

Three Senses of “Emergence”: On the Term’s History, Functions, and Usefulness in Social Theory

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ABSTRACT: The term emergence, or irreducibility, has been used in a great variety of senses over the years, and different senses are useful in different discursive contexts. In this paper the focus is on one specific context, that of methodologically oriented social theory, and the question to answer is, what might be the most useful sense(s) of emergent irreducibility in that field? To answer that question, key intuitions of emergence are first abstracted from the concept’s history. Three main senses of the term are distinguished based on those different intuitions. Then the likely linguistic functions of emergence in each of those main senses are gauged in social theory and methodology. It is argued that one of the senses – here called “contingently epistemological irreducibility” – is in fact more useful as regards social scientific methodology than the others.

KEYWORDS: Discursive context, emergence, irreducibility, methodology, social theory.

In philosophical parlance, calling something *emergent* most often implies that it is – in one sense or another – “irreducible” to its components.¹ The gist of the issue then is: what does irreducibility mean? There is a great variety of answers to that question, the concept of emergence having been used in many distinct senses by different thinkers. And I do not believe in One Correct Definition of emergence, either – to take a pragmatic standpoint on the matter, as will be done here, a term’s meanings come down to how it can be meaningfully used in communication situations, and different senses of

¹ Even this characterization is sometimes questioned. Some say irreducibility is not essential for emergence and insist we allow for (weak) forms of emergence that are compatible with reducibility (e.g. Bedau 1997; Chalmers 2006; Clayton 2006; Sawyer 2001). But in this article I focus on emergence as irreducibility.

emergence are certainly useful in different situations, in different discursive contexts. Nevertheless, context-dependency is no excuse for not going into details of particular uses of words. Let us delimit our focus herein to social theory and, even more specifically, to its methodologically oriented dimension, and search for the most useful sense(s) of emergence in that particular context.

But we should begin with a short examination of the history of the emergence concept overall, so as to pick out its most prominent senses, the ones firmly rooted in the main intuitions of emergent irreducibility. For, of course, we first need to know these different senses to be in a position to estimate their pragmatic usefulness in the field of methodological social theory.

1. On the History and Intuitions of Emergence

The most basic idea of emergent irreducibility, that of a whole sometimes being *more than the sum of its parts*, has a very long history – it was considered already by Plato (1952 / *Theaetetus*: 203e ff.) and Aristotle (1954 / *Metaphysica*: 1041b). The idea obviously carries metaphysical connotations and has been connected to any number of stratified worldviews throughout human history, to various interpretations of *scala naturae* – the “great chain of being” (Lovejoy 1936; see e.g. Smellie [1790] 1977). Often these worldviews have involved axiological convictions, too, as more prestigious or valuable creatures and things (gods and angels, kings and noblemen, higher life forms, etc.) typically reside higher up in the hierarchical pyramid of being than the less valuable ones (peasants and slaves, simple life forms, lifeless objects). And while it is by no means necessary for any particular epistemic problematic to be involved in the understanding of such a pyramid or chain of being, there have certainly always been religious and philosophical mystics perceiving the path to (qualitatively better, or true) knowledge as a sort of ladder to be climbed, as a progress to be made toward higher levels of understanding (involving perhaps moments of mysterious illumination), and that may be seen as an archaic form of the epistemic intuition of emergence.

But it was not until early twentieth century that the idea of several epistemic levels fused together with the idea of metaphysical pyramid of being where higher-level wholes are more than the sum of their parts. An important prelude to that development took place when some of the results of the then very rapidly progressing modern science – especially the many surprises and uncertainties encountered in chemistry – led J. S. Mill [1843] (1906: Bk. III. Ch. vi) to articulate the idea of “*heterophatic* laws,” which he distinguished from the straightforwardly mechanical causal laws on grounds that we presently cannot understand the effects of the processes captured only by heter-

ophatic laws as simple sums of their components’ separate effects and thus cannot deduce them *a priori* from component-level knowledge.

Now this was an epistemological criterion, and one which allowed for optimism as regards future experience and progress in knowledge teaching us how to deduce (some) heterophatic laws from mechanical laws. Perhaps some of our heterophatic outcomes will be fully explained and predicted by the science of tomorrow: a heterophatic law may turn out to be derivable from the component-level laws in accordance with “laws of the generation of laws from others dissimilar from them,” and that would render science deductive (Mill [1843] 1906: Bk. III, Ch. vi, §2).²

Other empiricist thinkers, like Mill’s friend Alexander Bain and another prominent figure of the period G. H. Lewes, followed Mill’s lead in this matter, and Lewes was the first to coin the term “emergent” – meaning an outcome of a process so complicated that the exact role of each of its components is currently unknown to us. Opposite to emergents were “resultants,” outcomes of processes simple enough for us to understand precisely, and Lewes, too, kept the faith that someday perhaps we will be able to turn many of the present-day emergents into resultants (by finding mathematical formulae that capture how they come about). (Lewes 1875: 412–414.) That sort of open-endedness of what will be emergent in the future is characteristic of this empiricist, let us say “*contingently epistemological irreducibility*” sense of emergence, which is tied to what we currently happen to know.

But the concept of emergence soon evolved further, and the early twentieth century saw the contingently epistemological intuition of the nineteenth century empiricists become fused together with much more metaphysical emergence intuitions. Indeed, a brand new epistemological-cum-metaphysical emergence concept arose in the first decades of that century and had a real heyday in the 1920s, when writers like Samuel Alexander (1920), C. L. Morgan (1923) and C. D. Broad (1925) made use of it, embracing the idea that there is a hierarchy of levels of (descriptions of) reality where each stratum manifests new features logically irreducible to lower levels.³ For many of the emergentists of that period, a part of their motivation evidently stemmed from a wish to consolidate the new Darwinian worldview with older vitalistic, mentalistic or even theistic ideas. Alexander and Morgan in particular conjectured that the “pyramid of emergent evolution” embodies also some sort

² E. Nagel’s (1961) “bridge laws” later provided convenient shorthand for these Mill’s “laws of the generation of laws from others dissimilar from them.”

³ As these three celebrated emergentists of the 20s all lived and worked in Great Britain, the period is sometimes dubbed the heyday of *British* emergentism (McLaughlin 1992); but there were emergentists elsewhere, too, like Roy Wood Sellars (1922; 1926: Ch. xxiv) – father of the famous Wilfrid – in America.

of “deity.”⁴ But the epistemological-cum-metaphysical emergence concept as such was not theistic; Broad’s theory is arguably secular.⁵ It just fortifies the Millian notion of contemporary scientists’ de facto inability to deduce emergents from their components with the postulate that such a deduction is impossible *even in theory* (see Broad 1925: 61).

Indeed, a major point concerning emergence in the 1920s is that it no longer meant just that it so *happens* (contingently) that *we* (scientists or human beings) are *currently* (but perhaps not in the future) unable to deduce emergents from their components; rather, even an “archangel” endowed with infinite computing powers would be unable to accomplish that (Broad 1925: 70–71). Emergence became “*even-in-principle irreducibility*” – not just epistemological but also metaphysical irreducibility, albeit *not* in the sense of *conception-independent* metaphysics, it should be noted. As Simon Blackburn (1996) points out, there are at least two very different conceptions of metaphysics: (i) contemplation of Reality as it ultimately is independently from how anybody ever conceives of it, and (ii) contemplation of how reality is conceived, investigation of the conceptual schemes made use of in understanding the world; and Broad’s metaphysics was of the second kind, not something independent from all thinking and experience, but a matter of conceptualized experience that can be scrutinized through logic. (That is why a claim that X logically cannot be known in terms of its components is, for Broad, a metaphysical commitment.)

The concept of emergence roughly in that Broadian sense aroused a lot of excitement throughout the Western philosophical circles in the early twentieth century, until its popularity plummeted for a while around the middle of the century (see Stephan 1992: 26) – perhaps due to the upsurge in empiricist philosophy of science characteristic of the period. Namely, empiricism again encouraged purely epistemological interpretations of emergence as just limitations of our present knowledge and theories (Hempel & Oppenheim 1948: 146–152; Nagel 1961: 366–374). But that trend was rather short-lived and the next wave of metaphysical emergentism started gaining momentum

⁴ Morgan was also a known scientist and did suspect that deities do not go well together with scientific thinking; but he allowed himself to supplement his scientific treatise with “philosophic” speculations: “while I hold that the proper attitude of naturalism is strictly agnostic, therewith I, for one, cannot rest content,” he wrote: “I acknowledge God as the Nisus through whose Activity emergents emerge, and the whole course of emergent evolution is directed. Such is my philosophic creed, supplementary to my scientific policy of interpretation” (Morgan 1923: §6).

⁵ Geoffrey Hodgson (2004: 238–241) pictures Broad as a champion of non-religious emergence who “rescue[d] emergentist philosophy from theology.” However, even Broad (see 1925: 514 ff.) was interested in paranormal research. Many metaphysical emergentists have in fact been of a “supernaturalist” bent, although there have certainly been secular ontological emergentists, too – Mario Bunge, John Searle and Hodgson himself, for example.

in the 1970s – in concert with again growing interest in ontologically realist, as opposed to empiricist, philosophy of science.

By then there was a host of different interpretations of emergence around, for although the leading emergentists of the 70s, such as Karl Popper ([1971] 1979; 1974; 1977), Roy Bhaskar ([1975] 2008; 1979; 1986) and Mario Bunge (1977; 1979a; 1979b), mostly conceived of emergence in an ontological sense, they differed greatly on specifics – not least because they had different concepts of ontology. Popper I think was closest to the Broadian interpretation, emphasizing the even-in-principle irreducibility and unpredictability of emergents, binding it together with conception-dependent stratified ontology (see Popper [1971] 1979: 153 ff.; 1974; 1977: 16 ff.). But Bunge, for instance, suspects that Popper’s emergence concept just confuses epistemology and ontology; Bunge himself championed a thoroughly ontological definition, separating emergent properties from all such epistemic considerations as unpredictability and sense of mystery (Bunge 2003: 12–14; also e.g. Mahner & Bunge 1997: 29–30). And Bhaskar’s emergence, in turn, is arguably a hybrid of these themes – for on the one hand he too criticizes Popper for not paying sufficient attention to (“intransitive,” i.e. mind-independent) ontology (Bhaskar 2002: 14–15; Outhwaite 1987: 29–30, 36; Potter & López 2001: 6–7), but on the other hand he often speaks of ontological emergence as something intimately tied to the fact that we (seem) unable to deduce and predict the higher-level features from the lower-level laws (see Bhaskar [1975] 2008: 112–117; 1986: 104 and note 1a, 113–114).⁶

Bunge’s theory perhaps best exemplifies what may be called the “*purely ontological irreducibility*” interpretation of emergence. According to Bunge, it is perfectly possible for us to understand an emergent, to know exactly how it arises, while it still remains emergent because “explained emergence is no mere resultant.” In fact, “[e]ven modest accretion processes can ensue in systems possessing emergent properties.” So the process of emergence need not be complicated even in our eyes, to say nothing of the eyes of an archangel, it need not have any air of mystery about it. Actually, *every* chemical reaction produces emergent outcomes, and even the breakdown of a system, or the substitution of some of its parts by others, are emergent processes (Bunge 1979a: xiii, 30). Emergence for Bunge is so purely an ontological notion that it is almost trivial: in no way does the fact that a property P is emergent signify even the slightest ignorance on our part of the underlying component-level mechanisms producing P, because all it takes for P to be emergent

⁶ There is some ambiguity in Bhaskar’s ontology (Cruickshank 2004), yes, and some recent ontological emergentists see this as a reason to prefer Bunge’s, or perhaps Wimsatt’s (2003), emergentism to that of Bhaskar’s (Kaidesoja 2009; Le Boutillier 2013). But Bhaskar has certainly had his share of following, too (Potter & López 2001; see also e.g. Outhwaite 1987; Collier 1994; Archer 1995; Lawson 1997).

is that it is a property of a whole but not a property of its parts (Mahner & Bunge 1997: 29).

2. Taking Stock – the Main Senses of Emergence

Many theorists have elaborated and redefined the concept of emergence over the years to serve their own purposes, turning it into a vague chimera concept (see O'Connor & Wong 2012). Today, all the different senses of emergence have little if anything in common. Nevertheless, the historical survey in the preceding section brought out a couple of intuitions of emergence that seem more outstanding or central than the others, so while there are numerous different interpretations of the term around, perhaps all the more plausible ones might be conceived of as expressing or combining this handful of different intuitions. Indeed, I suggest our analysis of emergence can go a long way by distinguishing (1) the traditional empiricist intuition of contingently epistemological irreducibility, the idea that things are emergent precisely insofar as the relevant (scientific) community today acknowledges that it is presently unknown to us how exactly they could be epistemically reduced to their components; (2) the intuition of emergence as even-in-principle irreducibility, the strong epistemic ideal tied to conceptualization-dependent metaphysics; and (3) the intuition of standpoint-, context- and conceptualization-independent, purely ontological irreducibility, the intuition that the world consists of *sui generis* strata no matter what anybody thinks or knows about it.

All the rest of the gamut of emergence conceptualizations that we find in philosophy and science today is due to different thinkers relying on different conceptions of knowledge, ontology or reducibility, as well as their different ways of combining the three basic intuitions. Meanwhile, beneath the surface variety of emergentisms, all three basic intuitions are still doing well today – each is given pride of place by some discussants. Indeed, first, there are thinkers who have adopted a Millian or Hempelian stance and allow emergence only in a purely epistemological and contingent sense (see e.g. Dennett 2005: 3–7; Hedström 2005: 74–75; Pleasants 1999: 111–112; cf. also Fuchs 2001: 199–201); second, others still defend a strikingly Broadian or Popperian version of emergence, even-in-principle irreducibility stemming from the disparities between different levels of conceptualization (e.g. El-Hani & Pereira 2000: esp. 119 and note 2; McIntyre 2007; Sawyer 2001: esp. 555–558, 564–572; see also Searle 1992: Ch. 5);⁷ and third, there are also many

⁷ Searle calls his view ontological, but he is not speaking of conceptualization-independent ontology and emergents. Rather, he is saying that *given the way reality is conceptualized*, there is at least one emergent feature – consciousness – which, “*by definition*, is excluded from a certain pattern of reduction” (Searle 1992: 122 [emphasis added]). Indeed, the contrast

who understand emergence in a Bungean or Bhaskarian vein – as a mainly or even purely ontological, conceptualization-independent matter which has little or nothing to do with what anybody knows about anything (e.g. Emmeche, Køppe & Stjernfelt 1997: esp. 83–85, 105–106, 117; Silberstein & McGeever 1999; Elder-Vass 2007: 28–32, 38–40; cf. also Holland 1998).

I think it is important to be aware of these three basic intuitions. Thus I cannot really recommend any of the much more common *dichotomous* analyses, separating only “strong” and “weak” forms of emergence; those analyses simply lose sight of one or another of the three main senses of emergence. Indeed, that is why the dichotomy of “strong vs. weak” emergence is not one dichotomy but several: these dichotomies differ from each other precisely with respect to which intuition they disregard. For instance, the usual juxtaposition is between ontological and epistemological emergence, but this leaves room for two very different interpretations of the epistemological side: some conceive of it as even-in-principle irreducibility (McIntyre 2007: 339–342), whereas others think of it as contingently epistemological irreducibility, as something that just happens to be hard for us to predict (Silberstein & McGeever 1999: 186). And then there are some strong vs. weak emergentists who find ontology inessential in this regard and rather juxtapose contingently epistemological (weak) and even-in-principle epistemological (strong) irreducibility (Chalmers 2006; cf. also Bedau 1997). Only by arming ourselves with the threefold distinction we become aware of all the most important emergence intuitions.

Each of the three senses is useful in some discursive contexts (although by this I do not mean to say that I accept, still less that I endorse all of those uses – let me just observe the fact that each sense has in actuality been found useful by some discussants in some language-games). To begin with, there are philosophical contexts where some debaters find it important to remind others that people do not create many of the features of the world just by talking about them, and that they thus *cannot undo* those features even if they managed to explain them in terms of their components. In that context it has been found useful to call features emergent in a purely ontological sense. The idea of emergence as even-in-principle irreducibility, in turn, is often used when a discussant wants to point out *logical discontinuity* between given two vocabularies. More specifically, in the philosophy of science, emergence in this sense has been referred to in defense of the legitimacy of some special science(s), the argument being that the science in question is needed because its objects are irreducible in the sense that they cannot (due to insurmount-

Searle (1992: 123) draws “between the reducibility of heat, color, solidity, etc., on the one hand, and the irreducibility of conscious states, on the other hand, does not reflect any distinction in the structure of reality, but a distinction in our definitional practices.”

able differences between the conceptualizations used) be deduced from those of a more elementary science – not even in principle. And as to emergence in its purely epistemological sense, speaking of that kind of irreducibility is useful in debates where we wish to admit our ignorance concerning how a given item might be understood through its components yet do not wish to commit ourselves to a view as regards how “the Reality” must lie *independently from* that epistemological point. Referring to our present state of knowledge and cognitive limitations, emergence claims in that sense may be useful in, say, discussions concerning interesting research problems.

The reader will have noticed that I am not saying anything about what emergence *is* “really,” and what I hope comes across is that I do not believe there to be any one type of phenomena correctly named emergence. In any case, instead of trying to tell what emergence is, I merely try to tell what one can do with the term emergence. And a lot can certainly be said about how best to use a term in specific contexts, such as social theory.

3. Emergence in Social Theory

The prevailing inclination among social theorists these days seems to be to understand emergence in an ontological sense (e.g. Archer 1995; Lawson 1997; Hodgson 2004; Elder-Vass 2010). The purest example of such an understanding can still be found in Bunge’s work, where emergence, as said, is completely unrelated to whether we understand it (Bunge 1979a: xiii; 2003: 12); a Bungean society has emergent features simply because no single part of it possesses those features, but this has nothing to do with our understanding of its mechanisms (see Bunge 1979a: 243 ff.; 1997; 2003: 79–80). Of course, some ontological emergentists are not satisfied with this purest definition. For them, it is not ambitious, or interesting, enough: is Bunge not saying merely that every whole, simply because it is a whole, has emergent features? Even ontological and methodological individualists accept emergent features in that sense! (Kaidesoja 2009: 313.) Some have been more attracted by Bhaskar’s (1979; 1986) theory, for example,⁸ because of its deeper metaphysics granting emergent entities *sui generis* causal powers of their own – powers springing from their essential natures. Dave Elder-Vass (2007; 2010), for instance, has recently defended a rather Bhaskarian conception of emergent social wholes, one which allows such wholes to have downward causal effects in their own right. (That certainly contradicts Bunge’s (1979: 39) views, be-

⁸ Of course, there are innumerable versions of ontological emergence around besides the Bungean and Bhaskarian “archetypes”; for example, Wimsatt’s (2007) emergentism is preferred by some social theorists (Kaidesoja 2009; Le Boutillier 2013). The details of all versions cannot be dealt with here, I discuss the matter only in general terms.

cause he denies such “holistic” assumptions of downward causal effects, saying they are but “actions of some components upon others ... not the whole acting on its parts but some or even all of the remaining components of the system acting on the given component.”)

But there are also chiefly epistemological emergentists among social theorists – even some who admit social emergence only in the weakest, contingently epistemological sense (e.g. Epstein & Axtell 1996; Hedström 2005: 74–75). Their positions often come close to ontological individualism, but that is by no means necessary – Stephan Fuchs, for example, speaks of emergence in a sense which seems rather contingently epistemological (see Fuchs 2001: 199–200), yet his theory is anything but individualist.

And then there are still others who believe that, although ontologically there would not seem to be anything more to the social level features than individuals doing things, at least some social features are epistemically speaking even-in-principle irreducible (e.g. Kincaid 1997; Sawyer 2001). These theorists seem like *methodological collectivists*, because their reasoning depends on the social features’ logical irreducibility (although some of them also draw (conception-dependent) ontological conclusions from it).

Now I am not saying that any of these uses of the term emergence in social theory is altogether unjustifiable (although taken together they imply that the term’s present versatility may be something of a problem). But all too often the fruitfulness of this terminology remains unclear, especially as regards methodology: many theorists present the issue as if crucially important discoveries about the nature of social issues had been made, enthusiastically waving the banner of emergentism all over the place, but poorly articulate how exactly the use of that term is supposed to affect what social scientists actually *do*. Let us see if we can improve this situation.

To cut to the chase, I think the best use can be made of the term emergence in social theory by putting the most weight on its empiricist, contingently epistemological sense. This lets the relevant social scientific community to decide which features and combinations are (to be called) emergent. So I disagree with Holland (1998: 5) and others who say they “do not think emergence is an ‘eye-of-the-beholder’ phenomenon that goes away once it is understood”; to me, emergence *is* an eye-of-the-beholder phenomenon – although the “beholder” is a collective, a speech-community – and it does indeed disappear when sufficiently well understood: its scope changes over time due to changes in what the relevant community deems appropriate to call emergent. Thus I must also disagree with Spencer-Smith (1995: 120–121), who finds it counterintuitive that X might be emergent at time t and then not be emergent at $t + 1$. I fail to see anything counterintuitive about that, because to me there is no point in assuming context-independent, “real”

emergence. To put it bluntly, I think *there are emergents only insofar as people consider something emergent*.

However, I am *not* saying we should accept the Millian or Hempelian understanding of emergence as such. Most crucially, I do not believe that (social) scientific work comes down to trying to subsume events under covering or *strict laws* from which explanations could be *deduced*. I do not share that ideal of deduction with older empiricists, and even most reductionists today are not trying to subsume covering laws under more covering laws but are rather after only what Wilson (1999: 56–60) calls “consilience” – connecting facts and theories across different disciplines, weaving a coherent web of explanations and predictions, which certainly involves as strict laws and principles *as possible*, but not ones that could be deductively subsumed under one another. In fact, I believe the pragmatist classic John Dewey had it right when he suggested that there are no laws completely beyond exception: even the laws of physics are in the end but statistical, probabilistic generalizations; laws are empirical regularities found in the frequencies of events, regularities which we may usefully conceptualize as *mechanisms of events* because they allow us to predict the likelihood of given events in some specific circumstances (Dewey [1929] 1988: 164–167, 198–199).

Indeed, the term mechanisms is preferred over laws today, at least in the human sciences and probably in all special sciences (e.g. Bunge 1997; Machamer, Darden & Craver 2000; Delehanty 2004; Hedström & Ylikoski 2010).⁹ And the term emergence could be used to characterize features whose mechanisms the appropriate scientific community today considers so poorly understood in terms of their component factors (the whatever things, actions, events, processes, etc. are conceived as the relevant constituents of the feature) that they cannot currently claim to have a good grasp of those mechanisms. A good grasp of mechanism, in turn, would not mean being able to deduce the phenomenon but rather just having an explanation of it in terms of its component factors such that (the bulk of) the relevant scientific community is content with. (An explanation like that surely involves some capacity to predict the phenomenon in question, too, but only its approximate likelihood in given circumstances.)

I know that many philosophers of science, even some social epistemologists, are squeamish about this idea because they fear it means turning the scientific community into “a *guild*” whose rulings would have “no higher

⁹ Today mechanisms are usually understood in some ontologically realist sense markedly different from Dewey’s pragmatist, instrumentalist sense, but I do not think the issue is decided in favor of realist interpretations, and we can learn a lot from Dewey’s writings in this regard, too. A detailed presentation of my own view of mechanisms is left for another occasion, but it is a pragmatist, empiricist, instrumentalist view, which takes concepts not as revelations of Reality but as tools for explaining regularities of events.

court of appeal” (Fuller 2003: 475). But yes, I shun conceiving myself as a Philosopher Judge of the Supreme Court of Science, and so I admit believing that in the end we must allow scientists (the community engaged in scientific practices) to decide what is scientific; that goes for methods and facts, including emergents and resultants, as well as for the limits of the community itself and its practices (also Rouse 2003: 467–468; Kivinen & Piironen 2006: 312–315). What a philosopher can do is make conceptual suggestions for scientists to consider – suggestions that might help clarify something and thereby contribute positively.

Speaking of conceptual suggestions, am I then urging that social theorists reconsider their present ways of speaking of emergent irreducibility and give up using it in any chiefly ontological or even-in-principle sense? In a word, yes. Of course, we cannot pick one sense of a term and simply *decide* to use it in that sense from now on. Language leads a life of its own, and it seems unlikely that purely ontological and even-in-principle senses will soon be dropping from amongst the uses of the term emergence. But a philosopher may still take the floor to *object to* the current state of affairs. This may mean objecting to a very broad linguistic framework, but there is no harm in that. (In this regard one can take inspiration from Wilfrid Sellars ([1956] 1997: §42) who challenged the whole language-game of “common sense,” suggesting “a rejection (in *some* sense) of this very framework itself, in favor of another built around different, if not unrelated, categories.” Obviously this did not imply “a proposal to brain-wash existing populations and train them to speak differently” – it was just a case of philosopher making a stand against certain linguistic practices. (Cf. also Rorty 1998: 44–45.))

4. What *Use* is Emergence?

As to the arguments for my view, let me begin with a positive one in favor of making use of emergence mainly in the sense of contingently epistemological irreducibility; later, in the next section, I will contemplate the main negative sides of using it in one of the other two principal senses involved in the concept.

The main useful discursive function of claims that something is presently epistemically irreducible is, I suggest, *guiding researchers toward what are presently considered interesting complex research objects in the field*. It is like saying: “This here is caused by a mechanism about which we do not have exhaustive knowledge yet, so perhaps we should do some research on it!”¹⁰ Seen

¹⁰ Then why not just say *that* and drop the term emergent, you ask? Indeed, why not; no single word is indispensable – there are always alternative ways to say things.

that way, an emergence claim can pick out social scientific research problems considered important and challenging (whereas the features we tend not to call emergent will tacitly be presumed sufficiently well understood or otherwise uninteresting).

Notice that this means, among other things, that emergence is not an *explanatory* word – the term by itself explains nothing. It is an *explanation-related* word, however, because it guides the members of the speech-community in search of interesting features wanting explanation. Emergent phenomena seem mysterious, but only in the sense that more investigations are needed in order to increase our understanding of them (see also Holland 1998: 2). So emergence as I understand it – as opposed to emergence in the sense of even-in-principle irreducibility – *encourages* attempts to reduce emergent features to their components. And while such attempts may also be encouraged by ontological emergentists, contingently epistemological emergence differs from the purely ontological sense in that it acknowledges our present *epistemic bafflement* concerning the object, the “shroud of mystery” covering it, and alludes to that bafflement as *warrant* for further research. Emergence claims in purely ontological senses, in contrast, detached from epistemic concerns as they are, do not as such imply that we should take actions toward or try to understand the objects in question – that is not a part of their function.

This, then, is the positive argument for putting the most weight on the contingently epistemological intuition of emergence in the discursive context of methodological social theory: it is the one sense in which the term can be used in pinpointing interesting, baffling problems of social scientific importance, by the same token encouraging research into them and leaving the door open for future knowledge perhaps enabling us to remove the present bafflement by way of reducing the object into (finding its mechanisms from) its simpler component factors.

The other two main intuitions of emergence fail to serve this positive function, and may actually be more harmful than useful in methodology. Of course, that does not mean they are useless in social theory, period: it cannot be doubted that mainly ontological and even-in-principle senses of emergence can be useful at least in the context of *social theory for social theory's sake*. Most crucially, when theoretical collectivists wage their battles against individualists, they may make use of the term emergence against both chiefly ontological individualists, whose principal claim is that social features have no real existence of their own in addition to all the individual activities that go (and have gone) into them, and individualists of the “at-least-in-principle” bent who maintain that it must be possible, at least in principle, to explain any social feature in terms of individuals and their beliefs. (The two kinds of individualism – just like ontological and even-in-principle emergentism – are

often confused with each other or tangled together, but can and should be kept separate (Udehn 2001: 350–351).¹¹

So an important caveat must be added: in the theoretical struggles against individualism, the term emergence can be used as a weapon in its purely ontological or even-in-principle sense. However, those battles against individualism are not likely to be *resolved*: they are indeed a paradigm case of social theory for social theory’s sake – of that endless intellectual game almost completely devoid of practical social scientific significance (although of course hailed as crucially important in that regard by many of its participants). And although I am quite sure that there will always be social theory for social theory’s sake, and may even admit that there is some intrinsic value to it – same kind of value as there is in art or a good game of chess – I personally encourage putting more weight on the methodologically-oriented social theory, which may actually help improve social scientific practices, and in that discursive context emergence in its ontological and even-in-principle senses is more harmful than useful. Let us see why.

5. Problems with Even-in-principle and Purely Ontological Irreducibility

As claims of purely ontological emergence as such do not suggest any research actions to be taken, they tend to fare badly in terms of discursive usefulness in methodological social theory. Of course, ontological emergentists do in fact want to suggest research actions to be taken and some of them have made noteworthy methodological contributions, too (e.g. Bunge 1997; Wimsatt 2007), but I have to say those methodological contributions do not really *follow from* the ontological use of the term emergence. All the methodological advice they want to give could just as well be offered from an instrumentalist standpoint, presenting the strata or hierarchy of structures and properties as but more or less useful conceptual devices. Or, perhaps, it does not even matter whether we use level terminology at all: instead of levels, which tend to draw a picture of collective being somehow above, on top of, and in addition to, people, we could just as well speak of wider and narrower scopes, fields, or networks of agents, thinking of micro terminology as focusing into specific

¹¹ A purely ontological individualist may admit that social features are completely unpredictable due to their complexity, but claims that they consist of nothing but people doing (and having done) and believing things. Meanwhile, an at-least-in-principle epistemological individualist may admit that social features are ontologically *sui generis*, but insists that they must still be in principle reducible to individuals epistemologically speaking (perhaps because the world is completely determined and so even *sui generis* features are predictable for an archangel).

details, and macro as abstractions over larger landscapes of society. In fact, one of the dangers that I see with the idea of ontologically emergent levels is precisely that it may discourage instrumentalist interpretations and horizontal metaphors in social sciences, insisting as it does that the micro–macro difference is not a matter of size or different heuristic tools but of ontologically distinct *sui generis* strata of autonomously powerful entities (e.g. Archer 1995: 8 ff., 57 ff.).

A related problem, against which Dewey & Bentley [1949] (Dewey 1991: 121) warned, is that speaking of ontological emergence even in some of its more innocent senses which profess to maintain naturalness, in fact stealthily turns emergents into something different and distinct from their natural components, into something almost “unnatural” because *sui generis*, capable of interacting with and opposing its components. And that just creates unnecessary metaphysical mystification. In social theory, too, what Peter Hedström (2005: 69) for instance finds is an “unfortunate tendency ... to treat social reality as if it were stratified into different ontological levels that can be causally analyzed independently of each other”, just “obscures rather than clarifies, and typically leads to rather superficial causal accounts and explanations.”

A deeper problem, I should point out, may be involved in the very ontologizing vein of thinking common to ontological emergentists and individualists alike – the idea that we first need to lay down a specific kind of ontological theory in order to start off on the right foot methodologically (Bhaskar 1979; Searle 1995). I think that that is ill-advised (see also Rorty 1998: Ch. 3; Pleasants 1999; Kivinen & Piirainen 2006; Van Bouwel & Weber 2008). Even if not taking sides as regards whether ontological emergentists are “right” or “wrong” in the sense that ontological *reductionists* would accordingly be wrong or right in their claim that objects are ontologically reducible independently from what anybody knows about them, I am tempted to say that *all* enthusiastic ontologists are setting and answering a nonsensical and thus useless question, the question of how the world looks outside all points of view or from a “God’s eye view.” This is due to their representationalist idea of the mind being a mirror of the world (Rorty 1979), or what Dewey [1929] (1988: 19) called the Spectator Theory of knowledge, and their (implicit or explicit) Picture Theory of language – the conviction that true claims must correctly present ontologically real referents “out there.” For that is just about the only explanation for the ontological emergentist assumption that since there are both terms X and Y referring to the same part of the space-time, and their meanings are not identical, we should conclude that X and Y refer to *different levels of reality*. But for those of us suspicious of the idea that mind/language–world relationship is best captured in terms of

visual metaphors, this is ample reason for abandoning the idea of ontological stratification (Heil 2003).

In any case, methodologically speaking again, even if we assume that ontological emergence implies no unnecessary mysteries or reification – even at its *best*, that is – the idea of ontological emergence is just, in a word, trivial, because methodologically *inconsequential*. As a paradigm example of such harmlessly trivial idea of emergence, the Bungean emergence must not be “equated with ignorance of the mechanism resulting in the assembly of new things from their constituents or their precursors” (Mahner & Bunge 2007: 29), and hence will not guide us in methodology.

Yet that sort of inconsequentiality is more than can be said of emergence in the sense of even-in-principle irreducibility, which means saying that it is absolutely impossible to reduce the emergent phenomena to their components. That claim is something we can scarcely have any use for in science: categorically denying the possibility of reduction beforehand, even-in-principle irreducibility exemplifies overly pessimistic, *antiscientific* attitude. I know this is a bit of an ideological statement, but I think scientists should always be eager to try and understand complex wholes by breaking them into pieces and seeing how those pieces work together in constituting the wholes at issue; attempts to reduce complex objects are at the very core of scientific methodology. (See Hempel and Oppenheim 1948: 149–152; Wilson 1999: 55–60; also Dennett 2005: 3–7.) For what else a claim of even-in-principle irreducibility, forbidding attempts to reduce the object in question to its components – pretending perhaps that the magic word emergent is all the explanation we need – is but a way of declaring the object *taboo*?

When human consciousness, for instance, is dubbed emergent in the even-in-principle irreducibility sense, those emergentists are claiming, in effect, that consciousness is an *insoluble* mystery, which “they themselves understand ... a little bit – just well enough to be able to conclude that it *couldn't* be solved by any mechanistic account” (Dennett 2005: 5). And that, as Daniel Dennett for instance has always been eager to point out, is just utterly unscientific. Of course, even scientists may sometimes come to conclude that certain features very likely cannot be well understood through their given components – may even be tempted to utter the words “not even in principle” – but that is not a conclusion we wish to encourage in science. Rather, we always want to leave the door open for future reductions.

In practice, also many even-in-principle irreducibility emergentists, like Popper, do admit that scientists “*have* to welcome reductionism as a *method*”; but they nevertheless insist that their emergentism is crucial in the *philosophy of science*, and so Popper goes on to reproach reductionists for the wish of capturing the ultimate essence of Reality (the most fundamental micro-struc-

ture) (Popper 1974: 259–260; cf. also Clayton 2006: 1). Fair enough, I also want to avoid essentialism, and in fact reduction-*ism*, too; I think a good point is made by those ontological emergentists who say we do not need to embrace reductionism (as a sort of fundamentalist principle according to which reduction is *always* the way to go), and that we may still admit that striving for singular reductions is an essential part of scientific work (Mahner & Bunge 1997: 114–116; Hodgson 2004: 29). I join those emergentists in not accepting reductionism as a fundamental methodological principle yet nevertheless encouraging scientists to strive for singular reductions in given cases – and leaving the door open for future reductions. In fact, *pace* Popper, I think the right way to battle dogmatic philosophical ideologies like at-least-in-principle reductionist individualism is not embracing another dogmatic philosophical ideology like even-in-principle irreducibility emergentism, but rejecting all such –isms in the philosophy of (social) science and concentrating instead on the fine-tuning or methodological grinding of the conceptual tools used in scientific practices.

Aside from such humble methodological fine-tuning there is probably little a philosopher can do to help research practices. But at least we should stop harassing or blocking research, and that means, among other things, preferring the contingently epistemological sense of emergence over the even-in-principle irreducibility sense in social theory – for the former actually encourages research, while the latter tries to step in its way.

6. Final Words

In this paper, an attempt has been made to say something of substance about the uses of the term emergence in the context of methodological social theory. Adopting a pragmatist standpoint, I evaluated the usefulness of the different main senses or intuitions of emergence; so instead of asking, what *is* (the ultimate nature of) social emergence, I asked, what are the main *functions* of calling social phenomena emergent? Hopefully this discussion has helped opening up new, fresh viewpoints on this issue.

I abstracted three major intuitions of emergence: contingently epistemological irreducibility, even-in-principle irreducibility, and purely ontological (i.e., conceptualization-independent) irreducibility. The main problem we found with even-in-principle irreducibility sense of emergence was that it is unscientific, discouraging scientists' thirst for explanation through reduction; at worst, it may even be used as a sort of explanatory magic word, supposedly providing all the explanation needed. The purely ontological intuition of emergence avoids that problem, but insofar as emergence is thereby detached from epistemological concerns it becomes rather unhelpful in methodological discussions. Moreover, social scientists should not be expected to achieve

much by chanting that a structure is ontologically *sui generis* no matter what anybody knows about it; and at worst, it may just lure us into a host of unnecessary metaphysics.

This leaves us with the contingently epistemological sense of emergence, which points to complex issues we presently do not know how to explain and predict in a satisfactory manner on the basis of knowledge of their components alone; and that sense of emergence can be of some use in methodological social theory. It can be used in guiding research activities: its reference to the current mystery surrounding the phenomenon in question is useful as an encouragement and legitimization of research on the issue. So I argued that the most weight should be put on this positively explanation-related sense – as opposed to the other, should we say, explanation-independent and explanation-frustrating senses.

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