Pragmatist Methodological Relationalism in Sociological Understanding of Evolving Human Culture

Osmo Kivinen & Tero Piiroinen

Relationalist theories have become a popular topic in the social sciences over the past 20 years (e.g., Bourdieu & Wacquant 1992; Archer 1995; Emirbayer 1997; Fuchs 2001; Tilly 2001; Kivinen & Piiroinen 2006; Dépelteau & Powell ed. 2013). Obviously, there are considerable differences between relationalist approaches. A fundamental difference can be articulated in terms of two opposing attitudes that an inquirer could take toward the relationship between philosophical metaphysics – that is, 'questions about reality that are beyond or behind those capable of being tackled by the methods of science' (see *Oxford Dictionary of Philosophy* 1996, 240; also

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Cambridge Dictionary of Philosophy 1999, 563) – on the one hand, and social scientific research practice on the other. The two attitudes we have dubbed 'philosophizing sociology' and 'sociologizing philosophy' (Kivinen & Piiroinen 2006). The difference between them is that, those with an attitude of philosophizing sociology – like, for instance, John Searle (1995, 2010) – think that social inquiries must be based on some prior ontological commitments explicable in terms of philosophical metaphysics; whereas those of us with an attitude of sociologizing philosophy draw on the fact that inquiry in science and in philosophy too is social action and thus understandable in the light of sociological analyses, without any metaphysics.

There are also relationalists who subscribe to the realist doctrine that science needs to 'rest on plausible ontologies' (Tilly 1995, 1594). This kind of relationalists offer relational ontologies where relations are at least as real as other things, and many of them seem to believe in the representationalist dogma that relationalist theories are superior to other theories because they represent reality more accurately than others (e.g., Somers 1998, 743–5 and note 16). These realist relationalists claim to offer the correct kind of answers to the presumably ontological questions of just what it really is that sociologists study. François Dépelteau (2008, 2015), for instance, has recently developed an interesting position along such lines. He argues for a relational (and thereby processual, fluid and dynamic) ontology that would differ from most other ontologies – for example, critical realist ones (e.g., Bhaskar 1979; Archer 1995; see also Hodgson 2004) – by virtue of its non-stratified conception of the social universe as 'flat' (as opposed to consisting of levels or layers). Dépelteau (2015) calls this distinctive position of his 'Deep Relational Sociology'.

We have ourselves also written about the barrenness of stratified ontologies for quite some time now (e.g., Kivinen & Piiroinen 2004), and in this respect agree with Dépelteau. However, our opposition to stratified ontologies is not based on any competing ontology, flat or otherwise. Rather,

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our longstanding conviction has been that vertical metaphors offer only useless if not downright counterproductive methodological guidelines for knowledge-acquisition, and are to be replaced with horizontal ones, already because the very logic of language dictates that knowledge grows only through finding new connections, building new combinations from symbolic presentations and linguistic descriptions – by no means through revealing deeper and deeper truths (Kivinen & Piiroinen 2004, 2006, 2007). Which brings us to the second distinctive feature of Dépelteau's relationalism – its supposedly 'deep' relational character; we cannot but ask: in what useful sense could relationalism be deep, especially given the fact that the ontology of the social universe that Dépelteau proposes is said to be flat? Perhaps it is just an unfortunate terminological choice and could be dropped along with ontological unnecessities? In any case, the contrast to our methodological relationalism is stark: as pragmatists, we think that it is quite sufficient for a relationalist to try and provide a set of instrumentally useful conceptual tools for describing social action and operationalizing its pressing problems into specific research questions answerable through research actions. And for this, we need no metaphysical language game or ontology. (Kivinen & Piiroinen 2004, 2006, 2007, 2013.)

The present paper argues for this view, re-examining some old and introducing a few new insights into methodological relationalism, sharpening some of its central notions and concepts. In particular, we wish to highlight the Darwinian backdrop of John Dewey's (1859–1952) transactional pragmatism and methodological relationalism. We will argue that Dewey's interpretation of Darwinian thinking resonates with some promising recent theories and research on human evolutionary history and can offer fruitful methodological guidance for relationalist research into today's social life and human consciousness.

Dewey's Evolutionary Philosophy Anticipating Niche Constructionism

Having been almost forgotten in the middle of the twentieth century, over the past couple of decades Deweyan ideas have come back, also in social theory; Dewey's legacy lives strong again. The pragmatist notion of 'habit', in particular, which Dewey (esp. [1922] MW 14) elaborated, has been found useful by a number of otherwise rather different thinkers (see, e.g., Joas 1996; Kilpinen 2000; Hodgson 2004; Kivinen & Piiroinen 2004, 2007; Joas & Kilpinen 2006; Fleetwood 2008; also Lahire 2011, 72–4; Bourdieu & Wacquant 1992, 122–3 and note 77); and lately also his 'transactionalist' view of individual–society relations, or more fundamentally of the mind–world or subject–object relationship (see Dewey MW 14, LW 1, LW 12, LW 16), has inspired many relationalists (e.g., Emirbayer 1997; Kivinen & Piiroinen 2006, 2013; Dépelteau 2008; Piiroinen 2014; see also Dépelteau & Powell ed. 2013).

An interesting development in social theory recently has been that evolution theoretical ideas are beginning to be taken seriously again (see, e.g., Hodgson 2004, 2013; Machalek & Martin 2004; Hodgson & Knudsen 2010; Bowles & Gintis 2011; Kivinen & Piiroinen 2012, 2013; Meloni 2013). Perhaps social scientists are finally getting over the traumatic past of evolutionary social theory – the shadows cast by Spencerian 'Social Darwinism', the eugenics-motivating doctrines of the survival of the fittest people and societies (Rose 2013) – and have found plausible alternatives to the biological determinism of Wilson's (1975) 'sociobiology' and to the narrowest mind-first versions of 'evolutionary psychology' (e.g., Tooby & Cosmides 1992).

While both Deweyan relationalism and evolutionary theory have been in the rise in social theory, the two are rarely presented as interconnected matters; there has actually been very little discussion about the connections between the two. Yet Dewey was arguably an evolutionary philosopher

through and through: his transactionalist views of mind, knowledge, growth, learning by doing, inquiry and science, as well as of community and social life, culture and democracy, all make sense in Darwinian context; it is all too easy to misunderstand Dewey's philosophy if one does not appreciate its specifically Darwinian backdrop – and quite a few people, even benevolent interpreters, have not (Popp 2007, 81 ff.). All classical American pragmatists were impressed by Darwinian ideas, advanced evolution-theoretical philosophies of mind, inquiry and knowledge (e.g., Goudge 1973; Menand 2001; Brandom 2004; see also Hodgson 2004); and Dewey became the primus inter pares in this respect, as he was the one to publish most extensively and to apply his Darwinian pragmatism systematically to a variety of topics of human interest. There are indeed good reasons to call Dewey the 'evolution's first philosopher' (Popp 2007). In this paper, we argue for Deweyan methodological relationalism of social sciences that rests on a Darwinian base.

Now Dewey's conception of evolution, correctly understood, is crucially different from how evolutionary theory was mainly conceived from around the middle of the 20th century until early this century – the orthodoxy that has been revolving around the notion of gene, as perhaps best epitomized by Richard Dawkins' book *The Selfish Gene* [1976] (2006). This is important in social sciences because most attempts in social theory or in the human sciences to give the center stage to genes have been prone to over-stress the biological, innate human nature – native brain-mind modules and other psychological hardwiring that allegedly stem from genetic selection in the Pleistocene era (e.g., Tooby & Cosmides 1992; Pinker 2002). These explanations have been found unsatisfactory, and not just in the social sciences but even as accounts of human nature and consciousness – apt criticisms of such overly genetic, nativity-emphasizing, 'inside–out' theories have been presented by Buller (2005), Deacon (1997), Donald (2001), and Sterelny (2012a), for instance (also Kivinen & Piiroinen 2007, 2012).[1] In any case, genetics-based, inside–out explanations of humanity and social life are unsatisfactory with respect to relationalist approaches

to social scientific research, because more emphasis on genes and individuals' supposedly innate brain/mind modules means less attention to individual–environment relations and almost no attention at all to social and cultural relations. So insofar as we social scientists want to find noteworthy lessons from theories and research on evolution, those must be something other than primarily innate, genetic affairs.

Deweyan philosophy does provide such an alternative account of evolution. His transactional and relational thinking anticipated what would later become known as 'co-evolutionary' or 'niche-constructionist' interpretations of evolution (see Kivinen & Piiroinen 2012, 2013). Dewey's (MW 9) naturalism starts with the notion that every living organism and every species (or, population) must cope with its environment, because when it cannot cope with it anymore it perishes – 'loses its identity as a living thing.' Any given organism will die sooner or later, and whole species go extinct every now and then, but as long as life on this planet goes on, there will be new 'forms better adapted to utilize the obstacles against which … [the ones who perished] struggled in vain …' (pp. 4–5.) So organic life is most crucially activity adapted to its environment (Dewey MW 12: 128). It 'is a process of activity that involves an environment', Dewey (LW 12: 32) stressed: 'a transaction extending beyond the spatial limits of the organism.' And he would also point out an often overlooked implication of this: that, on the one hand, the very active nature of adaptions entails that all organisms must transform, change (even if only slightly) some of the elements of their environment; and that, on the other hand, precisely because activity is an adaptation to the environment, any changes in the environment will tend to call for changes in the future activity, and accordingly in the organism itself (Dewey MW 12: 128–9).

> The organism acts in accordance with its own structure, simple or complex, upon its
> surroundings. As a consequence the changes produced in the environment react upon

the organism and its activities. The living creature undergoes, suffers, the

consequences of its own behavior. (Dewey MW 12: 129.)

Now, this is very close to what much later became known as niche-constructionist view of

evolution: the idea that all organisms are in constant transactions with their environment, changing

the environment so that it will then affect the organisms differently, creating perhaps new kinds of

evolutionary selection pressures towards them (see Odling-Smee, Laland & Feldman 2003). Niche-

constructionist views have only started to become properly appreciated in mainline evolutionary

theory over the past couple of decades, although it had been anticipated by a few early theorists like

James Mark Baldwin already in Dewey's days,[2] theorists who emphasized the role of learning in

evolution – how learned forms of behavior may alter the selection environment of a population in

such ways that it affects the genetic evolution of that population (e.g., Baldwin 1896; Morgan

1896). (Later, this sort of developments became known as the 'Baldwin effect' – with some

injustice to those others who came up with roughly the same idea around the same time if not earlier

than Baldwin, theorists like Conwy Lloyd Morgan.) But it was not until in the late-1980s that the

Baldwin effect finally started to become broadly accepted as a (still rather controversial) part of the

mainline modern synthesis of evolutionary theory. (See Weber & Depew ed. 2003; also Richards

1987, 480–93; Dennett 1995, 77–80.)

The Baldwin effect has been easier to accept in the fields of human sciences, let us remark; the idea

of ecological, particularly socio-cultural niches, and how they affect human evolution in (gene–

culture) 'co-evolutionary' cycles, has become a commonplace in these fields (e.g., Durham 1991;

Dennett 1995; Deacon 1997; Odling-Smee, Laland & Feldman 2003; Richerson & Boyd 2005;

Bickerton 2009; Pagel 2012; Sterelny 2012a). That human scientists should appreciate the idea is

certainly understandable: as a distinctly cultural affair, the niches that humans construct have

clearly changed their selection environment and thoroughly affected human consciousness. Dewey already underlined that the construction and transformation of the environment, the niche or the 'medium', is a particularly noteworthy and consequential phenomenon especially in the human case: 'The higher' (that is to say, the more neurologically complex and phenotypically flexible) 'the form of life', he stated, 'the more important is the active reconstruction of the medium' (Dewey MW 12: 128); and, thus, '[o]f human organisms it is especially true that activities carried on for satisfying needs so change the environment that new needs arise which demand still further change in the activities of the organism by which they are satisfied; and so on in potentially endless chain' (Dewey [1938] LW 12: 35). For Dewey (e.g., MW 14, LW 2: 235–372, LW 12: Ch. 3), there never was any doubt that humans are social beings whose habits and thus minds are formed in social life and in a cultural context of language and customs, in some given communities and in the framework of institutions.

Meanwhile, human communities exist only due to social action, division of labor, cooperation and communications (of the community's habits of action and thought, its beliefs and norms of social life). If the community fails to initiate enough of its new members into its customs, its characteristic way of life, it will cease to exist (at least, as the kind of community that it was). Thus defined, it is a trivial fact that communities can also outlive their individual members; but to keep themselves going (in a sense: 'alive'), they need to arrange sufficient re-creation of their beliefs and knowledge, hopes and expectations, ideals and practices; which in modern times has been achieved by means of educating new members to appreciate the community's beliefs, ideas and conventions. (Dewey MW 9: 5–7; see also MW 14: 43–5.) The transferring of habits and customs is never perfect, of course, and there are also innovations from time to time – even quite revolutionizing technological inventions, for instance, tested in their local environment – and thus it makes sense that the

lifeways, ecological, socio-cultural niches, and therefore also the human consciousness, all evolve incrementally, in co-evolutionary transactional cycles.

This all needs to be understood relationally. Indeed, as we have said before: niche-constructionist theories of evolution are necessarily relationalist, if only because they conceive organisms in relation to certain aspects of their environment and some of the more relevant parts of the environment in relation to those organisms; and it is also hard to imagine a relationalist social theorist who would not be at least tacitly appreciative of the notion of niche construction (Kivinen & Piiroinen 2013, 88–90).[3] Relationalism works well in tandem with niche-constructionist analyses of human cultural evolution.

Relational Standpoints on Human Evolution in Socio-cultural Niches

Kim Sterelny's *The Evolved Apprentice* (2012a) is one example of recent niche-constructionist and, by the same token, relationalist analyses of human evolution, concentrating specifically on the evolution of human 'behavioral modernity' (the cluster of behaviors shared by all modern humans and distinguishing them from other known species, including other hominins and even early *Homo sapiens* that was physically indistinguishable from modern humans) during the Pleistocene era. Sterelny opposes all genetic-nativist explanations, conceives behavioral modernity as an incrementally evolved, social and cultural affair, most crucially explained by peculiarly apprentice-like mechanisms of social and cultural learning, which depend on the collective's capacity to engineer appropriate kinds of learning environments for the young to learn from the more experienced members of the group.[4] This is emphatically a 'collective achievement and a collective legacy' whereby 'we stand on the shoulders not of a few giants but of myriad of ordinary agents

who have made and passed on intact the informational resources on which human lives depend.' It is very much a matter of niche construction, of course, of earlier generations having constructed a cognitive niche for the later ones, a niche nested in a broader ecological and socio-cultural niche, a community's way of life. (Sterelny 2012a, xi–xiv.)

Another notable theorist of the evolution of human mind, Merlin Donald would in a similarly relationalist and niche-constructionist vein emphasize the kinds of communications that were involved in the early hominin and human cultures, because it was communication that underpinned the human capacity to share knowledge with others in cultural networks and thereby accelerated also the pace of biological evolution in our species (in particular the remarkably fast growth of hominin brains that made it more and more a cultural organ) (Donald 2001, 259–60; see also Deacon 1997; Bickerton 1999). Donald distinguishes as particularly important phases the emergence of first 'mimetic' cultures of physical signs and mimes (this happened already in earlier hominins, ca. two million years ago); the transition into the 'mythic' culture of relatively fluent oral language (beginning around 500,000 years ago perhaps), and finally the transition into 'theoretic' culture along with writing as a method for externalizing symbol systems and thus knowledge. Each phase would give rise to new kinds of cognition and consciousness. (Donald 2001, 259 ff.)

One thing that Sterelny (2012a) and Donald (2001) (and some of the most interesting theorists of language evolution, like Terrence Deacon (1997) and Derek Bickerton (1999)) have in common is the understanding that the evolution of human consciousness is to be explained more 'outside in' than 'inside-out': that the engines of this evolution are to be found in the social organization and cultural developments that played a crucial part in the ecological niches where also the hominin brains and other physical characteristics incrementally evolved the way that they did.

A good example of this is the construction of the ecological niche that enabled the emergence of written language and thus what Donald dubs theoretic culture and theoretic parts of human consciousness. The most essential causal chains explaining these developments go back to the invention of agriculture and to the pervasive social, cultural and technological changes it brought about (in certain, favorable conditions – of course, not all agricultural communities ever invented writing).

Incidentally, one thing that agricultural revolution can help us highlight is this basic lesson of evolutionary, as opposed to teleological, thinking: that evolutionary developments are only locally and temporarily adaptive, not universally progressive. Evolution may occasionally produce progress to increasing complexity, for instance, but that is not a universally beneficial development: if the local conditions change, it may sometimes be better to be simple. A small group of hunter-gatherers will fare better than a post-industrial knowledge society if some disaster brings down the electrical grid and all the ICT networks; and relatively simple cockroaches would be much more likely than the human kind to survive an all-out nuclear war on this planet. Evolution is a matter of populations of organisms changing incrementally as they develop new ways to cope with the selection pressures of their environment. Populations and species change in this process, and their evolving ways of coping also transform the environment, thereby creating new kinds of needs and threats, problems and goals, new coping challenges, as Dewey (e.g., MW 12: 128–9, LW 12: 35) already observed. There is no guarantee that this increases happiness or reduces suffering, and no reason to believe that it leads to in every way better or universally fitter forms of life. Some of our cultural-evolutionary developments may of course produce some things that seem pretty universal improvements, because we humans plan for tomorrow and invent stuff to intentionally improve our condition, but even these tend to bring about unforeseen negative consequences. This is indeed nicely demonstrated by the shift to agriculture: archaeological and paleoanthropological evidence

shows that early farmers lived on average shorter and more infirm, sickly lives than most hunter-gatherers, suffering more from illnesses, from malnutrition caused by their less varied diets, and from harder work ill-suited for the body adapted to hunter-gathering lifestyle over a couple million years (see the popular historians Diamond (1987) and Harari (2015, Ch. 5) on this (and, e.g., Pagel 2012, 23–4)).[5]

It is natural for people to think of the transition from hunter-gatherer lifeways to agriculture as an positive thing – a 'victory over nature' – that paved way for urbanization and organized society, literacy and cumulating knowledge, growing economic surplus and civilization, high culture and philosophy. It did give rise to all that; but there are also standpoints from which it seems like a trap to which *Homo sapiens* fell! And it is instructive to see why it would have been well-nigh impossible for farming communities to get out of that trap, to withdraw from the agricultural niche and go back to hunter-gathering. For one thing, domesticated plants soon became a necessary food source for the farming communities, precisely because they had enabled the farmers to have more children and thereby allowed the size of the population to grow so big it could no longer be fed by means of hunter-gathering. (Harari 2015, Ch. 5; also Diamond 1987.) But even more fundamentally, retracting from a niche and finding a new one is always a slow, incremental process; niches are not anything that a population can easily change. Examples of species getting stuck to their niches and so dependent on some of the elements of those niches that they will almost certainly go distinct if the niche collapses for some reason, are plentiful in nature, and not even we humans, with our enormously faster cultural evolution and the capacity to plan ahead, can reconstruct or revise the fundamentals of our niches overnight.

Transactional co-evolutionary cycles of people striving to develop new tools for coping and thereby changing the environment and unintentionally posing themselves with ever new challenges have

been going on since the Stone Age. Today they have brought us to a completely unprecedented situation in the history of this planet, what Erle C. Ellis (2015) calls 'anthropogenic biosphere.'[6] We are facing tremendous new coping problems such as pollution, climate change, and mass extinction of species. And yet, as the logic of evolution would have it, the only way is forward: trying to cope with ever new problems by keeping on constructing the niche, utilizing the resources available in the niche.

In order to have better chances of managing future, we need to learn from history, too: the history of how we got here holds important lessons about how we might improve our situation, avoid some mistakes that earlier generations made and perhaps correct some of their damages. A few of the most notable socio-cultural conditions and developments that we might learn from would certainly include the intertwined societal, cultural, technological, and economic changes that mark the end of what historians call the (late-)medieval period and what they call the beginning of (early-)modern age, in Europe. Arguably one of the most important factors involved in this change was the invention of the printing press. The speed of the press obviously allowed ideas and arguments and new knowledge to spread faster throughout the society and made books more and more a popular commodity, thereby creating new kind of egalitarianism with respect to learning and wisdom. Meanwhile, the very form of presentation that the early, pioneering publishers invented for printed books also influenced how people thought and carried out inquiries; so the 'communications revolution' that the printing press brought about would have played an important part in the momentous socio-cultural developments that unfolded in those days: the renaissance, the beginnings of modern science, the reformation of Christian church, capitalism and the rise of the bourgeoisie and the middle class, the very notions of nationality and nation state, and that of democratic government. (See Eisenstein 1979.)

These developments and changes marking the transition from the middle to modern age were interlinked in many ways, practically interdependent or at least fuelling one another (see also, e.g., Dewey MW 12: 101 ff.). Thus they need to be understood as a thoroughly relational issue, with relationalist conceptual tools. They may also be conceived of as constituting new kinds of ecological niches for people, human groups and populations to try and survive – a niche of capitalist economy, that of modern science, or of exploration and mapping of unknown territories. Later, in the eighteenth century, they cumulated into the Enlightenment and the industrial revolution.

One noteworthy cultural feature that comes along with liberalism is individualism – the notion that each person (or, in the eighteenth and nineteenth century still, each free man, at least) is an intrinsically valuable, certain human rights possessing, free agent morally responsible for one's own decisions and actions. This sort of individualism was written into the niche of modernity's culture early on. Dewey, too, observed that it is a modernity's creation (e.g., LW 1: 136–7, LW 2: 288 ff., see also MW 12: 104–9), and such that might unfortunately blind us from the fact that, actually, individuals (their minds and personal selves) take form and become what they are only in communities of people (MW 12: 190 ff., MW 14, LW 2: 353–7). It was also a creation that gave rise to the highly detrimental philosophical problematic of Subject and Object, or the mind–world dualism, because philosophers failed to appreciate how much the mind actually depended on language, which in turn was a product of social life (LW 1: 137, see also MW 9: 301–2, LW 16: e.g. 287–90). On the other hand, it was also due to the modernity's emphasis on individual that each human being could now in principle be seen as an intrinsically valuable and dignified person – one who, furthermore, had the right and freedom of opinion to judge matters for themselves and to question received wisdom when necessary, to observe and experiment and draw novel conclusions; so it was linked to the rise of modern, empirical science and naturalism too (MW 12: 105 ff., also MW 9: 303 ff.). According to Dewey, correctly understood individualism legitimizes the notion that

people deserve education (to guarantee the equality of opportunity). It also implies that their individual needs and standpoints should be taken into consideration in education. Individual differences should be embraced, and will be embraced by a truly progressive society – which in turn will strengthen democracy and thus also our communities, Dewey believed. (See MW 9: e.g., 311–15.)

A characteristic feature of our own day and age is the speed at which new technology, knowledge, and innovations are networking, diversifying, and feeding each other. Social scientists have come up with a variety of explanations for this, but it is interesting that some fundamental aspects of it seem quite adequately described in terms of Sterelny's niche-constructionist model of the Pleistocene origins of behavioral modernity. According to Sterelny, the size of the community (community here meaning all the bands of people that are in regular, friendly interactions) matters a great deal, because it allows more specialization, diversity and eloquence of skills and technologies, thereby tending to increase the rate of innovations in the population. (Sterelny 2016, 180.) And today we have a world community (loosely conceived) of seven billion people where everyone with an access to internet can see dozens or hundreds of skills, ideas, or innovations every day; where skills and innovations, knowledge and technology spread fast and can be combined with other skills and innovations, knowledge and technology; and where there is more specialization of knowledge, skills and technology than ever before. This has cumulated into automatization, robots and software that today allow producing quite unprecedented economic growth, but at the same time it is reducing the need of labor, much of it traditional industrial society's working class or lower-middle class labor; so inequality is now soaring in many countries, even alongside with growing GNPs.

How big a share of present-day jobs will be replaced by robots and computer programs and other forms of automatization within the next decade or two; and what new jobs will be created by the

same processes of technological advancement? How can we best prepare people, educate them, so that they will be able to navigate in this swiftly changing environment, adapt to their niche, change occupations and fields when old ones disappear or become over-saturated or uninteresting and new, more interesting and booming fields emerge? What will the possibly growing masses of unemployed or only sporadically or part-time employed people do with their lives? How, in general, should post-industrial societies be organized; how should they distribute wealth and well-being in particular? And, more importantly for the present purposes: how is all this best studied through social scientific inquiries? We argue that the said kind of, niche-constructionist conceptualizations imply a relational methodology of social scientific inquiry. Meanwhile, they are strictly speaking incompatible with the idea of ontological foundations (relational or otherwise) of social sciences.

Darwinian and Other Good Reasons for Methodological Relationalism

To be sure, not every brand of Darwinian thinking entails rejection of foundationalist ontologies of social sciences. The philosopher John Searle (2010), for example, is an avid spokesman of both Darwinian biology and a kind of 'Philosophy of Society' whose explicit aim is to lay the proper ontological foundations for the social sciences. And Searle claims to have found the 'exactly one' 'unifying principle' of social ontology (Status Function Declarations) that the human society is based on, the one principle that should be of equally fundamental importance to the social sciences as the notion of tectonic plates is to geology, the chemical bond is to chemistry, or the DNA molecule is to genetics (pp. 6–7).[7] But the apparent compatibility of social ontology and Darwinian evolution follows only from Searle's interpretation of evolution – indication of which can be seen already in his previous example of the DNA molecule being the one fundamental entity upon which the science of genetics is based. Like all his philosophy, Searle's notion of Darwinian evolution

comes down only to the most commonsensical, rough-and-ready version, to the mere non-teleological vein of explanation insisting that, 'evolution occurs by way of blind, brute, natural forces' whereby the environment selects the features of the species from amongst random (genetic) variation (Searle 1995, 16).

Searle's view of evolution leads him to embrace what has been dubbed the 'inside-out' direction of explanation: he starts with biology and explains intentional minds basically with complex enough brains – presuming that there must first have been hominids much like us who were already capable of 'the full range of perception, memory, belief, desire, prior intentions, and intentions-in-action', but did not have language yet (Searle, 2010, 65); he then explains the emergence of language 'as an extension of [those] biologically basic, prelinguistic forms of intentionality'; and, finally, explains the social world of institutions with our language-use (Status Function Declarations). That is, the way that Searle sees it, 'the human [sociocultural] reality is a natural outgrowth of more fundamental – physical, chemical, and biological – phenomena', and the explanation of these proceeds 'from intentionality to language and then from language to social institutions.'

That is just about the opposite of niche constructionist approach which implies more an 'outside in' direction of explanation – using the early (incrementally constructed) socio-cultural niche to explain the emergence of language and thereby also human consciousness.[8] (The niche also explains the growth of the hominin brains, let us remark – for that needs to be explained by some especially weighty evolutionary reasons, bigger brains having been an indispensable asset in the niche of more and more complex social life and early culture.) (See, e.g., Deacon 1997; Donald 2001; Bickerton 2009; Sterelny 2011, 2012b, 2016; Kivinen & Piiroinen 2012.)

This proposal to understand consciousness and the whole humanity more outside in – in the relational network of social action and language-using communities – than inside-out (as emerging from the brain), is a methodological point, not a metaphysical position. We are suggesting that the more appropriate way for social scientists to investigate consciousness is to study it as manifested in its exercise, to operationalize it into actions and behavior – especially symbolically communicable, socio-cultural actions and behavior that can be described with mental vocabulary. (Kivinen & Piiroinen 2007, 2012, 2013.) It is an important methodological point to make, let us emphasize, because it opens the mind up for empirical, social scientific inquiries.

There is indeed a fundamental difference between this sociologizing, strictly methodological standpoint and any ontologically philosophizing approach: only the former is compatible with and supported by the niche-constructionist evolutionary theory described above, which – especially in our Deweyan interpretation of it – implies a thoroughly transactionalist view of the subject(ive) and object(ive), of the mind–world relationship, the view that both consciousness and the experienced environment are what they are only in active transactions, are never completely 'made in the brain or by the brain' alone, that is, but involve the whole (socio-cultural, meanings creating) organism–environment history of transactions (Noë, 2009, 164; see also Dewey LW 1: Ch. 7).[9] So, for a transactionalist, it makes no sense to try and discuss about the ontological nature of the world as if outside all transactions.

It is only in organism–environment transactional problem-fields that we pick out causes and effects, for instance. As Hilary Putnam (1926–2016) pointed out, to distinguish 'the cause' from a mere 'background condition' always depends on picking out something from amongst other things – 'an act of selection, which depends on what we know and can use in prediction; and this is not written into the physical system itself' (Putnam 1990, 86). Or, as Dewey (LW 12: 456–7) put it: causation

should not be thought of as a substantial, ontological notion at all, but as a logical category which guides inquiry toward solving problematic situations. It is a conceptual tool that we use from our inquirer's actor's point of view. This is in line with the observation, made already by William James, about the fundamental nature of the mind: that awareness, if it is to be at all useful, has to narrow its focus by '*picking out* what to attend to ….' ('Just so an astronomer, in dealing with the tidal movements of the ocean, takes no account of the waves made by the wind … Just so the marksman, in sighting his rifle, allows for the motion of the wind, but not for the … motion of the earth and solar system.') (James [1880] 1979, 165–6.) It is much the same with any social scientific research, too: the inquirer's mind will have to try and pick out and focus on the causes most relevant for the purposes of the particular inquiry at hand. (Kivinen & Piiroinen 2004, 233 ff., 2006, 320 ff., 2007, 99.)

There is an infinite number of ways to describe objects, and they should not be compared in terms of their ontological correctness, correspondence to the one Reality; they are just more or less useful for some given purposes (Kivinen & Piiroinen 2004, see also 2006). The superiority of some descriptions over others is a matter of them providing better tools for solving problems (Rorty 1999, 47–71; Kivinen & Piiroinen 2006). Meanwhile, the very linguistic meaningfulness of descriptions ties them to other descriptions, often across various situations and purposes, precisely because the peculiarity of language as a symbol system is that the meanings derive from the system more than from any particular referent (e.g., Deacon 1997, Ch. 3; see Davidson 1991). That is to say, the meanings of conceptual tools and descriptions depend on their relations to other meaningful concepts and descriptions, too, as well as on their relations to observations, to other data, and to the problems we want to solve and other goals we might have. Generally, their meanings depend on their relations to the various practices where language is used, where goals and problems emerge, and where observations are made and data considered relevant or not. Meanings and hence the

intelligibility of anything come from their interrelations in the shared practices where they are created and maintained – a point appreciated by both Wittgenstein and Dewey (see, e.g., Medina 2004).

To understand this is of vital importance to science, we argue. Scientific inquiry is a socio-cultural affair, and 'every cultural group possesses a set of meanings which are so deeply embedded in its customs, occupations, traditions and ways of interpreting its physical environment and group-life, that they form the basic categories of the language-system by which details are interpreted' (Dewey LW 12: 68).[10] And to appreciate this is to become a methodological relationalist. As Dewey put it: 'In science, since meanings are determined on the ground of their relation as meanings to one another, relations become the objects of inquiry' (LW 12: 119). Thus social scientific research, too, cannot but be relational – what we investigate and debate about is rooted in networks of meaning, in communities of practice, and as such are understandable only through their relations (Kivinen & Piiroinen 2006, 2007; also, e.g., Fuchs 2001, 2–3, 12–23).

What is special to scientific inquiry, as opposed to other forms of knowledge-acquisition is that, in science, theories and hypotheses, their key propositions, and all the central notions used, are expected to be most systematically operationalized into research actions whereby they can be measured by their consequences. This was appreciated by the classics of pragmatism already, understanding as they did that beliefs can be seen as habits of action, inquiry as a method for solving the problems that would otherwise stop habitual action, and the knowledge gathered through inquiries as ultimately a tool of action. (See Peirce [1877] CP 5.358–387; James [1907–9] 1981; Dewey [1925] LW 4, [1938] LW 12.)

For a pragmatist, then, there should no question that the words used to formulate knowledge and to define and specify research problems, are always related to action. This means, among other things, that the appropriateness of descriptions is always measured in action; they may be found inappropriate for describing some of the causal pressures that people face in their environment, but there is no reason to assume that there is some ultimate, metaphysically correct description to be found – causal pressures can be described in many different ways for different purposes (Rorty 1998, 1999, e.g., 32–3). The world does not divide itself into 'facts': it is only us, with our language, in our actions, who divide the world into facts (Rorty 1989, 4–7; 1998, 86–7). We will try and anchor the terminology into the world, to be sure, but as we are doing so we are thereby turning the world into an environment; and an environment – as our Deweyan, niche-constructionist take on evolutionary theory shows – is not anything independent from us: it is what it is, the kind of environment that it is, only to some particular kind of organisms, just like the organisms are the kind of organisms that they are, act and think the way that they do (and stay alive in the first place) only because the environment and their transactions with it are the way that they are (see Dewey LW 12: 40).

The causal pressures that people face in their actions provide quite a sufficient connection between our beliefs and the world so that our 'human belief cannot swing free of the nonhuman environment', and 'we can never be more arbitrary than the world lets us be' (Rorty 1999, 32–3; also Davidson 1991). 'The world can, once we have programmed ourselves with a language, cause us to hold beliefs', Rorty (1989, 6) reminds us. This should be obvious to us Darwinians: the whole Subject–Object dualistic problematic asking whether people are really in touch with and correctly represent reality 'presupposes the un-Darwinian, Cartesian picture of mind which somehow swings free of the causal forces exerted on the body' (Rorty 1999, xxiii). Like any organism transacting with its environment, a human being acts and is acted upon, adapts to the environment, copes with

it, and forms habits of action. What makes us a little bit special amongst other species is our language, but language can also be viewed as but one more tool that we use in our transactions. It happens to be a rather peculiar tool, to be sure, such that makes it possible to describe things and to form propositional knowledge about them, and to accumulate such knowledge by creating more and more – interrelated, networking – descriptions, which oftentimes help us see new connections between things and thereby to come up with new ways of thinking and acting. (See Kivinen & Piiroinen 2006, 2007; also, e.g., Rorty 1999, 52–69).

One noteworthy advantage that follows from the methodological relationalist understanding that knowledge-acquisition should culminate in new, tried-and-tested and demonstrably useful descriptions that help us cope with the worldly causal pressures better than before, is that it allows us to get rid of the useless philosophical dogma of metaphysical essentialism (Rorty 1999, Ch. 3; cf., e.g., Harré & Madden 1975). Whereas philosophizers of sociology, ontological realists like Searle, are also essentialists in the sense that they are out 'to explain the fundamental nature and mode of existence – what philosophers call the essence and the ontology – of human social institutional reality' (Searle 2010, ix), methodological relationalists understand that the whole idea of science revealing some purpose-independent essences or essentials of reality is futile. Dewey saw this clearly: the notion that some descriptions capture something essential – as opposed to merely accidental – should not be thought of in terms of the ancient ontological distinction; rather, in modern science, to say that something is 'essential' is simply to say that it is indispensable in this particular inquiry (Dewey LW 12: 141; also Kivinen & Piiroinen 2004, 2006).

Philosophizing, ontologizing relationalists, however, seem surprisingly unwilling to follow us methodological relationalists to that conclusion. Even when they profess that they are giving up Cartesian dualisms, they nevertheless think it fruitful to hold on to the ontology–epistemology

dichotomy. How else to understand, for example, Mustafa Emirbayer's (1997) proclamation, in his classic Manifesto, to focus 'throughout upon ontology, largely … bracketing associated questions regarding epistemology' (p. 282)? Some eminent relationalists like Margaret Somers (1998, 743–5 and note 16) have gone even further and avowed themselves some sort of representationalists and essentialists, claiming that the reason why some (relationalist) social theories are better than others must be that they represent the nature of social reality more closely than those others – that they more accurately capture the real nature of that reality, which must exist independently from what we or anybody think about it.

Nevertheless, we should emphasize, the main point that Somers was making in the article just referred to was the very much agreeable and elegant critique of what she dubbed 'theory driven' approaches in social science, arguing for a more 'problem driven' standpoint instead – a standpoint from which research is understood as limited case studies aimed at solving specific, well-defined research problems, which in turn arise from some actual problems that people face in their social lives (all this taking place and making sense only in particular socio-historical contexts, of course) (Somers 1998, 730–9; see also Dewey LW 12.) With this general point we agree wholeheartedly and only wish to add that, when research is understood to be problem-driven as opposed to theory-driven, there is no need to presume any nature of reality distinct from our problems and purposes, waiting for us out there to try and represent it more or less accurately. We can just drop the whole subject–object dualism and, along with it, representationalist epistemology and essentialist ontology. (Kivinen & Piiroinen 2006, see also 2004, 2013.)

What working scientists need is not philosophical ontology but agreement within the relevant community on what the case is and what is to be done about it – how could we get to know the basic mechanisms that produce the problem, and how might we do more appropriate and higher

quality research on it. This is firmly rooted in action because scientific theories are, in fact, tools of action, which people expect to be useful for solving some actual problems – making life easier, helping them avoid injuries and illness, allowing them to move and communicate faster, to enjoy a richer variety of entertainment and hobbies, to organize our societies and economic actions more effectively and agreeably. (See Dewey LW 4, LW 12.) The operationalizability of theories is crucial in this connection because any good knowledge will have to be acquired by doing things; 'ideas are statements not of what is or has been but of acts to be performed' (Dewey LW 4: 111).[11]

Thus understood, it should be clear that scientific inquiry involves and aims at organizing data and prior knowledge into coherent webs of useful descriptions, useful tools. The development of scientific knowledge is not vertical deepening, revealing ever deeper layers of reality; it is horizontal widening – extending and finding new connections between networking knowledge contents and other descriptions, finding novel ways to describe things that are more useful and therefore more widely acceptable to scientific audiences. (See Kivinen & Piiroinen 2004, 2006; also, e.g., Rorty 1999, 82–3.) That is to say: scientific progress is not to be understood in terms of science getting closer to some ultimate essence of reality, but in terms of increasing power to predict events and to thereby help people better control their lives (Rorty 1998, 5).

In the fields of social sciences, the events to be predicted and the situations to be controlled are events and situations of social life, so the problems to be solved, research questions to be answered, and the data to be considered relevant with respect to answering those questions, are or relate to social actions past, present and future. Social scientific research, then, is best seen as a way to try and answer as significant, precise as possible, and unambiguously operationalizable research questions as possible, so as to aid solving some actual problems that people confront in their social lives. (See Dewey LW 12: 481–505; Kivinen & Piiroinen 2004, 2006, 2007, 2013.)

So the starting point of social scientific inquiry is not idle wondering about the ultimate nature of social reality. Thus it would be quite ridiculous to presume that some specific realist philosopher's – for instance, Searle's (1995, 2010) – ontology is the one and only, absolutely necessary foundation for proper social scientific inquiry. Nor, as said, do we need any relational ontology to tell us, for example, how deeply relational and/or flat and non-stratified the ultimate nature of social reality is; we need neither 'deep' nor 'flat' ontology of social universe (cf. Archer 1995; Dépelteau 2015). An actual working social scientist could never get any fruitful work done if she were to begin with some ontological presumptions outlining the nature of that to be known. Rather, she simply begins with some problem that she has come across, and utilizes linguistic conceptualizations, numbers and other symbol systems, so as to get a grasp of what the problem is and where to start looking for some relevant connections between it and some other objects – formulating empirically answerable research questions that can be operationalized into specific research actions to be taken.

Final Words

Problems, faced in action, then, are the starting point of inquiry. This should be obvious to a Darwinian thinker: the reason why any organism would engage in inquiry is that it faces some sort of problem in its actions. And for us human beings the methodology for solving such problems is particularly relational, as discussed herein, already because our most important tools of thought, language and other symbol systems, are relational. Meanings come from networks of words used together in social action, are rooted in and thus related to the ways they are used. Another reason why research methodology must be relational is that it aims at providing plausible descriptions, and the appropriateness of any description cannot but be measured in action – by trying to use it or

otherwise act in accordance with it amidst the causal pressures that the world throws at us and then evaluating the consequences of those actions. So the usefulness or uselessness of our beliefs and the conceptual tools we utilize in them, and thus the credibility of the results of our inquiries, are fundamentally relational to action. The issues and problems that social scientists, for instance, discuss and investigate – say, the equality or inequality between social groups – are comprehensible in the first place only as relational affairs; and that is how they need to be investigated.

Research work along the methodologically relationalist lines will also allow us to better understand the ways in which human consciousness has changed over the thousands of years of recorded history. The changes can be understood through the changes in our socio-cultural niches. Human minds have changed with the changing human organism–environment transactions. Those changes could not be explained chiefly in the Searlian inside-out direction, starting with the brain and individuals' cognitive apparatus; the human brain has not changed very much for the past 200,000 years, whereas consciousness has changed dramatically even over the past couple hundred years. We need the notion of evolutionary niche to explain this: consciousness, like the rest of humanity, is to be explained outside in, grasping the most crucial relations between people and the most salient features of their relational socio-cultural environment.

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Notes

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[1] Nor have social scientists and humanists been satisfied with solutions that simply add, as Dawkins (2006, Ch. 11) famously did, to genes the supposedly analogical concept of memes to cover human culture much in the same vein as genes explain biological life (see also Dennett 1995; Blackmore 1999; Aunger ed. 2000). As, for instance, Daniel Dennett (1995) admits, although the notion of meme is in some ways analogical to gene – referring to phenotype-affecting, behavior-guiding information packages that are less-than-perfectly copied and more or less successful in terms of prevalence in some population – it is also in important ways different from genes and lacks much of

[2] Baldwin was an influential figure around the turn of the 20th century, and Dewey did make a few references to his work – although, as Popp (2007, 107) notes, only as a social psychologist, not in evolution theoretical connections.

[3] For example, Norbert Elias' (1978) 'social figurations of people' may be seen as kinds of niches providing support and means of life, besides systems of meanings and standards for actions, for their member all the while being affected and changed by the people who participate in them. There is this whole network of interdependencies connecting people to one another insofar as they are human beings at all – a network binding them together in figurations, creating niches of social life for each individual therein. (See Kivinen & Piiroinen 2013.)

[4] Apprentice learning, of course, is 'learning by doing [–] … in an environment seeded with informational resources' (Sterelyn 2012a, 35), and is thus a very Deweyan notion too (see Dewey MW 9), although Sterelny does not mention Dewey in this connection (or anywhere in his book).

[5] The populations of early farmers did grow, to be sure, so from a narrow evolutionary standpoint, *Homo sapiens* as a species started doing very well. Obviously that is a separate matter from the well-being of human individuals. Along with the populations, the numbers of untimely deaths grew,

too – an individual's life-expectancy actually sank with agriculture. (Harari 2015, Ch. 5; also Diamond 1987.)

[6] On the other hand, it is arguably important to keep in mind that such steps do not break (out from) the continuum of nature and niche construction – this is one part of the message that we get both from Ellis (2015) and Dewey (e.g., LW 1). There are no 'gaps' in natural developments; as long as there has been life on earth there has also been continuous niche construction, organisms and their populations changing the environment through their activities and therewith posing themselves and other organisms with somewhat different environmental opportunities and obstacles. Indeed, as Ellis (2015) points out, even hunter-gatherers did in fact have considerable niche-constructing impacts upon their local environment, and the agricultural (or even the industrial) revolution should not be seen as something that separated human culture the rest of the nature so that it would be affecting the delicate 'balance' of nature as if from outside it. Still, of course, no one would deny that the revolutions in human technology have had noteworthy consequences and have very much changed the human condition and the planet we live on.

[7] The search for such a single principle is a common undertaking amongst ontological social theorists; even relationalist realists have contributed to it. Some, like Archer (1995), would say that the key principle is emergence, allowing several levels of relational, causally powerful *sui generis* entities; others, like Dépelteau (2015), have countered that the one basic principle of social ontology is that the relational social universe is flat; and still others, like Emirbayer (1997), perhaps, might insist that the one fundamental principle is the process-like fluidity of social reality. But we are arguing that all such attempts to find the fundamental principle(s) of social ontology are equally futile and unnecessary.

[8] As Dewey, too, saw it, language grew out of (social) action-related needs and then started to modify and redirect those needs; it thereby opened up a whole new world of possibilities (MW 14: 57), and, most crucially, created our peculiarly human mental life (LW 1: Ch. 5).

[9] More broadly, and put in more evolution-theoretical terms: as niche constructionism explains both the evolution of organic features and the development of the relevant environment with reference to organism–environment interplay, it leaves little room for any fundamental dualism between the two: 'dichotomous thinking is undermined by niche construction' (Laland, Odling-Smee & Gilbert 2008, 553).

[10] Pierre Bourdieu, for example, would also agree: any field of science can be understood as a relational space of positions, resources (sorts of capital) and opportunities that separates professionals from amateurs. The field incorporates sets of practices and the logic of those practices guides what people do. (See, e.g., Bourdieu 1977, 1988, 1992.) (Bourdieu also called himself a methodological relationalist (Bourdieu & Wacquant 1992, 15 ff.), and his position certainly had some similarities with what we call methodological relationalism – although was also in some ways different from it (see Kivinen & Piiroinen 2006, 315–320).

[11] The aim of inquiry, after all, is to determine, through rigorous testing, which opinions or beliefs (as habits of action) work the best, all things considered, to gain that pragmatic justification for them (See Peirce [1877] CP 5.358–387.) 'We may fancy that this is not enough for us, and that we seek, not merely an opinion, but a true opinion', Peirce already remarked on the age-old realist dogma: but in fact 'as soon as a firm belief is reached we are entirely satisfied … The most that can be maintained is, that we seek for a belief that we shall *think* is true. But we think each one of our beliefs to be true, and, indeed, it is mere tautology to say so.' (Peirce CP 5.375, see also 5.416, 5.525, 5.572.)