelling approach to run out, and where some other modelling paradigm might be useful. When can we assume that the processes of behavioural acquisition are 'imitation-like' – acquired with high-fidelity – and when can we not? Alternatively, if Morin wishes to reject the modelling approach entirely, then we are missing a clear statement as to what is conceptually misguided in the Boyd and Richerson modelling paradigm. If the arguments above are right, the problem can't be the mechanistic picture they adhere to, since their

models are largely *insulated* from such lower level details. But maybe there is a conceptual flaw? In either case, we need further explanation from Morin.

As a final aside on this issue, Morin admits in several places that the imitative picture isn't wrong, merely over idealised. We don't imitate *compulsively* nor do we imitate *indiscriminately*: humans are intelligent imitators, copying only when and what is rational (see here: pp. 71 – 73). If this is the case, it seems like Morin's arguments against Boyd, Richerson, and Tomasello are not only not fatal, but complementary, despite his protestations to the contrary.[2]

Salient Environments

About halfway through the book, Morin makes an unusual confession:

> "[...] little will be said in this book about technologies and institutions. [...] A consequence of this omission is that most of the traditions that will interest us here are orally transmitted." (p. 138)

As becomes clear, what Morin means by oral transmission is broad: it can involve verbal corrections, visual demonstrations, or other techniques that "need not rely on language." (p. 138) What he means by oral transmission, then, is behaviour that does not require specialist tools of transmission (i.e. written instructions or other 'high-capacity information storage technologies' [p. 153]). For Morin, transmission is characterised as consisting mostly of "ostensive communication, a soft and flexible form of transmission that always includes a reconstruction of what is transmitted." (p. 6) Ostensive communication for Morin encompasses two distinctive features: it is "*voluntary* (ostensive communicators communicate deliberately) and *overt* (to communicate ostensively is to communicate by showing that one does)." (p. 60)

Ostensive communication is implicated in a number of theories dealing with the evolution of language capabilities (e.g. Scott-Phillips 2015), but here it is primarily deployed as a means by which individuals draw attention to salient aspects of behaviour which can be attended to, observed, and imitated by learners (pp. 71 – 75). Coupled with ostensive communication, imitation can lead to the reliable acquisition of just those parts of behaviour that are relevant. For instance, in chapter six, we are introduced to experiments (from Caldwell and Millen [2008]) where groups of participants are charged with building the highest spaghetti towers and the farthest flying paper airplanes. Some groups of these participants are allowed to view and learn from the past successes and failures of other individuals, and those that do tend to build higher towers and faster planes. But if this is an example of 'oral transmission', then this term seems to include quite a lot and certainly more than ostensive communication as it includes learning from the on-going activities of others absent any voluntary and overt communication.

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[2] As Richard Moore (personal comm.) has pointed out, such considerations might reflect the fact that Morin is simply interested in explaining a different facet of culture and cultural evolution than that of Tomasello, Boyd, Richerson, and Henrich. In many of the studies of these thinkers cited by Morin (e.g. Boyd and Richerson 1985; Henrich and Gil-White 2001; Tomasello 1999), the focus is on the conditions under which certain cognitive capacities were likely to have been selected for in a process of evolution by natural selection. This is not the focus of Morin's book, which is predominantly centred on psychological considerations that impact the stability of behavioural lineages over time. But this might mean that Morin's arguments are more of a complement to the evolutionary narratives of Tomasello, Boyd, Richerson, and Henrich, rather than an alternative or argument against them.

This, I think, will lead readers to think that 'oral transmission' is really shorthand for the many factors that might impact how learners acquire behaviour; factors that might be environmental or the result of activities of other agents. While the latter is given plenty of attention, not only in discussions of ostensive communication, but also in examples of cross-cultural variation in teaching strategies (p. 85) and discussion of *involuntary and voluntary transmission* (p. 62 - 63), the former, the role of the environment, is not given much attention. Indeed, Morin seemingly does not countenance the role of *niche construction* in the acquisition of behaviour or the stabilisation of behavioural traditions over time (e.g. Odling-Smee et al. 1996, 2003; Laland et al. 2000).[3] Since a number of recent commentators have defended the relevance of niche construction to the maintenance of behavioural lineages (*inter alia* Laland et al. 2000; Odling-Smee et al. 2003; Laland and Sterelny 2006; Sterelny 2004, 2006, 2009, 2010, 2012a, b) this seems like an unusual oversight.

Niche construction, broadly, consists in the way in which the actions of individuals on the environment can have downstream consequences for the actions of other agents. Most important for current considerations is the way in which the activities of agents can shape the *epistemic* landscape of other agents (Clark 1998). Consider, for instance, Sterelny's (2010, 2012a) evolved apprentice model, which makes heavy use of the notion of niche construction:

> "Parental acts bias the environment explored by trial and error learning. As this process elaborated, increasing in fidelity and bandwidth, expertise was acquired and exercised only through very rich environmental support. Those acquiring (say) a craft skill learn by trial and error, but with access to whole, partially complete and failed exemplars of the target artefact, with the aid of tools that are initially chosen by others and with access to raw material in various stages of preparation. They would have many opportunities of observational learning; they would often have access to advice and demonstration, even in those cultures with little explicit teaching. Their trials are guided: Tasks are assigned appropriate to their skill level, but which establish capacities which are platforms for further improvement." (Sterelny 2010, p. 470)

Environments can be seeded with information about the activities of other agents. The environment can provide information as to which activities and environments as salient, it can be rich in props and cast-offs available for comparison and evaluation, and it can give a view to the costs and payoffs of different behaviours. Importantly, if the environment can play a role in broadcasting information about not only the behaviours of others, but also the costs and benefits of such behaviour, then the environment can underpin the acquisition and stabilisation of behaviours over time. And it can do so for precisely the reason that Morin thinks we have capacities for something like ostensive communication: by drawing attention to particularly salient aspects of others' behaviour left as traces in the environment.

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[3] Though, there might be an oblique reference to niche construction on the next to last page of the book: "Are traditions our "niche"? I have argued that such an adaptation would not change so many things. In the view developed here, the best way to accumulate numerous, lasting traditions is to communicate abundantly and exchange a lot of information." (p. 251)

But this feature of niche construction complicates the picture of behavioural acquisition and behavioural lineages presented by Morin (and, it should be noted, it complicates the picture given by the dual-inheritance theorists as well). It does so because it undermines the distinction between endogenous and exogenous factors on the acquisition of behaviour. If the environment (an exogenous factor) can contain information that makes behaviour easier to learn and more likely to be retained over time (endogenous factors), then niche construction can be a powerful force in behavioural acquisition – but one that straddles the conceptual and empirical divide between exogenous and endogenous.

Building Bridges

This essay has argued two points: first, that Morin's view might not be so different from the views of those he criticises, and second, that there are a range of processes and activities that both Morin and the dual-inheritance theorists fail to fully countenance. Niche construction activities show that there are a range of factors above and beyond mere accessibility and attraction that can influence behavioural acquisition and the stability of behavioural lineages. Niche construction undermines a conceptual and empirical distinction between exogenous and endogenous factors. In general, issues of niche construction problematise the quick and easy idealisations given both by dual-inheritance theorists and by Morin. In this regard, we can treat these two approaches in a common way. In this final section, I suggest that more should be done to treat dual-inheritance theorists and cultural epidemiological theorists (like Morin and Sperber) in a common way. More bridges between the two approaches need to be built.

In general, Morin's book does not facilitate this bridge building. One reason for this is the informality of the rhetoric. The prose often shifts its tone and voice. A paragraph might move from a stolid exegesis of experimental results to exuberant declarations of personal intuitions. The informality of the book is also evident in the way in which terms are discussed and defined. Some terms are defined anaphorically (notably, 'transmission' on p. 30), with near identical extensions ('culture' on p. 12 and 'traditions' on p. 37) or not at all ('cultural survival', 'cultural success', 'ludic repertoire').[4] These are important conceptual tools, many used throughout the book, and the somewhat carefree way in which they are defined means that Morin's arguments often come off more promissory than convincing.

Let me give a more concrete example of this problem. In several places throughout the book, Morin discusses, and sometimes dismisses, individuals and groups with little or no introduction of their views. For instance, the famed anthropologist Franz Boas and his views are introduced in three sentences and never mentioned again ("Fifty years later, that way of thinking still went without saying, or without saying much. The distribution and transmission of cultural traits was still the main concern of Kroeber or Boas. Cultural incoherence was little cause for wonder." [p. 44]); sociobiology and cultural materialism are introduced and criticised in a single sentence, and do not reappear in the rest of the text ("Unlike sociobiology (or its rival, cultural materialism), dual inheritance theorists put an explicit focus on the many ways in which culture causes human behavior to depart from what a mere concern for survival, reproduction, or well-being would dictate." [pp. 89 – 90]); and

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[4] As becomes clear, cultural survival is a measure of the temporal persistence of some behavioural lineage – though if this is accurate, then it has an almost an identical definition to that of 'culture' (e.g p. 197).

we are introduced to the Human Relations Area Files (HRAF), a large non-profit organization based at Yale University, in chapter one, only for it to be breezily castigated without argument ("[...] the Human Relations Area Files (among other projects) have found clever means of organizing ethnographic reports in ways that make comparative sense. Still, they suffer from the material's heterogeneity, from the need to interpret it, and from countless biases." [p. 40]). This gives the impression that many authors, organisations, and schools of thought might not have received a charitable interpretation.

This informal treatment of interlocutors is evident when Morin confronts the main targets of his book, the dual-inheritance theories of Boyd, Feldman, Henrich, Richerson, and others. Speaking of the early modelling work of Luca Luigi Cavalli-Sforza and Marcus Feldman, Morin argues that, in their models, "cultural transmission was as good as automatic, and its strategic dimensions were largely ignored." (p. 89) This might be true, but it warrants further discussion and unpacking, which Morin does not provide. Similarly, Morin discusses Henrich's (2001) model of conformist transmission (on p. 105), and then quickly moves to criticise Henrich and Henrich's (2007) anthropological work for its overreliance on such conformity (*Ibid.*). While conformity does loom large in Henrich and Henrich's (2007) account, it is often of a different kind than that discussed in Henrich (2001): *normative* conformity rather than conformist *transmission*. But Morin's rather quick move from one source to the other glosses over this rather crucial distinction.

Let me reiterate that Morin has made a compelling case for greater scrutiny of several concepts used in contemporary theorizing about cultural change. His discussion of children's folklore, for example, is a fascinating and compelling study of how fast generational turnover can have interesting repercussions for how behavioural lineages are maintained, and the speed by which they can be changed. Similarly, too, his discussion of imitation is useful in showing how one *should not* de-idealise dual-inheritance theorists' models. But Morin has not hit the dual-inheritance theory at its heart. Indeed, I suspect that many dual-inheritance theorists will feel like Morin's arguments have missed the mark.

Furthermore, Morin has missed several opportunities to stress the continuity and commonalities between his approach and those he criticizes. In particular, Henrich and Boyd's (1998. See also: Henrich 2004) model of cumulative adaptive culture appeals to two distinct kinds of error: the ease (or difficulty) by which a model's intentional behaviour is understood, and the ease (or difficulty) by which the model's actions can be accurately replicated by the learner. These kinds of error sound very similar to the kinds of error implicated in ostensive communication. However, by focusing on the extent to which individuals like Henrich or Boyd (rightly or wrongly) endorse imitation as underpinning behavioural lineages, Morin has overlooked concepts and discussions that might have minimised the distance between his view and the views of those he criticizes.

Some recent articles (e.g. Acerbi and Mesoudi 2015) have attempted to provide greater clarity about the differences and similarities between those who think ostensive communication and cultural attraction underpin behavioural lineages (Morin, Sperber, Scott-Phillips, Claidière) and those who favour something like dual-inheritance theory (Boyd, Richerson, Henrich). While Morin's book is meant as like-minded attempt to get clearer on the similarities and differences between these

approaches to cultural evolution, because of the scope of the issues covered, the speed by which they are discussed, and the rhetoric used to analyse them, I am not convinced that he succeeds in this effort. But the goal is one that we should be striving towards. The problems of cultural evolution are complex and multi-faceted, and we need to continue to encourage a spirit of collaboration, charitable interpretation, and intelligent dialogue. Morin's book is clearly written in this collaborative spirit. And while I have highlighted a number of interesting and compelling conceptual issues raised by the book, this is to its credit, not to its detriment. Morin's book is an admirable work, and will foster many discussions in the years to come.

Acknowledgements

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