Contribution submitted for: Agathe du Crest, Martina Valkovic, Philippe Huneman & Thomas A.C. Reydon (eds.)
Evolutionary Thinking Across Disciplines: Problems and Perspectives in Generalized Darwinism. Springer.

Pluralism and epistemic goals: why the social sciences will (probably) not be synthesised by evolutionary theory

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Abstract: This article discusses Mesoudi et al.'s suggestion to synthesise the social sciences based on a theory of cultural evolution. In view of their proposal, I shall discuss two key questions. (I) Is their theory of cultural evolution a promising candidate to synthesise the social sciences? (II) What is the added value of evolutionary approaches for the social sciences? My aim is to highlight some hitherto underestimated challenges for transformative evolutionary approaches to the social sciences that come into view when one looks at these questions against the backdrop of actual scientific practice in the social sciences.

Key words: cultural evolution, unity of science, quantification, idealisation, naturalism, interpretationalism.

1. Introduction

There is a long tradition of attempts to apply evolutionary thinking to the social sciences. In many cases, these attempts have been made by social scientists trying to use elements of evolutionary theory (broadly construed) for understanding the development of societies or institutional change. Herbert Spencer's theory of social evolution is arguably the most prominent classic (and notorious) example, but there are many more attempts to utilise

evolutionary theory, for example in social systems theory (Luhmann, 2012, Chapter 3), in organisational theory (Hannan & Freeman, 1989), and in the context of economics and institutional theory (Hodgson & Knudsen, 2010).

In recent decades, there have also been attempts by scientists from other fields, in particular biology, psychology, and philosophy of science, to apply elements of evolutionary theory to the realm of the social sciences. These attempts are in most cases either led by the motivation to provide alternative – and: better or deeper – explanations of social phenomena, e.g. by providing an evolutionary mechanism that would explain the occurrence or persistence of a social institution (Alden Smith, 2000; Winterhalder & Smith, 2000) or to reduce human behavioural patterns to naturally evolved mechanisms of our brain (Cosmides & Tooby, 1989, 1994; Tooby & Cosmides, 1989). The other main motivation is to transform the social sciences based on evolutionary theory in order to improve their epistemic status in some sense, e.g. by aligning them to the more successful natural sciences. Alex Rosenberg is a prominent proponent of this approach. He argues for the reorganisation of the social sciences and their epistemic practices in light of the view that these "need to take seriously their status as a division of biology" (Rosenberg, 2017, p. 341). Although both motivations frequently overlap[1], there is a key difference. In the first case, the main idea is to supplement the social sciences with evolutionary theory or to provide evolutionary explanations for certain socio-cultural phenomena. The second case aims at reconstructing the social sciences including their epistemic practices on a fundamental level according to or via a theory of cultural evolution.

In this article, I will focus on the latter motivation and discuss a prominent proposal to transform the social sciences that has been developed and defended by Alex Mesoudi together with Kevin Laland and Andrew Whiten. According to these authors, the social sciences can and indeed should be unified or "synthesised"[2] under the umbrella of a Darwinian theory of cultural

[1] See, e.g., the ambiguous claims regarding sociology at the end of E. O. Wilson's chapter on "Man" in his *Sociobiology*,

[2] I will use the terms 'synthesise', 'integrate' and 'unify' in the same sense.

evolution. In view of their proposal, I shall discuss two key questions. (I) Is their theory of cultural evolution a promising candidate to synthesise the social sciences? (II) What is the added value of evolutionary approaches for the social sciences? My aim is to highlight some hitherto underestimated challenges for transformative evolutionary approaches to the social sciences that come into view when one looks at these questions against the backdrop of actual scientific practice in sociology, cultural anthropology and political science, arguably centrepiece disciplines of the social sciences.

I will not reject an evolutionary synthesis of the social sciences based on fundamental ontological or epistemological objections against the application of evolutionary theory to the sphere of the social sciences. Hence, I will not be concerned with prominent themes in the literature, such as foundational criticism of mainstream concepts of culture in evolutionary theory (Lewens, 2012, 2015, p. 135f) and analyses of ontological dissimilarities between explananda in the biological and the social world (Reydon & Scholz, 2009; Reydon, 2021).Nor will I refer to discussions that criticise evolutionary explanations in the social sciences for their lack of explanatory power (Schatzki, 2001) or arbitrariness and reductionism (Dupré, 2001). Finally, I will not be focussing on problematic political implications of theories of cultural evolution (Chellappoo, 2021). Rather, I will use one of the most sophisticated candidates for transforming the social sciences based on a theory of cultural evolution as an illustrative example to draw out several pragmatic and methodological challenges for evolutionary approaches of this type. In doing so, I assume that many aspects of my discussion generalise to other “transformative projects”.

This is how I will proceed. In section 2, I will introduce Mesoudi at al.’s core idea, namely to use evolutionary theory as a unifying theoretical framework for the social sciences. The main part of this article will scrutinise five central background assumptions of their approach (section 3). I will attempt to show that these assumptions cannot be taken for granted, and that each of them relies on a problematic, sometimes implicit rationale. The discussion will throw a sceptical

light on the prospects of success for synthesising the social sciences through evolutionary theory (question I) and also address the question (II) after the added value of evolutionary approaches for the social sciences. I will conclude the article by highlighting implications of my discussion for the chances to integrate the social sciences and by making recommendations for increasing the likelihood of acceptance of evolutionary approaches in the social scientific community (section 4).

2. What does it mean to 'synthesise' the social sciences?

In this section, I will introduce the core idea of Mesoudi and colleagues and discuss their underlying motivation for synthesising the social sciences. I will base my discussion on the approach as it is developed in Mesoudi et al. (2006) and in Mesoudi (2011), building on the landmark work by Cavalli-Sforza/Feldman (1981) and Boyd/Richerson (1988; 2005). In a nutshell, their core idea is to use the theory of Darwinian evolution as a unifying theoretical framework for the multidisciplinary and multiparadigmatic social sciences, based on the observation that cultural evolution resembles biological evolution in key respects.[3] The proposed framework consists of (a) a common language for the social sciences based on evolutionary thinking, e.g. talk about populations, population-level patterns, and evolutionary histories as units of analysis; (b) a set of ideas concerning the concepts of culture and cultural change, e.g. 'selective cultural transmission' and 'cultural drift' as key mechanisms of cultural change; (c) postulates concerning (the right) explanatory tools and (the right) methodology, in particular setting quantification and mathematical evolutionary modelling as explanatory gold standard; and (d) a proposed structure of epistemic relations between fields of research (see fig. 1).

[3] I realise that "the theory of Darwinian evolution" is quite vague. As will become clear, however, the details of this notion do not matter for the discussion in this article.

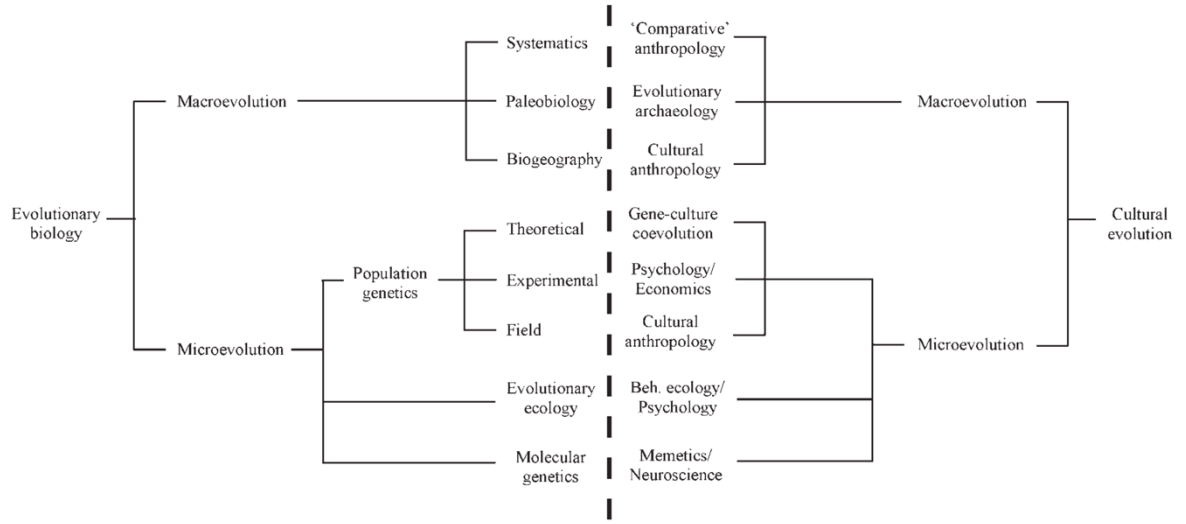

Fig. 1: Epistemic relations between fields (reprinted from Mesoudi, Whiten & Laland, 2006; there is a slightly modified version in Mesoudi, 2011, p. 211)

The idea is to model the relationship between major disciplines and subdisciplines in the social sciences (broadly construed, i.e. including history/archaeology and, somewhat oddly, even parts of neuroscience) under the umbrella of a theory of cultural evolution and corresponding to epistemic relations between disciplines and subdisciplines in biology. For instance, as there are certain disciplines that aim at a macroevolutionary understanding of biological processes, there are supposedly corresponding social scientific disciplines that aim at a macroevolutionary understanding of cultural processes. The same goes for understanding microevolution. To illustrate the feasibility and fruitfulness of this idea, Mesoudi and colleagues discuss and compare several approaches in biology and the social sciences to point out analogies of their epistemic aims and practices in representing or explaining evolutionary processes. These examples include paleobiology characterised as “using the fossil record to identify prehistoric species and reconstruct their evolutionary history” (i.e. macrotrends) (Mesoudi et al., 2006, p. 333), which they compare to archaeology’s goal of analysing cultural artefacts to reconstruct their evolutionary history, such as the evolution of projectiles over a longer period of time. Another example compares mathematical models in biology that describe microevolutionary processes on the level of genes with models in socio-psychology

that describe the transmission of cultural traits and believe frequencies in human populations (Mesoudi et al., 2006, p. 338).[4]

In these and other cases (see Mesoudi, 2011, Chapter 3-8), the main goal is to point out similarities between approaches in biology and the social sciences in order to make the case for the viability of an evolutionary synthesis of the social sciences in analogy to biology. The proposed epistemic framework is meant to serve as a kind of scaffold for this synthesis. The crux of this idea is to have explanatory projects situated at different levels (micro/macro) and with different foci (e.g. reconstructing lineages or distributions of cultural traits) that are organised around a common epistemic goal: understanding cultural evolution in a broadly Darwinian sense.

It is noteworthy that Mesoudi et al.'s approach does *not* aim at "biologising" the social sciences, i.e. it is not their intention to reduce everything social or cultural to the level of biology. Rather they explicitly argue for paying attention to important differences between biological and cultural evolution, as demonstrated by the consideration of the role that human agency and learning play in cultural evolution (Mesoudi, 2011, pp. 43-47). In other words, although their idea is to fundamentally transform the social sciences, their epistemic practices and relations – to synthesise them under the umbrella of a theory of cultural evolution – it is not about reducing them to or subsume them under the biological sciences.

The question remains, of course, what the rationale for this proposal is. Why do Mesoudi and colleagues think that the social sciences *should* be synthesised under the umbrella of a theory of cultural evolution? For one thing, their motivation seems to be in line with a tradition in Generalised Darwinism and (a substantially longer one) in philosophy of science that subscribes to the ideal of scientific unification based on general arguments for the advantages

[4] In Mesoudi (2011, pp. 212-216), there is an expanded discussion introducing disciplines that would have to be newly developed, such as ‚cultural evo-devo'.

of theoretical parsimony and the assumption of metaphysical unity (see Aldrich et al., 2008 and Oppenheim & Putnam, 1958; for an overview of the debate in philosophy of science see Cat 2021). But there is also a more specific motivation (cf. Mesoudi et al., 2006, p. 330):

> "Just as evolutionary theory served in the 1930s to synthesize the previously fractured biological sciences within a common and unifying theoretical framework, the interdisciplinary connections highlighted in the previous section [where Mesoudi discusses examples of evolutionary explanations in different social science disciplines, S.L.] suggest that a similar synthesis is possible and may be nearing for the social sciences" (Mesoudi, 2011, p. 210).

This point is derived from a diagnosis of the social sciences as being disconnected from each other and fragmented within – and: a conceivable solution for this issue that is modelled after the "evolutionary synthesis" in biology. As the evolutionary synthesis has provided cohesion and integration for biology[5], it can, according to Mesoudi et al., do the same for the social sciences. It is supposed to bridge different approaches within disciplines and between disciplines in the social sciences that focus either on the microlevel *or* the macrolevel of culture and cultural change (Mesoudi, 2011, pp. 51–53). Through this kind of synthesis, Mesoudi and colleagues believe, there will be much more communication, cohesion and progress in the social sciences than is possible now, as there will be more epistemic integration and a more complex understanding of the different aspects and effects of culture.

Prima facie, this might be considered a plausible rationale for an evolutionary synthesis of the social sciences. However, there remains a curious fact. Consider the current state of sociology, cultural anthropology and political science. All three can indeed by characterised as multiparadigmatic. But this is not so because there have been no attempts to integrate these

[5] This assessment of the role of the evolutionary synthesis in biology is not uncontroversial (Lewens, 2012, p. 463). However, I will take it for granted in this paper.

disciplines. On the contrary, there have been an abundance of “paradigm synthesis approaches” in and between these disciplines, including Parsons (Parsons, 1937; Parsons & Shils, 1951), Giddens (1984), Coleman (1990), Esser (1993), and Mayntz/Scharpf (1995). Not one of them has been successful, at least not in a sustainable way (I will come back to this point below). Why is that? While I do not have a complete theory that can answer this question, I can provide a starting point for an adequate answer. There has not been any successful synthesis of the social sciences, as the reasons for the pluralistic structure of these disciplines have not been thoroughly analysed. Synthesising approaches typically make a number of assumptions concerning said reasons and start from there, despite the fact that these assumptions may not necessarily be very well backed up by empirical evidence (Lohse, 2017a). As I will be showing in the next section, using sociology, cultural anthropology and political science as examples, this holds true for Mesoudi and colleagues too. Their proposal, including its main rationale, to synthesise the social sciences in analogy with the biological sciences is based on several background assumptions concerning the social sciences that cannot be taken for granted but are problematic to varying degrees.

3. Background assumptions and challenges

There are five background assumption of the proposal to synthesise the social sciences that I will discuss in this section (based on Mesoudi et al., 2006 and Mesoudi, 2011, Chapter 1 & 10). I will attempt to show that these assumptions rest, to different degrees, on unstable ground.

Assumption (1) The social sciences are fragmented, which is a main reason for their lack of progress.

This assumption is an important aspect of the rationale to synthesise the social sciences and is expressed in Mesoudi et al.’s dissatisfaction with the epistemic status of the social sciences. The social sciences are characterised as lacking empirical success as compared to the natural

sciences, in particular in terms of precise models and widely accepted explanations of cultural phenomena and cultural change. This is attributed to a large extent to the epistemic fragmentation of the social sciences in different disciplines, subdisciplines and paradigms (Mesoudi, 2011, p. 208).

Assumption (1) faces several difficulties. For one thing, it fails to take adequately into account alternative explanations for the lack of social scientific progress. Let us grant that there is more cohesion and epistemic success in the natural sciences than in the social sciences. They provide us with relatively stable explanatory frameworks as well as more exact descriptions and predictions of phenomena than the social sciences. This does not necessarily mean that it is their cohesion that is the main reason for their success or that it is the fragmentation of the social sciences that is responsible for insufficient progress. Indeed, there are many hypotheses in the literature that attempt to explain the difference in epistemic success. Some think that it is the sheer complexity of social systems that makes it extremely hard for the social sciences to describe or predict them in adequate detail (Scriven, 1994). Maybe the lack of progress can be explained with reference to human agency, which may not be expressible in causal laws (Tanney, 2013). Rosenberg (2012, pp. 14ff) argues that methodological and practical challenges are among the main reasons for the relative lack of epistemic success in the social sciences. For instance, experiments with human subjects are in many cases not feasible for ethical reasons or because they would distort their results through observer-expectancy effects. *Prima facie*, all of these explanations seem plausible. However, without much more detailed analyses of the epistemic status quo in the social sciences, it seems hard to decide which of these are actually on the right track.

There is an additional issue. There are epistemological reasons that make it seem questionable to just *assume* that epistemic fragmentation is a problem for the social sciences. Maybe we should understand the social sciences as a genuinely pluralistic enterprise that investigates and highlights different aspects of a complex cultural and social reality. This could

be an epistemically fruitful approach, as it might avoid a myopic scientific understanding of said reality.[6] Pluralism could also be advisable from a methodological point of view. Triangulating different perspectives and approaches could for example alleviate the shortcomings of each perspective. (for a more detailed account along these lines see Feyerabend, 1978, 1999; Lloyd, 1997; also see Kellert et al., 2006). This could be particularly important in case of the social sciences, as implicit and hard to detect biases and values might be influencing the scientific investigation of human affairs to a greater degree than in the natural sciences.

At this point, Mesoudi and colleagues could object. They do not characterise the social sciences as pluralistic, but as *fragmented*. There is a difference. They point out that there is a lack of integration and communication between different disciplines and between micro and macro approaches within disciplines, which is precisely the issue here. According to Mesoudi this shows in at least two ways. First, there is insufficient accumulation of knowledge in the social sciences. The reason for this is – and I believe this is spot on (Mesoudi, 2011, p. xiii) – a tendency to re-invent the wheel in different, disconnected disciplines (think of the "discovery" of the influence of values and norms in empirically informed economics). Second, Mesoudi diagnoses that there is a lack of methodological and conceptual exchange between disciplines, again being problematic for progress in the social sciences:

> "The traditional social sciences are hindered by the separation of different methods and different subjects into different disciplines: while psychologists conduct laboratory experiments, cultural anthropologists conduct ethnographic fieldwork, archaeologists document prehistory, and economists construct models of market systems" (Mesoudi, 2011, p. 208).

[6] Accordingly, Kneer and Moebius (2010) argue that the multiparadigmatic state of sociology should be seen as a sign of its prosperity and controversy as a key element of its disciplinary constitution.

However, Mesoudi overstates his case here. For one thing, there is conceptual exchange going on in the social sciences as the many papers and books with overviews and comparisons of key concepts and theories suggest (e.g. Groh, 2019; López & Scott, 2000). This is also clear from the existence of overlap in fields of study, say in educational science and sociology of education, and from the existence of hybrid fields such as political sociology. In addition, it is misleading to characterise different social sciences as characterised through a dominant methodology. Experiments and ethnographic methods thrive in sociology, as do economic models in social choice theory and interview studies in economics. Thus, there is definitely conceptual and methodological exchange between the different social sciences. The social sciences are not as fragmented as Mesoudi sees them and that makes assumption (1) seem doubtful. It would be an overstatement, however, to say that there is *no* fragmentation in the social sciences. Mesoudi and colleagues do have a point. There certainty could be more exchange and knowledge integration in the social sciences, less re-inventing the epistemic wheel and less unnecessary fights between disciplines (e.g. economics vs. sociology) and paradigms (e.g. rational choice theory vs. practice theory) and this might indeed be fruitful for progress in the social sciences.

Assumption (2) The fragmented state of the social sciences is mainly due to the unavailability of an integrative theoretical framework, such as evolutionary theory.

With the mentioned caveats in mind, it seems fair so say that the social sciences are indeed fragmented *to some degree*. As already suggested in section 2, one of the main reasons for this state of affairs is, according to Mesoudi et al., the unavailability of an integrative framework, in particular a framework that would be able to bridge different disciplines and micro/macro approaches in the social sciences. The latter aspect is important as the social sciences are seen by Mesoudi and colleagues as particularly deeply divided in micro/macro approaches.

However, this view of the social sciences seems to exaggerate the issue. Although Mesoudi et al.'s assessment may hold true for certain subfields in the social sciences, the micro/macro divide is not anymore the separating line that is used to be 40 years ago. There are now many frameworks in the social sciences that actively promote micro/macro integration. This includes rational choice theory (Coleman, 1990), practice theory (Bourdieu, 1977; Bourdieu & Wacquant, 1992) and certain authors in Analytical Sociology (see Demeulenaere, 2011). But there is an even bigger problem. Let us assume for a moment that there was indeed a scarcity of integrative micro/macro frameworks in the social sciences. Why should we assume that this fact would be the main reason for the fragmented state of the social sciences? There seems to be a lack of evidence to support this assumption.

As a matter of fact, we do not seem to know what the underlying reasons for the multiparadigmatic/fragmented state of social sciences actually is. To be sure, there exist several hypothetical explanations that have been suggested in the literature. Some think that the subject area of the social sciences is too flexible and changes too fast to develop stable explanatory frameworks that capture more than a fragment of cultural reality (see the discussion in McIntyre, 1993). Others have highlighted the complexity of the social world as a key factor (see above). Maybe the social sciences can never hope to have more than partial explanatory frameworks for some aspects of socio-cultural reality. Thomas Kuhn (2000[1991]) has suggested yet another possibility. He draws attention to the hermeneutical nature of the social sciences as a reason for their multiparadigmatic state. According to Kuhn, the social sciences constantly redescribe and reinterpret social reality which makes it hard to enter a state of normal science. There are many more hypotheses of why the social sciences are fragmented (to some extent), including sociological hypotheses hinting at the strong tendency for building schools as distinguishing brands (Schimank, 2012). But this is all these are: hypothesis of *possible* explanations for the status quo. At present, we do not have a corroborated explanation of the multiparadigmatic state of the social sciences but only a

number of competing explanatory hypothesis.[7] An important consequence of this is that it is unclear what obstacles an integrative approach has to contend with and to what extent a unifying framework in terms of evolutionary theory (or otherwise) is even possible at present.

Assumption (3) All of the social sciences investigate the same "cultural stuff".

This assumption is the ontological core of the synthesising project. Since all of the social sciences investigate different aspects of culture at different levels and in different ways, they can be integrated through a theory of cultural evolution. So what is 'culture'? Mesoudi and colleagues provide us with a broad characterisation of culture that is based on earlier work in cultural evolution theory and meant to be all-encompassing:

"Following Richerson and Boyd (2005), we define culture as 'information capable of affecting individuals' behaviour that they acquire from other members of their species through teaching, imitation, and other forms of social transmission' (p. 5). 'Information' is employed as a broad term incorporating ideas, knowledge, beliefs, values, skills, and attitudes" (Mesoudi et al., 2006, p. 331).

While the paradigm case of culture seems to be "information in the head", the concept is broader. In his book on cultural evolution, Mesoudi elaborates:

"Whereas genetic information is stored in sequences of DNA base pairs, culturally transmitted information is stored in the brain […] as well as in extrasomatic codes such as written language, binary computer code, and musical notation. And whereas genetic information is expressed as proteins and ultimately physical structures such as limbs and eyes, culturally acquired

[7] A main reason for this epistemic gap is that there is, to my knowledge, no research programme in history and philosophy of science that investigates this question.

information is expressed in the form of behavior, speech, artefacts, and institutions“ (Mesoudi, 2011, 3).

This conceptualisation of culture may raise some eyebrows. How apt is the analogy of culture and genetic information? Can skills such as riding a bike really be considered as information encoded (solely?) in neural patterns? Do patterns of behaviour, artefacts and institutions *encode* or *express* cultural information? Both?

These conceptual questions point to legitimate concerns. However, I want to focus on another issue, namely whether social scientists are really talking about the same thing, when they talk about ‘culture’. This does not seem to be the case. Rather, there are a vast number of ideas in the social sciences concerning the right way to characterise what culture actually means (Sewell, 2005, Chapter 5). Smith (2016) lists many different definitions that have been offered in the social sciences, characterising culture as *inter alia* ideas, values, beliefs, meaning, symbolic codes, mental representations, discourses, semiotic systems, artefacts, actions, social processes, practices and various combinations thereof. Smith highlights that ‘culture’ is an extremely contested concept which is characterised as vague and even incoherent. Note that this is not just a quibble. Different characterisations of culture are not merely highlighting different aspects that could easily be reconciled using the definition of culture as mentally realised information and expressions of this information in behaviour and artefacts. Rather, they point to different and partially incommensurable social ontologies of culture that exist in different social scientific schools. While some social scientists see culture as a mental phenomenon, others think of it as a structure “out there”, as an implicit systems of rules for behaviour or a network of meaning (see the landmark discussion in Geertz, 1973). These ideas cannot easily be reconciled with each other. They have been the subject of long lasting debates in the social sciences that can also be observed regarding other basic concepts, e.g. ‘institutions’ and ‘organisations’. Moreover, these different conceptions of culture are interwoven with the core ontological assumptions of different paradigms about the nature of

socio-cultural reality and specific explanatory preferences (e.g. a preference for reductionist explanations in individualism). An implication of this is that these conceptions of culture cannot be integrated without considering their theoretical embeddedness.

A synthesising approach like Mesoudi et al.'s would have to engage productively with the fact that there are currently many different explanatory frameworks with many different conceptions concerning the basic entities and processes in socio-cultural reality. The alternative would mean either to be only able to integrate those approaches that are already aligned with a more or less particularistic picture of culture and microfoundational approaches, such as methodological individualism (see Lewens, 2012, 2015, p.139) – this is the best case scenario, or to merely establish another paradigm with its own core ideas regarding what culture is *next* to the already existing, well-established ones.

Assumption (4) Social scientists (except economists and psychologists) reject simplifying quantification and mathematical modelling without good reasons.

Although this is not a motivating assumption for Mesoudi and colleagues, it is important for making their case. Assumption (4) points to what they see as a major but ultimately irrational obstacle for evolutionary approaches to cultural reality; an obstacle that needs to be overcome by the social sciences to become "truly" scientific (Mesoudi et al., 2006, p. 337). As stated above, Mesoudi et al. believe that quantification and mathematical evolutionary modelling – which presuppose idealisation, in particular in form of simplifications that allow formal descriptions of complex phenomena – are key elements that an evolutionary approach can bring to the table. It is this methodological gold standard that they want to make accessible for the social sciences through an evolutionary synthesis. The main reason Mesoudi provides for this aim is that quantification and mathematical modelling enable more precise descriptions of cultural phenomena and processes. In addition, they allow for formal testing of hypotheses against real world data, thereby surpassing the possibilities of "verbal arguments back and

forth between scholars, each of whom believes their pet theory to be better, with no real way to determine who is correct" (Mesoudi, 2011, p. 206). In this sense, quantification and simplifying mathematical modelling of cultural phenomena and processes are regarded as more rigorous and *ipso facto* more scientific than non-quantitative approaches (cf. Mesoudi et al., 2006, pp. 329f; Mesoudi, 2011, p. 205).

It is true that social scientists sometimes reject quantification and mathematical modelling for the wrong reasons. They may criticise formal approaches in very general terms as a simplistic reduction of culture that does not do justice to its complexity, without acknowledging the advantages that idealisation, i.e. simplifying reduction of complexity, can have for promoting our understanding of the world (see Potochnik, 2017).[8] There are, however, two problems with assumption (4).

The first problem is that it is an extreme overgeneralisation. Many parts of the social sciences, including sociology, cultural anthropology and political science, are decidedly quantitative and use idealising mathematical modelling. This includes agent-based modelling, often in cooperation with scientists from other fields, to explore such different things as voting behaviour (Fowler & Smirnov, 2005) and racial disparities in incarceration rates (Lum et al., 2014) as well as the use of mathematical game theory models to better understand territorial conflicts in international relations (Carter, 2010). In fact, much research in leading journals in sociology and political science relies on quantitative approaches using sophisticated statistical regression methods, computer simulations and other quantitative tools (an abundance of examples can be found in *The American Journal of Political Science, The European Journal of Sociology* and in many other top journals in the respective fields). Cultural anthropologists, while often relying on ethnographic observations, also regularly use – and have for a long time – quantified methods (see the widely used textbook *Research Methods in Anthropology:*

[8] The same goes for the sometimes sweeping criticisms of evolutionary approaches to socio-cultural phenomena as necessarily biologistic and wrong-headed.

Qualitative and Quantitative Approaches, Bernard, 2017). Furthermore, there exist associations for computational social sciences as well as journals such as the *Journal of Artificial Societies and Social Simulation* and *The Journal for Mathematical Sociology* (since 1971!). In light of this, it is misleading to say that most social sciences reject simplification, quantification and mathematical modelling.

The second problem for assumption (4) is that quantitative approaches in the social sciences are in many cases rejected with *good* reasons. Many social scientists and philosophers of science (including myself) believe that the social sciences are - and indeed need to be - an interpretive enterprise to a significant part. This does not mean that quantification and mathematical models are useless or that qualitative research projects cannot benefit from quantitative approaches (as the methodological trend of mixed methods research designs shows, see Creswell & Plano Clark, 2011). Rather, the idea of the social sciences as an interpretative enterprise means that there is a significant part of it that has to rely on hermeneutics (see the above remarks on Kuhn), i.e. understanding and sense-making of socio-cultural reality. This is no deficit of the social sciences and it does not make these parts of the social science any less scientific. It merely reflects the meaning dimension of socio-cultural reality and the centre stage that the concept of intentional agency understood as an interpretable phenomenon takes in the social sciences. In fact, much research in the social sciences is about understanding the meaning of social practices (e.g. in ethnographic research), discovering layers of sometimes latent meanings behind certain acts (e.g. qualitative research in the Mannheimian tradition), and the critical reconstruction of ideological assumptions underlying cultural institutions (e.g. in feminist political theory). There seems to be no good reason for assuming that research programmes along these lines can be *replaced* with formal models or need to be overcome completely through quantitative approaches. On the contrary, there is a long tradition emphasising that the social sciences, understood as an partially interpretative enterprise, can in an important sense provide a deeper explanation of their subject matter than the natural sciences. Max Weber offers what remains one of the best

justifications for this claim. He demonstrates that an explanation in the social sciences can go beyond the determination of causal mechanisms or the mere description of regularities. For this purpose, intentional actions and social practices that underlie socio-cultural phenomena must be placed in a context of meaning – i.e. in a context of other meaningful actions, practices and intentions – and thus made truly intelligible for us (Weber, 1978[1921/22], Chapter 1). This is analogous to texts that we interpret and understand with reference to other texts, and often also the assumed intentions of the author (Taylor, 1971).

Any approach that aims at synthesising the social sciences will need to integrate this hermeneutic tradition and show how it can be fruitfully combined with quantitative approaches. Arguing for the inferiority of qualitative research, as Mesoudi and colleagues do risks downplaying the richness of human agency and contributing to the long lasting and paralysing qualitative/quantitative controversies in the social sciences. To put in another way, it is not true that a discipline can only be "fully scientific" if it is quantitative and makes testable predictions (Mesoudi, 2011, pp. 18ff, 205) – rather, this assumption implies an untenable scientific monism. If recent developments in philosophy of science have shown anything, it is this. There is not *the* scientific approach, but many different approaches in the sciences, and this includes hermeneutics as a systematic and more rigorous form of everyday interpretation of the socio-cultural world around us (Hoyningen-Huene, 2013, pp. 71–77).

As a side note, it does not help Mesoudi et al.'s case to label non quantitative approaches anti-naturalistic or lax and throw them out with the post-modern bathwater (see Mesoudi 2011, p. 19f for a misleading characterisation of the hermeneutical approach in anthropology; see also Mesoudi et al., 2010). Hermeneutical approaches in the social sciences are in most cases not anti-science or postmodernist, but adhere to their own methodological standards and rules – traceability, reflexivity, coherence of interpretation etc. – as even a brief look at the methodological literature in qualitative social research clearly shows. Quantification is not the only way to being rigorous.

Assumption (5) The social sciences share an epistemic core goal: explaining cultural change and the effects of culture on human behaviour.

This is an essential background conviction of Mesoudi and colleagues. Without this assumption, it would not make sense to propose a theory of cultural evolution as epistemic core of the social sciences. A theory of cultural evolution is assumed to be able to integrate the social sciences precisely because it can organise them in alignment with a shared epistemic goal, namely explaining cultural change and the effects of culture on human behaviour.

The problem with assumption (5) is that it neglects the great diversity of epistemic goals of the social sciences and the question of what added value evolutionary theory and modelling have for achieving these goals.[9] According to Mesoudi and colleagues, evolutionary approaches to culture are much better than traditional social scientific methods, as they allow for more precise modelling of socio-cultural phenomena and processes. They substantiate their argument with many impressive examples for this claim. The question remains, of course, whether this means that evolutionary approaches are preferable *tout court.* I have already expressed some concerns about this above, but more can be said when considering the assumed added value of evolutionary approaches in light of different epistemic goals in the social sciences.

The added value of evolutionary approaches does not exist in a vacuum. It rather needs to be determined in light of the epistemic goals pursued in each given case. There are, of course, several epistemic projects pursued by social scientists that are well aligned with Mesoudi's and colleagues' interest to describe transmission, change and diffusion of cultural phenomena and explain the difference that culture makes for human behaviour. Many social scientists are interested in related issues. Accordingly, evolutionary models of culture can be helpful for

[9] This part of the article draws on work on explanatory pluralism by van Bouwel & Weber (2008a, 2008b).

understanding general social mechanisms for observational learning (e.g. based on prestige bias) and they can enrich individualist explanations of patterns of political change (e.g. through transmission chain experiments). However, these and similar cases are by far not the only epistemic games in town. There are many more projects in the social sciences. These range from the description of side-effects of policy and the latent properties of political systems to ethnographic explorations of social spaces and the deconstruction of social categories such as race or gender (see also the above discussion of hermeneutical projects). Consider these examples, chosen from leading social science journals:

- In "Intended and Unintended Effects of the War on Poverty: What Research Tells Us and Implications for Policy", the authors review and evaluate the evidence on causal effects and side effects of policy programmes in the US to reduce poverty (Bitler & Karoly, 2015). One of their primary epistemic goals is to discover and better understand – often unintended and latent – side effects of policy measures, e.g. on employment rates, in order to inform and improve policy-making.
- In two highly cited papers in *American Political Science Review* and *Journal of Conflict Resolution*, Maoz and his co-authors deploy a comparative research design to explore the question what regime attributes might be related to the likelihood of entering into a war with another country (e.g. are democracies less likely to enter a war with each other?) (Maoz & Abdolali, 1989; Maoz & Russett, 1993).
- In a paper in *American Sociological Review*, Smith (2014) reports the results of a long-term ethnographic study that aims to explore how ethnic identity changes through the life course of individuals and in what ways these changes need to be situated in historical and institutional context.
- In "Gender and the Career Choice Process: The Role of Biased Self-Assessments", Correl (2001) reports the results of a quantitative study investigating the exact role that negative self-ascription of mathematical abilities by women plays in their career paths, at the same time

helping to further debunk the view that biological differences are determining mathematical abilities in men and women.

The issue for Mesoudi et al.'s proposal that come into view through these examples is this: These are no cherry-picked cases or exceptional research projects.[10] Rather they are sophisticated and successful examples of *typical* research projects in the social sciences that are no more and no less in the epistemic centre of the social sciences than explaining culture and cultural evolution. (I do not think that we have any grounds to think that there *is* a central epistemic goal of the social sciences.) At the same time, it is not clear to what extent these projects and many other projects in the social sciences would benefit from a theory of cultural evolution or evolutionary modelling. Mesoudi and colleagues provide no reasons to think otherwise. In fact, it would be necessary to show to what extent evolutionary thinking could be useful for projects with these or similar epistemic goals, e.g. by showing that certain claims or explanations are wrong. This is not denying that an evolutionary approach can be an extremely useful tool – but it is but one tool next to others and no better tool for any purpose (cf. Lewens, 2015, p. 146). The adequacy of a theory, model or method depends on the given epistemic goal to be pursued, which may or may not be aligned with what evolutionary approaches can offer.[11] And even in cases where epistemic goal and evolutionary tool are well aligned, evolutionary approaches may not provide the best *available* explanations, at least not without embedding these within the rich explanatory resources of sociology, cultural anthropology etc. This is precisely what has been at the centre of much criticism of evolutionary explanations of socio-cultural phenomena that highlight observational learning and transmission chains, while neglecting the role of the institutional environment as key explanatory factor. Against this

[10] In fact, there might be a sampling bias in Mesoudi et al.'s examples. In discussing the benefits of a theory of cultural evolution for the social sciences, they tend to discuss examples from anthropology, psychology, behavioural economics and other subfields that are already aligned with their focus on cultural change, transmission and explaining general patterns of human behaviour.

[11] Sober (1992) makes a related point by arguing that social scientists are more interested in the sources of transmission systems than in their empirical consequences, which is why evolutionary models may not be very useful in many cases. This also points to different epistemic goals in the social sciences.

backdrop, it seems unclear why cultural evolution theory and evolutionary modelling should be at the epistemic centre of a synthetic framework for the social sciences.

4. Conclusion

Let us take stock. I have shown that assumption (1) does not adequately account for alternative explanations for the (relative) lack of social scientific progress and the (potential) benefits of having a plurality of perspectives in the social sciences. This seems to mitigate the strength of the assumption. A major problem for assumption (2) is a lack of evidence to back it up, pointing to a more general problem: At present, we do not seem to have a corroborated theory that can explain the multiparadigmatic state of the social sciences. Assumption (3) underestimates the extent to which different and partially incommensurable social ontologies of culture exist in the social sciences – this is a tough challenge for every synthetic approach to the social sciences. Assumption (4) addresses a potential (if exaggerated) barrier for Mesoudi et al.'s synthetic approach but neglects the hermeneutical dimension of many research projects in the social sciences as a good reason for resisting (too much) quantification. Assumption (5) underestimates the wide variety of epistemic goals of social scientists. This leads to (a) overstating the case for the potential of a theory of cultural evolution to serve as the epistemic core of the social sciences and (b) overstating the usefulness of evolutionary models for the social sciences.

What is the upshot of this for Mesoudi et al.'s synthesising approach to the social sciences? While some of the identified issues might be mitigated by modifying and expanding the proposed framework, others, namely issues connected to ontological incommensurability, hermeneutics and goal pluralism, will prove to be extremely thorny. These touch on the foundations of the social sciences and will be difficult (if not impossible) to overcome with the proposed approach.

The concurrence of the discussed problems seriously undermines the prospects of success for Mesoudi et al.'s project – and I believe for similar projects as well. It is the extensive and deep-cutting pluralism in the social sciences, including their ontology, methodology and epistemic goals, that presents synthesising projects with major obstacles. Even if we think that there *should* be more integration and less pluralism in the social sciences (and this is by no means uncontroversial, see above), it seems unlikely that we actually *can* synthesise the social sciences, at least not in the foreseeable future.

After this rather pessimistic assessment, let me conclude with two constructive notes. The first note aims at scientists and philosophers that are interested in promoting "the integrative project". To make progress they would need to invest more time in understanding the challenges for a synthetic approach to the social sciences. This means paying much more attention to actual research practices in the social sciences in order to gain a proper understanding of their pluralistic state and to find out what it would take for a synthetic project to succeed: *Bottom-up instead of top-down transformation*. This may, of course (pessimist again), lead to the conclusion that integration will remain impossible, e.g. due to irresolvable ontological or methodological incompatibilities. But it could also lead to ways to alleviate some of the identified problems, e.g. by showing that there is more ontological compatibility in the social sciences than one would think (Lohse, 2017b, 2019).

The second note addresses the acceptance of evolutionary approaches in the social sciences. It is important for proponents of evolutionary approaches to make the case for their usefulness in a way that is recognised by social scientists. Advocates of evolutionary approaches need to show why their approach is better in light of the epistemic goals of sociologists, political scientists etc. In other words, it is not helpful to shift the burden of proof like this if one wants to gain acceptance in mainstream social science:

> "We maintain that critics [of evolutionary approaches] must empirically demonstrate that the existence of intent does in fact invalidate an evolutionary account of human culture […]" (Mesoudi et al., 2006, p. 345).

It is the other way around. It has to be demonstrated how evolutionary theory and modelling can help answering questions that are of interest in the social sciences. *Nota bene*, Mesoudi and colleagues frequently, though not always, pursue this avenue. But in many cases, especially in the context of Generalised Darwinism, there is a top-down perspective that places unification and generalisability above all other epistemic goals, values (such as explanatory depth) and aspects of social scientific practise (see Chellappoo, 2021 for a more detailed analysis of this point). Approaches of this kind will continue to be seen – and rightly so – as an attempt at scientific imperialism.

Acknowledgements

[…]

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