PHILOSOPHIA

PHILOSOPHICAL QUARTERLY OF ISRAEL

UNIVERSALS AND PROPERTY INSTANCES: THE ALPHABET OF BEING (ARISTOTELIAN SOCIETY SERIES VOL. 15)
by John Bacon, Oxford, UK & Cambridge, USA: Blackwell, 1995.
159 pages

Mathematical formulations of our more ambitious ideas usually mark advances in theory. Formalizations of theory afford the only precise means of tracking the logical implications of our ideas and so the only chance of checking their consistency, either consistency among themselves or their mutual consistency with observation statements directly relating "the way the world is." Precision enough to track logical implication can also make manifest undreamt of content in our original ideas and reveal limitations in their intuitive appeal. Where inconsistency does not threaten, either internally or with "the way the world is," we score our theories on overall simplicity and scope. A fruit of formalization is that it guides Occam's razor to a more clean shave. This result is especially helpful in cases of our more metaphysical speculation where inconsistency with observation sentences does not threaten. Ever since Frege and Russell, the use of mathematical techniques to limn our metaphysical views, apprise us of our ontological commitments, and allow us to appraise our ontological excesses has resulted in much of the best so-called "analytic" philosophy. In this spirit, John Bacon's work formalizing an ambitious answer to the perennial problem of universals marks an advance in current theory.

There has been of late a rough set of ideas, in the air and in print championed under the hideous name of "trope theory," promising a fresh approach to universals. The idea is that the ancient distinction between substance and attribute has led to intractable problems. Socrates is wise, but so are Plato and Aristotle. The language used here seems to attribute a common property, wisdom, to these different individuals. The picture

this language suggests is a world made up of two kinds of things: individuals or particulars, and properties or universals. Our metaphysics seems latent in our language, yet serious questions linger. What is the relation between universals and their particular instances? To say particulars *instantiate* universals is merely to label the relation not to explain it. If a universal is an entity, then how does a universal differ from an individual or particular? To say that particulars *exist* while universals *subsist* is simply to name the mystery. What is a particular substance considered independently of its properties? On the other hand, what is a universal? "Trope theory" attempts to avoid these problems altogether by resisting the metaphysics implicit in ordinary language. At the most basic level of analysis, the world is not made up of particulars and universals; the basic constituents of the world are *tropes*: "A trope then is a thing's having a property or the property as localized to that thing, or several things standing in relation or the relation of just those things" (pp. 1-2), so begins Bacon's alphabet of being. For example, the particular instances of Socrates' being wise, London's being in England, and Dante's loving Beatrice are all tropes. Bacon says, "I take tropes to be metaphysically prior to objects and their properties and relations" (p. 8), though at times he seems to qualify this strong thesis: "...the theory of tropes developed here exhibits them as basic: not as demonstrably ontologically basic or simple but as architectonic building blocks" (p. 2).

The basic evidence for the metaphysical priority of tropes, however, is not "architectonic" but epistemological. Bacon begins, "When we know something about the world, what sort of thing is it that we know? What sort of thing is London's being in England? It isn't just an individual object or a property relation. It's a *relating of* two things, a particularized relation" (p. 1); later he continues, "What we come up against in the world are propertied and related objects, instantiated universals, wholes with both a particular side and a universal side; in a word, tropes. I take this epistemic priority to reflect a metaphysical priority" (p. 4). He ends the book reiterating this case for tropes: "Finally, recall the epistemological point made at the outset: tropes are what we're acquainted with first of all. Without embracing phenomenalism, we can appreciate

the virtue of founding our metaphysic on the sort of things we directly know. In the end, the way of being and the way of knowing crisscross and shore each other up" (p. 132). The mention of phenomenalism inadvertently raises a red flag Many people have defended the idea that sensations or sense data are epistemically basic, but no one would contend so uncontentiously that sensations or sense data are metaphysically basic. Why do tropes make the move from knowing to being any easier? Any answer to this question is far from obvious, yet Bacon does not bother to provide any helpful hints.

All this talk of tropes and particularized properties may sound a bit precious. From the above quotations it seems that one cannot even speak of tropes without presupposing talk of particulars and properties. Tropes have "both a particular side and a universal side," they are a "relating of two things," and all examples of tropes are expressed by nominalizations, such as "Socrates' being wise," which presuppose subject-predicate sentences such as "Socrates is wise." In fact, one cannot begin to state what a trope is – a particularized property – without presupposing the conceptual distinction between particulars and properties. Does this conceptual dependence not stymie any claim to metaphysical priority from the start? Bacon thinks not.

> ...ordinary language seems to favor a substance-attribute view of reality. It has no simple names of tropes. On reflection, this is not surprising. Words are useful as marking similarities and repetitions. A trope, just as such, never repeats. In adopting a trope ontology, we systematically resist the bias of ordinary language. While we shall occasionally refer to tropes by nominalized sentences, this carries no presumption in favor of a subject-predicate-like structure in reality (p. 5)

The suggested argument is odd. Socrates as such, just as surely as any trope, never repeats, unfortunately for philosophy; but ordinary language is replete with names for individuals. The reason ordinary language fails to name tropes must lie deeper than the fact that tropes are instances, a fact they share with individuals of all kinds, objects and events.

Moreover, ordinary language is generous enough for us to baptize any instances we recognize with whatever names we fancy. If the subject-predicate structure of ordinary language is to prove misleading, the trope theorist must treat tropes as unstructured instances and then construct objects and properties upon this *sui generis* foundation. The case for tropes is their simplicity and scope. Despite his few nods to epistemic priority, Bacon's contribution is a formal theory of tropes that provides a means for determining their simplicity and scope.

For Bacon, since metaphysics posits "the general kinds of structure that are best suited to explain the world," metaphysics falls "under the general theory of structure, which is set theory" (p. 10). Bacon says, "Together with logic and mathematics, I consider set theory to be the most fundamental part of philosophy" (*Ibid.*). Bacon's idea is to take tropes as basic and use set theory to construct the complexity of the world from these *atoms* ("If an item is basic to others, while none is more basic, that item is an ultimate metaphysical constituent, an *atom*" p. 12.) Bacon's atomism is not nominalistic however; universals are no less real than the atoms from which they are constructed. Atoms are controversial, but Bacon suggests, "... we do have reason to believe in atoms: the methodological canon of explanatory simplicity . . ." (*Ibid.*).

"[T]he versatility of starting with tropes as our fundamental category" (p. 7) is manifest in the fact that ". . . both universals and particulars will be constructed out of tropes, as well as possible worlds" (pp. 6-7). A possible world is simply a set of tropes. A state of affairs is a set of possible worlds, with tropes corresponding to a "simple" state of affairs – the set of possible worlds where it exists. A fact is an obtaining state of affairs. "Helen's beauty is a fact, an existing trope" (p. 6). A non-existent trope is one which exists only in some non-actual possible world. Individuals, properties, and relations are bundles of tropes. "A *bundle* is a similarity class – a maximal set of tropes all similar to each other" (p. 13). Individuals and properties are the bundles created by the similarity relations of *concurrence I and likeness H*. So, a property or universal is a set of like tropes, an individual a set of concurrent tropes "[T]he property of wisdom is the set of all wisdoms:

wisdom = {Socrates' wisdom, Aristotle's wisdom, . . .}" (p. 14).

This move seems to beg the question against those who favor universals as basic. What makes these "wisdoms"? What makes them relevantly similar? They must be similar with respect to wisdom, but how does that concession not presuppose universals? The individual Socrates is the equivalence class of tropes that concur at Socrates:

Socrates = {Socrates' wisdom, Socrates' teaching, Socrates being snub-nosed...}.

Instantiation is explicated in terms of "*overlapping*, non-empty intersection, symbolized here as 'O'" (pp. 22-3).

"Socrates is wise in w iff Socrates $\leftrightarrow$ wisdom O w" (p. 23).

For any bundle X, a universal or individual, " ... to say that X *exists* in world w is to say X overlaps w: EwX iff X O w" (p. 27).

If trope theory were this simple, it would be simple indeed, but complications arise. Besides simple monotropes like Socrates' wisdom complex polytropes such as Dante's loving Beatrice abound. These immediately complicate the simple bundle picture of individuals. Concurrence cannot be a simple relation among tropes; concurrence relativized to argument -places becomes *aspectual concurrence I^i*. Othello's trusting Iago concurs in its first aspect with Othello's loving Desdemona but it concurs in its second aspect with Cassio's trusting Iago. With Ii, individuals are now redefined not as bundles but as "a whole set of i-bundles for $i = 1, 2 ...$" (p. 33). But there is a further complication when individuals are no longer bundles but bundle-chains. Bacon writes, "In order for i-concurrence to be a similarity relation between tropes, it must assign each trope to an i-bundle. What about trope with fewer than i-aspects?" (p 32). The solution, which he calls *right-inflation*, is to "let each less than i-adic trope belong to all i-bundles" (p. 33). We may never have dreamed that ordinary individuals have such a contrived structure, but treating individuals as bundle-chains of tropes presupposes more metaphysical whimsy. An individual is determined by the aspectual concurrence of tropes, but how is this decided? Othello's trusting Iago is said to concur in its first aspect with

Othello's loving Desdemona, but Iago's being trusted by Othello fails to concur with either. How does one decide whether reality favors the active or the passive voice? Bacon admits, "It's obviously arbitrary" (p. 33)! That formal trope theory forces individuals to be such capricious creations may be disheartening to those individuals who are not trope theorists.

A further complication involves countenancing second-level tropes or hypertropes, such as, Dante's loving Beatrice being like Desdemona's loving Othello. this hypertrope is supposed to be metaphysically prior to the likeness relation, which would be a set of such tropes, and "this trope might be taken as metaphysically prior to the first-level trope, Dante's loving Beatrice, which in turn is prior to Dante, Beatrice, and love" (p. 9).

An infinite regress seems to be looming here that is perfectly analogous to one suspected to accompany universals. Bacon, however, shows that this regress is avoidable, "no higher level is needed but a third or a fourth" (p. 10). He construct what he calls a *trope cascade*:

> Assume one third-level relation between third-level tropes, concurrence. It partitions third-level tropes into bundles, the second-level tropes (hypertropes). Also, we split the third-level tropes into two disjoint subclasses, which will serve as the second-level relations of concurrence and likeness. As applied to hypertropes (by intersection, i.e instantiation), these yield bundles corresponding to our original tropes and metarelations (p. 73).

The details he provides here are sketchy, but the trope cascade is all for nought because "… the relations generated by the trope cascade are by no means the only ones we need"(p. 74). Bacon admits that this fancy footwork "…doesn't inspire metaphysical confidence" (*Ibid.*), and is reluctant to accept the "… trope cascade as manifesting how things are" (p. 76). "It has the flavor of a trick" (*Ibid.*), says Bacon, and one wonders with this admission how trope theory is better off in this respect than a full-blown theory of universals.

The theory began by treating tropes as atoms and constructing possible

worlds as sets of these. This move makes "… trope-identity prior to world-identity" (p. 5), and this forces concurrence to be an internal relation, not varying from world to world and identity to be necessary. To avoid this unhappy result "… a possible world becomes a set of tropes together with a concurrence relation" (p. 59), with the field of this relation being the set of all tropes. Actually, in order to accommodate compound properties, individuals have to be replaced by their power set and a possible world by its *singleton set*, the set of the singletons of its member tropes. Incorporating this 'slight' change, Bacon writes, "Modelings with contingent or external concurrence will be called 'world-line modelings,' since they put values of world-line functions (individual concepts) in place of substantial individuals in worlds" (p.60). World-line modelings treat possible worlds as a set of tropes and a concurrence relation and individuals as world-lines determined by a set of all functions from all possible worlds to a possible world. This complicates further the picture of individuals but shows that a formal theory of tropes can provide a semantics for any system of model logic worth wanting. This result is nice, but trope theory has come a long way from its simple intuition that individuals are simple sets of tropes. Sets of tropes they still are, but simplicity has vanished. The mathematical complications recapitulate some metaphysical contrivance.

From this point, Bacon extends his theory to interesting accounts of time, belief, causation, and duty, but these fruits cost complication. Time demands a third metarelation on tropes, besides concurrence and likeness, the relation of temporal precedence. Belief is analyzed as a relation between an individual and a proposition, but this involves a doxastic accessibility relation that is less clear than belief and possible worlds now consist of a set of tropes, a concurrence relation, and a likeness relation. Causal relata are tropes or states of affairs constructed from tropes, though tropes play no role in the analysis, which involves the bizarre suggestion that disjunctions can be causes. Duty is defined in terms of good by introducing a new primitive relation between tropes "inherently better than," though trope theory sheds no light on this mysterious relation.

Set theory provides the formal structure for building the world out of tropes. Unfortunately for metaphysics, the structures of set theory are notoriously pliable. It is easy to show that the structures that are built taking tropes as atoms are isomorphic to structures taking universals or individuals as atoms. Bacon's formalization is an advance in trope theory, but it struggles only to a tie: the ". . . ontological approaches reviewed here are all in a sense equivalent" (p. 87); ". . . the criterion of ontological economy is inconclusive. . ." (*Ibid.*). An important achievement of Bacon's work is to show how much philosiphy our formal theories leave undecided. Where theories tie, most of us may continue to prefer one in which individuals are less a metaphysical contrivance than they are in trope theory.

The idea of formalizing trope theory seems to face a deeper dilemma from the start. Either tropes are structured or unstructured. If they are structured "with both a particular side and a universal side," then they presuppose the conceptual distinction between universals and particulars and it is no surprise that set theory can construct universals and particulars from this basis. If they are unstructured, then set theory becomes powerless to collect these to represent particulars and universals. This shortcoming is not due to a lack in ordinary language. Let $p, q, r...$ represent unstructured tropes. Concurrence and likeness will never bundle these together – they nowhere concur and are in no relevant way alike; they have no structure. The gain in simplicity is a total loss in scope. A formal theory of tropes is only as rich in universals and particulars as the tropes it assumes.

TIMOTHY CLEVELAND

NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO
U.S.A
E-MAIL: TCLEVELA@NMSU.EDU