

## Last Chance Saloons for Natural Kind Realism

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### Abstract

Traditionally, accounts of natural kinds have run the gamut from strongly conventionalist to strongly realist views. Recently, however, there has been a significant shift toward more conventionalist-sounding positions, even (perhaps especially) among philosophers interested in scientific classification. The impetus for this is a trend toward making anthropocentric features of categories, namely, capacities to facilitate human epistemic (and other) interests via inductive inference, central to an account of kinds. I argue that taking these features seriously is both defensible and compatible with conventionalism, but not compatible with a traditional realism about kinds specifically. Moreover, hopes of achieving compatibility by revising and extending kind realism – into what I call ‘hyperrealism’ – face an insuperable dilemma. The news for realists is not all bad, however: though kind realism proves untenable, closely associated realisms underlying the objectivity of kind discourse may be viable nonetheless.

### Keywords

natural kinds • conventionalism • constructivism • deflationism • realism • hyperrealism • naturalness • scientific realism

### 1. A traditional framework for thinking about natural kinds

So much has been said about the idea of natural kinds – the ancient notion that the world is inhabited by natural categories of things – that one might now expect the broad outline of coherent versions of this idea to be largely transparent. I will argue in what follows, however, that this is not entirely so, at least concerning the more specific idea of *realism* about natural kinds. It is arguable that the idea of natural kind realism has become less transparent in recent decades. My aim in this paper is to untangle what I take to be some confusion here and, in the process, describe and assess what prospects remain for realism about kinds specifically, that is, for realism about putative kind categories themselves. Discussions of realism in this context have been susceptible to confusion in part because contrasting views of kinds all tend to involve realism about *something*, and this something is often conflated, inappropriately, with kind categories, or so I will suggest.

As a first pass, the notion of natural kinds is usually spelled out in terms of groups of entities (e.g., objects, events, processes) whose members have some property or properties in common. Different views of kinds elaborate this basic idea in a number of different ways, seeking to answer different questions and with different conceptions of the relevant terms of art. With this in mind,

and so as not to get lost in the thicket before we dig in, let me begin by restricting the focus and clarifying my own use of some key terminology. The primary connotations of realism are compatible (I believe) with different positions regarding many other debates about kinds. For example, given the first pass at kinds sketched above in terms of shared properties: some hold that these properties are intrinsic, others that they may also be extrinsic; some think that they comprise essences (i.e., they are individually necessary and jointly sufficient for kindhood), others that variable clusters of properties suffice; some dispute whether kinds are particulars or sets of particulars or universals (and if universals, whether simple or complex or both). Leaving all of these details to one side, my focus here is the bigger-picture, foundational question of what it means to be a realist about kinds, and whether the traditional conception of this view is defensible.

Tackling this foundational question requires an engagement with both metaphysical and epistemological issues, which in turn requires some terminological clarification. Traditionally and generically, ‘realism’ denotes a belief in the mind-independent existence of something. A detailed treatment of this idea exceeds my aims here, but a rough characterization will serve for present purposes: to say that something exists mind independently is to say that its existence does not depend on its being thought to exist. On this understanding, some of what are commonly labelled ‘social kinds’ or ‘human kinds’ (e.g., groups whose members share social or psychological properties) might well seem, *prima facie*, to exist mind independently, though not all (e.g., money, the existence of which *qua* money depends on its being conceived as such). Similarly, at least some of what are commonly regarded as artifacts – birds’ nests, genetically modified organisms, especially heavy elements, novel chemical compounds, etc. – whose coming *into* existence may depend on thought in the form of intentions and acts of creation, might well seem to exist in a mind-independent way once created. There is much to debate in confronting finer-grained controversies engendered by these sorts of examples, with consequences for finer-grained elaborations of mind independence, but the basic idea of existing independently of being thought to exist is all that will be needed here. Realism about kinds is thus the view that kinds themselves – the relevant categories<sup>1</sup> – exist independently of being thought to exist.

Granted, there are other ways one might proceed, but also significant reasons to doubt that they are compelling. For instance, taking issue with my characterization of mind-independent existence, one might regard as mind dependent any kind involving human minds or thoughts

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<sup>1</sup> Cf. Bird & Tobin (2018), who clarify the notion of realism about natural kinds in terms of the existence of kinds specifically as ‘a special sort of entity in our ontology’.

*simpliciter*.<sup>2</sup> However, this seems clearly to mistake the relevant sense of mind independence. The existence of mental properties, for example, may depend on the existence of minds, but presumably, given that minds exist, the existence of many or most mental properties (whatever they may be) does not depend on whether or how we think about them. It is the latter sense of mind independence that is relevant to realism, and even human minds may have mind-independent properties in this sense. *Prima facie*, kinds defined in terms of such properties would thus seem appropriate candidates, at least, for realism as it is traditionally conceived. In any case, none of the arguments to follow will hang on any more precise stipulations regarding mind independence, or the outcomes of finer-grained debates involving such stipulations.

What I have just identified as a traditional understanding of realism immediately gives shape to a traditional framework for thinking about kind realism, and its denial. The mind-*dependent* existence of something entails that its being thought to exist is a necessary condition of its existence; in other words, the relevant thinking is constitutive of the existence of the kind. Let us call views that take natural kinds to exist mind dependently thus construed *conventionalist*. Historically, views of natural kinds may be seen as populating a spectrum from strongly conventionalist views at one extreme, to strongly realist views at the other. The term ‘subjective’ is often applied to kinds in connection with conventionalism and ‘objective’ used likewise in connection with realism. I will simply take these terms to be synonymous for ‘mind dependent’ and ‘mind independent’, respectively.

As a final clarification, it is worth noting that the term ‘natural’ in ‘natural kind’ is itself ambiguous. In much writing about kinds, ‘natural’ is taken to be elliptical for ‘mind independent’ or ‘objective’, and thus as indicative of something amenable to realism. On the other hand, it is not unusual for conventionalists to use the term ‘natural kind’, not in conjunction with realism exclusively, but merely as a name for those categories whose status as mind independent or dependent is subject to philosophical consideration. In this use, the term ‘natural’ carries no implication of being conducive to realism. It is merely a label for the topic under discussion – the categories we use to classify, taxonomize, and so on. While it is generally clear from the context which of these uses is intended, to avoid any possible confusion here I will simply use the term ‘kind’ henceforth and consider the notion of naturalness separately when it arises.

In section 2, I examine the idea that epistemic success – more specifically, the success of various forms of inductive inference – is properly, intimately connected to theorizing about kinds. I

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<sup>2</sup> See Ereshefsky 2018, pp. 845-846, for discussion and references. Cf. Slater 2013, p. 22; Franklin-Hall 2015, pp. 927-928; and Khalidi 2013, sections 4.5 and 6.5.

will suggest that this is so for both conventionalism and realism, though for different reasons, and defend the idea that inductive success is a general marker of genuine kindhood against some recent objections. In section 3, I scrutinize the nature of this connection more precisely for conventionalism, setting the stage for a parallel exercise with respect to realism in section 4. I argue that by focusing attention on the connection between kinds and induction and in taking it seriously, an untenable aspect of earlier approaches to realism is illuminated. The upshot of this for realism has been muddled: views that call themselves 'realist' but not in the manner of traditional realism, leaving the status of realism about kinds specifically somewhat confused, or views that simply lapse into conventionalism. One may attempt to revise traditional realism in favor of what I will call 'hyperrealism', discussed in section 5. Hyperrealism, however, faces a fatal dilemma concerning naturalness. In section 6 I conclude by reflecting on where this leaves the prospect of realism.

## 2. Inductive virtues as indicators of genuine kindhood

What is the motivation for entertaining the possibility that there are kinds in the first place? Different accounts offer differing motivations, but one commonly cited element is the idea of accounting for the epistemic success that investigating and reasoning about the world in terms of certain categories affords.<sup>3</sup> This is why, as noted earlier, the question of kind realism is one whose assessment involves both metaphysical and epistemological issues. The metaphysical dimension is apparent immediately in the opposition between realism and conventionalism and the corresponding task, on any given version of these approaches, of spelling out how exactly it incorporates the notion of mind independence or dependence. The epistemological dimension is less transparent but nevertheless inextricable. The fact that kinds are posited to account for epistemic success ultimately places constraints on what kinds are taken to be, because the epistemic success that some categories afford and others do not amounts to a repository of empirical data for thinking about the nature of kinds.

As an analogy, consider how *scientific* realism is generally held to have both metaphysical and epistemological dimensions – the metaphysical dimension concerning the mind-independent existence of various things described by our best scientific theories (often couched in others terms, such as the approximate truth or successful reference of those descriptions), and the

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<sup>3</sup> This asserts the centrality of epistemic interests but does not preclude, of course, the relevance and importance of non-epistemic interests to thinking about kinds. Often the former are the means by which we hope to serve the latter, as well as practical and pragmatic interests.

epistemological dimension implicit in the appeal to ‘our best theories’. Our best theories, scientific realists and antirealists agree, are our most successful theories: those that afford the most accurate and reliable predictions, retrodictions, generalizations, and explanations. Two points are helpful here in the analogy to kinds. First, all of the activities associated with successful science listed above are outputs of, or underwritten by, inductive reasoning. Second, both realists and antirealists about science take this as a datum; their accounts of what we should *believe* in scientific contexts can be viewed as ways of parsing and explaining this inductive success. Data regarding the relative success of different theories is an input for both realist and antirealist theorizing about science, resulting in different outputs.

Realism and conventionalism about kinds parallel these features of realism and antirealism about science. The inductive success afforded by certain categories is a datum that one may wish to explain. In debates between scientific realists and antirealists, the former sometimes think of this in terms of a ‘miracle argument’, or more generally as something akin to a transcendental argument. In other words, some scientific realists argue that the best explanation of the success of a theory – perhaps the only good or non-miraculous explanation, if not quite a necessary precondition – is the mind-independent existence of whatever is putatively described by that theory. Scientific antirealists counter with rival accounts of success. Similarly, and traditionally, realists about kinds explain inductive success in terms of our having carved, in the manner of an epistemic samurai, at nature’s own joints, to invoke the Platonic metaphor. Conventionalists about kinds explain success differently, in terms of categories that are merely useful in connection with our various inductive purposes. In their different ways, both take inductive success to be a standard marker or indicator of genuine kindhood (but see footnote 3). Taking success in human epistemic pursuits seriously is thus relevant to theorizing about kinds whatever position one takes in the traditional range of positions mapped out by conventionalism and realism.

I have belabored this point about the central role of inductive success in theorizing about kinds because it is crucial to what follows, but the idea that there is some such connection has not generally been controversial. Exploring conceptual linkages between kinds and induction is a theme that appears from antiquity to the present (see Hacking 2007 for a historical sweep). In the immediate background of contemporary discussions, Hilary Kornblith (1993, p. 7) contended that ‘The causal structure of the world as exhibited in natural kinds...provides the natural ground of inductive inference’, and Richard Boyd (1999, p. 146) suggested that ‘It is a truism that the philosophical theory of natural kinds is about how classificatory schemes come to contribute to the epistemic reliability of inductive and explanatory practices.’ More recently, P.D. Magnus (2012,

chapter 1) constructs an impressive list of eleven different ideas associated with kinds historically, but the most widely accepted one – and the only one (apart from two more controversial ideas motivating his own particular view) he finds to be sufficiently well motivated to inform our theorizing about them – is ‘the induction assumption’.<sup>4</sup>

All of this said, there is at least some recent resistance to the induction assumption based on examining our modern conception of what was considered, in ancient times, an exemplary case of kinds: biological taxa. Marc Ereshefsky and Thomas Reydon (2015, pp. 977-978) associate the claim that kinds are groups of things that support inductive inferences with the idea that members of a kind share a significant number of relevant properties (I will return to this idea in section 5), which then underwrites inductive practices such as prediction and generalization. The thought, presumably, is that it is because of this substantial sharing that we are often successful in forming expectations about one member of a kind on the basis of knowledge of another. However, two of the most prominent approaches to classifying taxa in contemporary biology – Cladism and Evolutionary Taxonomy – regard them as historical lineages of organisms, each descended from a common ancestor, and over long enough periods of time the properties of organisms at different time slices along a lineage may differ significantly.

Furthermore, to make matters worse for the inductivist, on these undeniably important approaches to biological taxonomy, it is often the case that when a population of organisms branches off from its parent population (they might be separated, for example, as a result of a weather event or volcanic activity), the organisms in the parent species and the new species will share a substantial number of biologically important properties. And though they have now been re-classified as two different species, this substantial sharing of properties may continue for a significant period of time. From this Ereshefsky and Reydon (p. 978, footnote 4) conclude that not all scientific classification is linked to induction, as opposed to different aims. Moreover, ‘to limit natural kinds to those kinds that feature in successful inferential practices...is an *a priori* approach to natural kinds that does not do justice to the epistemic practices of scientists’.

This skepticism about induction, however, is unfounded on both counts. Regarding the first charge, that inductive success is immaterial to theorizing about kinds in at least some cases, crucial weight is borne by the suggestion that ‘different aims’ may be served instead. In the case of Cladism and Evolutionary Taxonomy, ‘the aim...is to classify distinct branches on the Tree of Life’ (p. 977).

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<sup>4</sup> Magnus 2012, p. 8: ‘A central assumption about natural kinds – the canonical assumption – is that you can make inductive inferences about them. ... This is shared so widely that any reasonable account of natural kinds must vindicate it.’

But to what ends? Biological taxonomy is not stamp collecting. It serves inductive success. The point of demarcating on the basis of lineages is not to identify branches on a tree for its own sake and stop there, but rather to identify groups of organisms that are evolutionarily significant: ones that are subject, as collectives over time, to biological processes described in terms of parameters including selection, adaptation, and genetic drift. Investigating and illuminating all of this involves inductive reasoning in the service of retrodictions and evolutionary explanations regarding those kinds. These categories of organisms thus facilitate biologically important, inductive inferences.

Perhaps what Ereshefsky and Reydon have in mind in their critique is a particular *form* of induction. 'Induction', after all, is a term of art. At one extreme, one might use it to refer very specifically and exclusively to enumerative induction; at another extreme, it may refer to any non-deductive or ampliative inference. What is appropriate in this context, however, is neither extreme, but rather a focus on inductive reasoning that is directly relevant to the presumed value of theorizing about the relevant kinds as guides to learning about the world. On this basis, it is difficult to see how the meaning of 'induction' could be restricted such that species, as historical lineages, do not facilitate scientifically motivated inductive success. Take the members of a species, *S*, to share the property of descent from a common ancestor, *A*. The predicate 'descended from *A*' is inductively projectible. It is central to inductive investigations of relations between members of *S*, between *S* and other species, and between the members of different species. These relations are key to understanding evolutionary phenomena, and by investigating them we gain insight into, and form expectations of, the relevant kinds and their members. Is it plausible to exclude this from the scope of what counts as inductive success? The fact that some intrinsic properties of members of *S* may change over time, or may be shared across species at a time, hardly undermines inferences that are integral to learning about species categories in evolutionary biology. To exclude these inferences would be to operate with a strangely impoverished notion of induction.<sup>5</sup>

What about Ereshefsky and Reydon's second worry, that thinking of kinds as categories 'that feature in successful inferential practices' is *a priori*? Well, clearly it is, in one sense; but in this sense any account of kinds is bound to be. A moment ago, I described the very idea that there *are* kinds as the upshot of something akin to a miracle argument or a transcendental argument. Kinds

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<sup>5</sup> See Khalidi forthcoming on 'etiological kinds', 'whose members share a...causal origin, history, or trajectory' rather than intrinsic properties, and yet serve retrodictive and explanatory purposes involving ancestral relations and causal processes. Also, arguably, though Boyd (1999, 2010) takes kind members to share property clusters that remain largely stable via causal mechanisms (despite possible variance over time), he too operates with a broader conception of inductive success, commonly adverting to 'inductive and explanatory success' or 'inductive/explanatory success'. Causal explanations depend, of course, on inductive inferences establishing the relevant causal relationships.

are posited to help explain inductive success. *Ex hypothesi*, it would be incredible if our inductive practices were so successful and yet not tracking genuine categories; or perhaps the existence of such categories is a highly intuitive or credible precondition for inductive success. But even if one were to contend instead that kinds are posited to explain some other feature of (say) scientific practice – either way – this sort of theorizing is part of the metaphysics of science, where subject matters are not in any very strict sense *a posteriori*. This is merely to say that a theory of kinds is a philosophical theory. And in any case, given the structure of a miracle argument or a transcendental argument, a link between kinds and induction cannot be considered *a priori in toto*. Kindhood, after all, is posited to help explain the *empirical data* of inductive success, and as noted above, these same data inform how we think about kinds.

Having explored and defended the traditional idea that inductive success is reasonably considered a general marker of kindhood, let me return now to the thought that conventionalists and realists offer contrasting diagnoses of how exactly this success is realized. Here the mind-dependent, mind-independent distinction looms large. In order to see why, as I will argue, realism about kinds has fallen on hard times, it will be helpful first to consider how conventionalism connects kinds and induction. This will serve as a prelude to seeing how recent articulations of realism flirt with or collapse into conventionalism.

### 3. Conventionalism regarding our knowledge of the world

The primary moral of the following, brief attention to conventionalism is that even non-realist views of kinds are often and perhaps typically realist about something, just not about kinds themselves – an observation that will ultimately pay dividends for thinking about what a defensible realism in the vicinity of kinds can amount to, if anything. For the moment, recall that the distinction between conventionalism and realism is, at its core, a distinction concerning the dependence or lack thereof of kind categories on a particular sort of mental state or activity: conventionalism holds that these categories exist in virtue of our thinking that they do, and realism demurs. These are general formulas for two broad families of views, allowing for more specific versions within each. Let me illustrate this first in connection with conventionalism.

A useful way of elaborating the traditional notion of a mind-dependent kind is in terms of two central connotations of this idea, the denial of which is a central feature of traditional realism. Let me label these connotations ‘constructivism’ and ‘deflationism’. It is because there are different ways of constructing and thus deflating kinds that mind dependence takes different forms.

Constructivism is that aspect of conventionalist views according to which what *makes* a group a kind is the fact that we recognize it as comprising a genuine category, thereby *constructing* its kindhood. In this way, our holding something to be a kind is constitutive of its kindhood. Deflation is an immediate consequence of construction. Deflationists about *x* are typically antirealists regarding the way *x* has been (perhaps traditionally) characterized – that is, in a realist way. For example, deflationists about truth are antirealists about truth conceived as a property of things such as propositions or beliefs. They hold that traditional, realist understandings of truth are mistaken or misleading; they should be replaced by a view that *recasts* realist understandings into something (putatively) less metaphysically hefty or weighty.

As an illustration of this sort of construction and concomitant deflation, consider Thomas Kuhn's (1970/1962) historicist interpretation of the nature of scientific knowledge. On Kuhn's view, not merely scientific knowledge but the world itself, during any period of relative stability in a scientific community, is (in part) constituted by sets of shared relations between ideas – about symbolic generalizations, metaphysics, values, problem-solving exemplars, etc. These matrices of commitments are constructed and held collectively by communities, which imbue them with a certain status, amounting to a construction of the world (pp. 111, 121, 150). Anything resembling a traditional realist understanding of scientific ontology, involving descriptions of and reference to mind-independent entities, is thus deflated into sets of historically contingent relations of ideas. Similarly – hence the identification of these views as members of a broader family *qua* kinds – sociologists of scientific knowledge often recast realist ontology into socioeconomic and political statuses and relations, and some following in the logical empiricist and pragmatist traditions recast it in terms of utility-driven choices of linguistic frameworks.<sup>6</sup>

What all of these versions of conventionalism have in common is a neo-Kantian kernel. One way of exemplifying this is in terms of a maximally general sort of realism about the existence of an external reality: there is a world out there, it exists independently of us, but it is epistemically hubristic to imagine that we can describe it *as it is*, noumenally. Successful epistemic practices are correlated with this mind-independent reality in *some* way, such that our categories work well for scientific or other purposes, but that is all we can say about the noumena. Another version cleaves to the idea that our inability to describe the world as it is in itself is not a matter of epistemic humility but rather stems from the fact that the very notion of a world independent of constructive conceptions is incoherent, which rules out any sort of realism traditionally construed. Either way,

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<sup>6</sup> For a diverse range of influential takes on conventionalism, see Goodman 1975, Rorty 1980, and Putnam 1983.

the generality of both of these versions of conventionalism entails a conventionalism about kinds: we can say nothing about the noumena; *a fortiori*, we can say nothing about noumenal kinds. Crucially, however, given our more specific focus here on kinds, we may add to this landscape of conventionalist possibilities a more selective, third option: a conventionalism about kinds specifically (perhaps *inter alia*), combined with a realism about certain other aspects of reality.<sup>7</sup>

Whichever of these versions of kind conventionalism one adopts, one may of course describe the phenomenal world making up our empirical reality in anthropomorphic ways with respect to kinds, and even successfully so far as induction is concerned. What one cannot or should not do is assert anything ontologically definitive about ostensibly noumenal kinds in virtue of which our inductive practices are successful. It is simply our thinking that a category is genuine, ideally supported by a substantial or otherwise significant degree of inductive success, that makes it a kind.

Once again, an analogy to debates about scientific realism may be helpful, this time in illustrating how a deflationary attitude toward one thing may result in a recasting that embodies a different sort of realism altogether. In response to skeptical worries about unobservable entities described by scientific theories, John Worrall (2007) argues that scientific realists should simply endorse the Ramsey sentence structure of our best theories instead. To form the Ramsey sentence of a theory, we substitute its terms for putative unobservables with existentially quantified predicate variables, and voilà, the skepticism-fueling content has been displaced, allowing realists to focus on the relational structure of the theory instead. But note: in the process, the realism at issue has shifted profoundly. What *was* a realism about unobservable entities is recast into something rather different. The variables need not refer in any determinate way. One might say that the world, about which one is a realist, is just such that the relations expressed in the Ramsey sentence obtain, and that this accounts for whatever (inductive) success is associated with our best theories. Similarly, a conventionalist about kinds says that what realists regard as mind-independent kinds should be recast. Perhaps the world is simply such that our claims about certain categories prove successful, or perhaps realism about some other aspects of the world underwrite this success. Either way, it is our recognition of the categories that makes them kinds.

Let me extract two thoughts from this brief overview of conventionalism. First, as in the case of realism, conventionalism is compatible with taking inductive success to be a general marker of kindhood. It is just that on the latter view, this indicator reveals nothing substantial (or nothing at all) about kindhood itself – the existence of a category – that would qualify as mind independent,

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<sup>7</sup> After concluding my argument against kind realism in section 5, section 6 will suggest this combined option as the only possibility remaining for those inclined toward a realist discourse of kinds.

owing to its constructivism and associated deflationism. Second, leaving aside the question of whether Worrall's position is really a form of scientific realism, the analogy intimated by this question is nonetheless suggestive. I will return to it in section 6, where I consider whether there is any position that is both defensible and sufficiently realist about kinds specifically to merit the label. Just as Worrall attempts to weaken traditional formulations of scientific realism in reply to skeptical concerns, there is strong motivation among kind realists to weaken traditional forms of kind realism, and it will be helpful in what follows to retain the thought that realism regarding the existence of a mind-independent world, or certain aspects of the world such as particulars, properties, causal relations, laws, etc., does not by itself amount to a realism about *kinds*.

#### 4. Updating traditional realism: ambiguity and collapse

I have elaborated the central tenet of conventionalism, the mind dependence of kinds, in terms of two main connotations, constructivism and deflationism. Realism and the mind independence of kinds may also be elaborated in terms of two main connotations: the denial of both constructivism and deflationism. It is unsurprising, perhaps, that on reflection, mind independence is most obviously characterized in this negative way, for although the assertion that a kind exists independently of its being thought to exist is a substantial metaphysical claim, it is not easy to expand on it with a more detailed, positive characterization that also succeeds in explaining the intimate connection between kinds and inductive success. I will focus on this contention shortly (in section 5), but to set the stage, let us move forward with the working characterization according to which realism about kinds is conceived as diametrically opposed to conventionalism in terms of the principal connotations noted above.

Here I aim to motivate the idea that saying something more about the mind-independent nature of kinds is forced upon realists as soon as they attempt to square the metaphysical and epistemological dimensions of their realism – that is, mind independence and inductive success. In arguing for this, I will cite a number of recently developed views, and should emphasize at the outset that it is not entirely clear whether any of them is, in fact, intended to be compatible with kind realism as I have described it, traditionally; some are clearly not so intended. What *is* clear is that all of their authors take themselves to be presenting views that are *in some way* realist, even if it is not always transparent whether the realism at issue attaches to kind categories specifically, to something else, or to both. Furthermore, for all I say in what follows, they may be coherent views. My aim is simply to suggest that these in-some-way-realist or possibly-kind-realist-compatible

views are either (1) ambiguous *qua* realism about kinds themselves, or (2) conventionalist, the surface descriptions of these positions notwithstanding.

Among a number of now largely abandoned ideas associated with the realist tradition of theorizing about kinds, one in particular has suffered greatly in recent decades: the idea that kinds form a unique, hierarchical system of categories with strict subsumption, according to which 'if any two kinds overlap, then one must be subsumed under the other as a subkind' (Tobin 2010, p. 179). This portrait of a monistic kind structure of the world has now been widely surrendered, not least because of the difficulty of making sense of it in the context of the sciences – presumably an exemplary set of investigations for revealing kinds – where what we commonly find are not unique hierarchical systems, but rather different, co-existing systems whose categories often crosscut one another, violating the condition of strict subsumption and suggesting a pluralistic portrait of kind structure instead. A widely discussed illustration of this is the case of biological species. Across the breadth of the field, biologists do not classify organisms into species in only one way. They taxonomize on the basis of lineages (as we have seen), but also on the basis of reproductive fertility, ecological roles, and in other ways. The consensus diagnosis of this pluralism in practice is that different taxonomic systems need not be in competition with one another, but simply better suited to pursuing different aims. Different forms of inductive success are often better achieved using different classificatory systems, even within a domain.<sup>8</sup>

Given the implausibility of the traditional realist picture of a single subsumptive classificatory system, kind realism requires an update in this respect. But what sort? If the (mind-independent) existence of kinds is to be part of an explanation of inductive success, and the success of certain scientific practices is at least part of this *explanandum*, any update to kind realism must take these practices seriously. This, however, is precisely where recent discussions have undermined prospects for realism about kinds specifically, for taking scientific-inductive success seriously has generated positions that are, I submit, either ambiguous regarding their endorsement of mind-independent kind categories, or realist about things other than (i.e., excluding) kinds. Let us focus first on possible ambiguities: descriptions of kinds that do not merely link them to scientific practice, but also flirt with the suggestion that this practice is in some way responsible for constructing the relevant kinds. As I will now illustrate, this amounts to an ambiguity between, on

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<sup>8</sup> There is abundant support for this consensus. See Kitcher 1984, Ereshefsky 1992, and Dupré 1993 for earlier work on species pluralism in biology. Khalidi 1998 and Tobin 2010 argue that unique hierarchical taxonomy with subsumption is undermined by crosscutting in the sciences more generally. Ruphy 2010 explores the variety of ways stars are classified with different predictive and explanatory goals in mind. Longino 2013 details four different approaches to studying human aggression and sexuality, each of which 'parses' causal factors in different ways.

the one hand, simply noting that our interests – aims, goals, purposes of inquiry, questions posed, answers sought – may be better served by theorizing in terms of one taxonomy rather than another (which is compatible with mind independence), and on the other hand, taking our interests to be constitutive of kindhood (which is not).

Let me label the two sides of this ambiguity. On the first hand, human thinking about kinds enters only in the acknowledgment of a process of filtration: our interests align with practices that filter out, among the various kinds and systems of kinds that exist independently of our thinking they do, the ones that we hope (and ideally) are the ones best suited to successful inductive inferences in relation to those interests. Let us call this a ‘filtering approach’ to taking scientific-inductive success seriously; our interests prompt us to triangulate on, and so facilitate the filtering of, mind-independent kinds. On the second hand, human thinking about kinds enters in the manner of a lathe: our interests align with practices that ultimately shape and thereby construct a kind or system of kinds that exists *because* our thinking about these categories hypostatizes or reifies them. Let us call this a ‘constituting approach’ to taking scientific-inductive success seriously; our interests prompt us to fashion kinds that we hope (and ideally) are well suited to successful inductive inferences made in relation to them. Some recent work that may be viewed as attempting to update the kind realist tradition gives the impression, I think, of wobbling on the border between filtering and constituting.

Consider, for example, Magnus’ (2012) account. He begins by noting that ‘different enquiries require cutting along different joints’ (p. 1). This suggests filtering – the Platonic metaphor is customarily invoked to convey the idea that kinds are mind independent – and in this spirit he later confirms that ‘whether [kinds] are there does not depend on us’ (p. 119). These remarks, however, bookend somewhat enigmatic additions: ‘It is a constraint on our account of natural kinds...that they form components of successful scientific taxonomy’ (p. 20). Now, from the point of view of filtering, this *might* seem to put the cart before the horse. The sciences are able to triangulate on certain categories *because* they exist; they do not exist *because* they figure in scientific taxonomy. Magnus’ intention here, though, seems different initially: not to say that kindhood depends on scientific theorizing and practice, but that ‘an account’ of kinds so depends – a reading compatible with my contention earlier that theorizing about kinds is not entirely *a priori*, since it is informed by the empirical data of inductive practice. That said, he then appears to shift into the mode of constituting: ‘Insofar as science is something *we* do, the natural kinds...will be things that depend on *us*’ (p. 20), as well as on the world ‘in some way’ (p. 26). Other claims might be read as conflating filtering and constituting: ‘the *natural kinds we identify* may be real *qua*

natural kinds and dependent on us *qua* our identifying' (p. 104). But if the existence of a kind depends on our identifying it as such, then it does not exist mind independently.

Again, let me emphasize that the juxtaposition of these quotations is not intended critically, but merely to illustrate the strain involved in attempting to update kind realism in a way that does justice to the role of inductive success in theorizing about kinds. Ambiguity regarding the core sticking point between traditional realism and conventionalism, namely, mind independence, is hardly a surprising consequence. Matthew Slater (2013, pp. 171-176) seems unequivocal in his rejection of traditional realism: it is a mistake, he thinks, to regard kinds as comprising an ontological category; kindhood is simply a status conferred on a category within a domain of inquiry on the basis of it serving whatever epistemic interests are present there. This relativizes kindhood to interests and investigations, which suggests constituting, but even so, a dash of ambiguity concerning realism creeps in: 'the contributions of our aims and interests play a parameter-setting role without saturating the resultant kinds with subjectivity' (pp. 171-172). Therein lies the rub. Saturation admits of degrees; mind-independent existence does not. Attempts to merge kind realism with taxonomic pluralism by melding mind independence and dependence in descriptions of kinds have produced certain ambiguities with respect to realism.

While hints of realism appear in accounts of kinds that edge toward conventionalism, some do not edge so much as straightforwardly relinquish their realist credentials regarding kinds specifically. A clear example of the latter is Boyd's (2010, p. 220) account of 'accommodation', on which kind talk is understood in terms of a meshing of taxonomic practices and causality: 'the theory of natural kinds *just is* (nothing but) the theory of how accommodation is (sometimes) achieved between our linguistic, classificatory, and inferential practices and the causal structure of the world. A natural kind is nothing (much) over and above a natural kind term together with its use in the satisfaction of accommodation demands.' Boyd elaborates this by saying that 'natural kinds are social constructions'; 'In a certain sense they are mind, interest, and project dependent.' As noted earlier, claims such as these are slogans for conventionalism. They satisfy the general formula of neo-Kantian constructivism, according to which kinds are *joint* features of the world and our minds. Granted, many implementations of this formula allow for the existence of a mind-independent world in itself, but this does not alter the fact that any view on which the existence of something is partially constituted by our thinking that it exists is a form of constructivism – which is, recall, a principal connotation of conventionalism.

Boyd (2010, p. 221) is keen to avoid this diagnosis and rejects the suspicion that accommodation is comparable to a neo-Kantian constructivism à la Kuhn, on the basis that 'human

conceptual and inferential practices must be accommodated to the causal structures of the phenomena under study, not *vice versa*'; 'human social practices make no non-causal contribution to causal properties and relations in the world'. But this suggests only that his notion of accommodation is not well described by a particular interpretation of Kuhn, not that it is realist about kinds. Realism about various things in relation to causation such as causal properties, causal relations, and causal structures, is simply *not the same thing as*, nor does it require, realism about kind categories. Causation is often analyzed, for instance, as a relation between events or facts, or as a process, but none of these broad approaches to the metaphysics of causation *entails* realism with respect to kinds.

Similarly, Reydon (2016, p. 60), while taking a clear stand on the question of filtering versus constituting – 'kinds are *made* by us, rather than simply *found* in nature' – nevertheless asserts that this should be acceptable to kind realists. On his 'co-creation model', 'both nature and we – as those who do the classifying – fundamentally contribute to the creation of kinds' (p. 70); kinds are 'co-determined by aspects of the state of affairs in nature as well as by background assumptions and decisions by investigators' (p. 59). Once again, however, a realism about aspects of states of affairs does not entail a realism about kinds unless kinds themselves are counted among the relevant (mind-independent) aspects. Once one goes the route of kind constructivism, even if some of the component materials out of which kinds are constructed are mind independent, realism regarding the existence of the categories themselves has been deflated.

It is fair, perhaps, to wonder now whether this is merely a terminological dispute: does it concern nothing more than a disagreement about how to define 'realism about kinds'? I do not think so. Having noted that understanding 'realism' in terms of mind-independent existence reflects a deeply entrenched, historical tradition of use, my concern here is not to preserve tradition; it is to investigate whether kind realism thus widely understood is viable. The views I have discussed above are by no means exhaustive of recent thinking that may appear ambiguous in this light, or that amount to conventionalism. They are, however, representative of a trend in which the label 'realism' has been applied loosely where kinds are concerned – so much so that on closer examination, though they may be viewed (in at least some cases) as attempts to update the realist tradition of theorizing about kinds so as to give due weight to inductive success, they cannot be seen (clearly or at all) as remaining *within* that tradition, as understood in terms of its most central commitments, to the mind-independent existence of kinds and a rejection of constructivism and deflationism. Let us move on now to consider what prospects may yet survive for kind realism on a stricter adherence to these commitments.

## 5. Hyperrealism: bridled versus unbridled promiscuity

If the idea of a mind-independent existence for kinds is to be adopted straightforwardly rather than finessed, the filtering metaphor described in the previous section will have to be married successfully to the taxonomic pluralism we find inherent in inductive success. As per realism, filtering is a process whereby inductive practices triangulate on mind-independent categories: kinds that exist independently of our interests and scientific disciplines are discerned and selected, often via painstaking investigation and trial and error over time, from among other (sometimes cross-cutting) categories of things that may likewise exist mind independently. The traditional, kind-realist conviction that kinds are “out there” is intended to do justice to this process of filtering through empirical inquiry. Rather than move in the direction of conventionalism, the stalwart realist holds that there are many crosscutting categories of entities that exist independently of being thought to exist. Since this amounts to an extended application of the core commitment of mind independence to a much broader class of categories than was once endorsed by realists on the now outmoded conception of a unique, subsumptive taxonomy of kinds, let us call this position ‘hyperrealism’.

Though hyperrealism is clearly an extension of an earlier incarnation of realism, the very idea of it raises a question about its *proper* extent. This might be narrowly construed as a metaphysical question with a correspondingly narrow answer: the proper extent of hyperrealism is limited to those kinds that are, in fact, mind independent. It is the epistemological dimension of realism that is at issue here, though. Taking scientific-inductive success to be indicative of mind-independent kinds in practice does not by itself amount to clear guidance regarding what forms of inductive success should be considered thus indicative in principle. Actual scientific practice comprises a negligible proportion of possible scientific practice, which may (for all we know) involve different forms of inductive inference and standards of success. Furthermore, one may wonder whether inductive success is properly considered more likely indicative of kindhood when it occurs in the sciences as opposed to other contexts, many of which involve inquiry that is also inductively successful and sometimes highly systematic. Here we find dramatically conflicting intuitions about the proper scope of hyperrealism, and the position faces a serious challenge. I will now suggest that any attempt to determine the proper extent of the view faces a dilemma, with conventionalism looming on one side and incoherence on the other.

Let me frame this argument with an example introduced into recent discussions by John Dupré (1993, pp. 29-30). Dupré's 'promiscuous realism' was in part a reaction to the idea that only categories delimited by the sciences are genuine kinds. His basic contention was that while the sciences may well track kinds, there is ultimately no defensible reason to think that scientific taxonomy is unique in this respect. If the folk category 'fish' includes whales, and this category so configured supports inductive projections that are relevant to the folk (say, fisherfolk), it is then arguably a genuine kind, even if scientists classify whales, which are mammals, in a separate category from fish, which are not. Folk and scientific categories are often examples of cross-cutting kinds. One might worry, of course, that in our modern scientific era this example does not pump the intuitions it would have earlier. Perhaps the folk concept 'fish' now excludes whales for most people; this aspect of scientific taxonomy may now have been absorbed into broader linguistic practice. In that case, we might pump the relevant intuitions simply by imagining a time before this was so, or by helping ourselves to any number of contemporary examples.<sup>9</sup>

Here we must finally confront the issue of "naturalness". Earlier, to avoid confusion, I promised to use the term 'kind' *sans* qualification until it was necessary to do otherwise, because '*natural* kind' is used by realists and conventionalists alike but in different ways. Now, however, let us focus on possible invocations of naturalness as a notion to which hyperrealists might appeal in order to delimit the proper extent of their position. Recall that 'natural', in the realist context of use, routinely functions as a synonym for 'objective' or 'mind independent'. Clearly, though, if this synonymy exhausts the meaning of the term, naturalness cannot function as an independent criterion for recognizing what is mind independent, because on this usage, to say that something is natural is to say nothing more than that it is mind independent. In order that naturalness function as a helpful *indicator* of mind independence, it must be something that we can apprehend in its own right. This is the crux of the difficulty for hyperrealism. Attempts to specify the proper extent of the view all end up, one way or another, appealing to the idea that some categories are natural and others are not; some even claim that categories can be (comparatively) more or less natural. But lacking an understanding of naturalness that affords such judgments, these appeals have no probative force, and as I will now contend, there is no such understanding.

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<sup>9</sup> Ludwig (2017) considers cases from ethnobiology, the study of how organisms are understood in different cultures. E.g., it is common in indigenous taxonomies to classify bats together with birds, *contra* biological systematics. This is hardly surprising given a multitude of inductive inferences underwritten by their commonalities: 'both typically have wings, a light bone structure, a keeled sternum, a similar size range, streamlined bodies, high metabolism, migratory behaviour, similar natural enemies, a fruit- and insect-based diet, and they both typically fly, disperse seeds in the environment, reduce local insect biomass, and so on' (p. 193).

Presumably, in order to discern the presence or absence of naturalness here, we should have some way of evaluating and/or tracking categories from a “nature’s-eye” point of view. This is where conflicting intuitions surface regarding what such a vantage point would reveal, but the challenge for hyperrealism is even more severe than this might suggest. The fatal difficulty is that we lack an understanding of naturalness that is capable of doing the work for which it is required: namely, to specify an indicator of mind independence *that is more discriminating than (mere) inductive success*. Any candidate for genuine kindhood will be associated with some such success, whether within or outwith the sciences, in actuality or possibility, etc. Thus, if naturalness is to be called upon to establish the proper extent of hyperrealism, it must be a feature of only some such categories; that is, a feature of some but not all categories that facilitate inductive success (or that would do so under appropriate investigational circumstances). What might this be?

Consider first the possibility that even without giving a qualitative description of naturalness, we might simply track the truly natural kinds by taking the sciences to be exclusive arbiters of genuine kindhood. If such deference were defensible, this might serve as a basis for putting a bridle on promiscuity – in just the way Dupré tried to resist. However, given that inductive success is sufficient to nominate a candidate kind, and lacking a description of naturalness with which to explain why scientific categories are natural, and why extra-scientific ones are not, it is difficult to see how a blanket deference to science could be warranted. Perhaps the hyperrealist could take inspiration from Ereshefsky and Reydon’s (2015, p. 984) claim that it would be wrong to think that the terms ‘fish’ and ‘Mammalia’ (for instance) both refer to natural kinds, because folk biology and scientific biology are competing taxonomic programs, and the latter is preferable because ‘The category fish is not part of any current progressive classificatory program.’ But this will not help, for at least two reasons. First, since the folk category and the scientific category support different sorts of inductive inferences, and thus (unsurprisingly) serve different aims, it is a mistake to think of them as being in competition. Second, while the question of whether a *classificatory* program is progressive or degenerating, to recruit Imre Lakatos’ celebrated terminology, may be apropos of *scientific* research programs (as Lakatos intended), it cuts no ice here. That distinction was never intended to set limits on what is *natural*.<sup>10</sup>

Let us broaden our thinking about which categories exemplify naturalness, then, beyond a blanket deference to the sciences. In the absence of a compelling description of what naturalness is,

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<sup>10</sup> For the makings of another, possible challenge to the idea of constraining hyperrealism by deferring to science, see Conix 2019, pp. 31-33, who argues that given the way classifications (e.g., of species) may vary according to local aims and norms, and interpretations and operationalizations of shared norms, scientific taxonomy itself places no constraints on the extent of hyperrealism.

however, the task of delimiting these categories remains elusive. Muhammad Ali Khalidi (2013, p. 62) suggests that while placing whales in the category of fish may serve certain inductive purposes, 'not all purposes are created equal'. Does this mean anything from a nature's eye point of view? It is difficult to see why or how the purposes of evolutionary systematists are superior *qua naturalness* to the purposes of fisherfolk or eco-tourists. Khalidi further asserts that some purposes are *epistemically* superior with respect to desiderata such as prediction and explanation, and that 'our best epistemic practices aim to uncover the divisions that exist in nature' (p. 63). As a strategy for delimiting what is natural, though, this fares no better than deferring to science, because it is highly suspect to imagine that there is any absolute sense in which judgments of comparative epistemic goodness ('superiority') can be made. The aims inherent in an investigative context determine what inductive inferences and knowledge are best *there* – and this varies between contexts, whether in the sciences or otherwise. There is no such thing as an absolute or context-free measure of epistemic superiority, and to assume otherwise merely threatens to beg the question.

Other attempts to identify categories imbued with naturalness indirectly – that is, in the absence of an account of naturalness itself – are likewise unconvincing. One strategy is to appeal to intuitive notions of significance or importance: it is obvious on intuitive grounds, some claim, that some categories represent significant or important collections of things and others do not. If this were so, one might then define the proper extent of hyperrealism in terms of categories that, in virtue of comprising significant or important collections, are judged natural. This seems desperate, though, for significance and importance are paradigm examples of anthropocentric qualities. Moreover, judgments about what is or is not significant or important are also context-relative, not absolute. Imagine adding all of the now unforeseen contexts of future investigation (let alone those of all *possible* interest) to contexts of current interest, whether in the sciences or beyond; the notion that what appears important at any given time or place is an indicator of the limits of what is natural seems all the more contrived. Similar skepticism awaits possible variations on the theme of importance. A view often credited to Mill (1846, Part I, chapter 7, section 4), for instance, is that what makes a kind natural is the sharing of *large numbers* of significant properties. Why this should delimit what is natural, however, is opaque.<sup>11</sup>

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<sup>11</sup> The view is also implausible. The members of many canonical scientific kinds (e.g., subatomic particles, chemical elements) share only a few distinctive properties. How many is sufficient for naturalness? I cannot discuss further variations here but will flag one more: some construe 'importance' as 'informativeness', which has been elaborated in information theory. Ross & Ladyman (2007, pp. 196-238) build on Dennett's (1991) idea of 'real patterns' to suggest that data patterns satisfying a condition of maximum compressibility, or compactness, represent kinds. But again, varying degrees of compactness are optimal for different inductive purposes, and one may wonder why compactness should delimit what is natural.

The upshot of this discussion is a dilemma for hyperrealism. The motivation for the position is compelling: once we appreciate the depth of connection between positing kinds and inductive success, scientific and other classificatory practices inevitably drive kind realism in a more pluralistic direction than was once the norm. This realization, however, immediately raises a serious question regarding whether there are any constraints at all, beyond inductive success, on what is properly recognized as a kind as per realism (cf. Lemeire 2018). There are two options here for hyperrealism. As we have seen, one may attempt to reign it in by adducing the criterion of naturalness. However, beyond the unhelpful platitude that what is natural (in this sphere) is mind independent, articulating what naturalness *is*, precisely, has proven a bridge too far. Commonly suggested proxies for naturalness, such as scientific authority, epistemic superiority, significance, and importance, fail to demarcate what is natural – kinds delimited from a nature's eye point of view – as opposed to categories that merely reflect human preferences. To take any such proxy as determining the proper scope of hyperrealism amounts to a mere stipulation of which kinds are “real”. In other words, it is simply to adopt a convention for recognizing certain categories as genuine kinds. Thus, on this horn of the dilemma, hyperrealism collapses into conventionalism.

Alternatively, hyperrealists may bite the bullet and interpret their view as a sort of maximalism about kinds. On this interpretation, moved by our failure to characterize naturalness in any helpful way as an indicator of mind independence, one simply extends realism to any and all categories that facilitate some manner of inductive success, or that would under appropriate investigative circumstances. But this is incoherent *qua* realism, for we know that the existence of at least some inductively successful kinds is not, in fact, mind independent. Recall the example of money, the existence of which as such depends on beliefs to the effect that it *is* money. Kind realism cannot hang its hat on inductive success alone, for this would result in an extension of realism, which by definition concerns only kinds whose existence is mind independent, to kinds that are known to exist mind dependently, amounting to a *reductio*.

This is the fate of realism about kind categories – dissolution into conventionalism on the one hand, or incoherence on the other. Stipulating proxies for naturalness to serve as indicators of mind independence cannot do the work that realism requires, for they are inherently anthropocentric and assessed in ways that vary contextually. Refusing to stipulate leaves us without any restrictions on hyperrealism at all beyond inductive success, which in a world putatively inhabited by mind-dependent and mind-independent kinds alike, leaves realists conflating to two. Skewered on this dilemma, natural kind realism has run its course.

## 6. Remnants of realism: deflationism and mind independence

In conclusion, let me comment briefly on the implications of the untenability of realism about kinds specifically for realism more generally, and for the objectivity of kind talk. This is important not least because, in what may now seem a countervailing spirit, there is clearly potential here for significant consolation on the part of former kind realists who are now bereft. From a more general realist perspective, it is hardly surprising that many have strained to retain some form of realism in relation to kind categories, even while theorizing about them has rendered this prospect increasingly fraught. Conventionalism is itself controversial – the neo-Kantian kernel can be hard to digest – and many find this a strong motivation for clinging to realism and its promise of knowledge of a mind-independent world. The demise of kind realism, however, does not entail that propositions regarding kinds cannot be true or false in just the way that realists crave: objectively, such that truth values do not depend in any substantial way on contributions our thinking may make to constituting the world; in other words, truth values may be determined mind independently. This follows from the simple fact that while kinds do not themselves exist mind independently, the truthmakers of claims regarding them may well exist in just this way. It is simply the case that kind categories are not among those truthmakers. In hopes of knowledge of a mind-independent world, many who have struggled to hold onto realism in connection with kinds have simply misapplied the label 'realism'.

In adverting to truthmakers here I do not mean to invoke any heavy-duty semantic machinery. Consider some analogies. Mereological nihilism is the contention that from the point of view of ontology, only simples (entities lacking proper parts) exist. Assuming that tables are (ultimately) made up of some such components, there are, strictly speaking, no tables, though there are certainly collections of the relevant components 'arranged table-wise'. This does not, of course, preclude mind-independent truths or falsehoods regarding the heights of tables, their masses, and so on, and this is so even though, on this view, tables themselves do not exist. Similarly, one need not be a realist about numbers to hold that in the base ten number system, ' $2 + 2 = 4$ ' is objectively true. Analogously, one may hold that while there are no mind-independent kind categories, there are nevertheless claims about kinds that are true or false in a mind-independent way. This would be to say that there are mind-independent aspects of the world in virtue of which claims about kinds, which do not themselves exist mind independently, are objectively true or false. Particulars and relations of similarity; co-occurrences, clusters, correlations, and distributions of properties in

spacetime; causal relations, mechanisms, and structures... All of these things may exist mind independently, underwriting the objective truth or falsity of propositions regarding kinds.

As we have seen, some attempts to cling to realism about kinds end up identifying what is (mind-independently) real with other things instead, and this conflation of kind realism with other realisms underlying kind discourse is now so widespread that it often goes unnoticed.<sup>12</sup> Obscuring this, however, only serves to obscure the upshot of millennia of theorizing about kinds. In order that they themselves be entities whose existence is amenable to realism, kinds must exist mind independently over and above the existence of causal relations, clusters of properties, etc., about which one may be a realist on independent grounds. Kinds do not exist this way, as an ontological category in their own right, but we may have objective knowledge of them nonetheless, and this leaves much to articulate regarding conceptions of properties, causation, and so on, that are central to practices of classification. Hence the consolation for erstwhile kind realists: mind-independent knowledge of the world in relation to kinds may be a coherent notion even if the mind-independent existence of kinds is not; and there is important work here still for realists to do.

This also clarifies how a rejection of kind realism may fit into the landscapes of broader realist doctrines such as scientific realism.<sup>13</sup> Earlier I maintained that the principal connotations of kind conventionalism are constructivism and deflationism. Having just revisited the latter, let me conclude with the former. The relevant notion of construction, recall, is that of making a collection of entities into a kind by recognizing it as such; this recognition is constitutive of its status as a genuine category. Clearly, there are *some* forms of constructivism on which there can be no knowledge of *any* mind-independent features of the world – in a thoroughgoing Kantian spirit, one might hold that the phenomenal world we know is an inextricable mix of the noumenal and the mental. It is nonetheless open to a different sort of constructivist about kinds to hold that some aspects of the world are *not* so constructed, and in this way vindicate as objective or mind independent the truth or falsity of scientific, indigenous, and everyday claims about kinds. I suspect that for many who were once kind realists but should be no longer, this will be realism enough.

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<sup>12</sup> Though not always: see Ruphy 2010, pp. 117-118, on realism about taxonomic features versus categories; Bird 2018, pp. 1398-1407, on 'weak' versus 'strong' realism about kinds, the former asserting only the existence of natural divisions and the latter that kinds are part of the ontology of the world; and Brzovic (manuscript), pp. 3-7, on realism about what comprises kinds versus kinds themselves.

<sup>13</sup> For an account how a deflationary, pluralistic approach to kinds may be integrated with scientific realism, see Chakravarty 2007, chapter 6. For a radically contrasting view see Ellis 2009, chapter 3.

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