

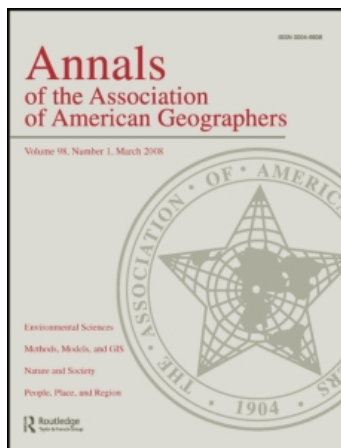
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Unlawful Relations and Verbal Inflation

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There are two rather basic questions to ask about Tobler's first law of geography. Is it a law? Is it true? These might at first appear to be one question expressed in two ways, but they are not. When I ask if Tobler's law is, indeed, a law, I am asking whether it, as a statement, has the form and character of those statements we normally recognize as laws. Lacking this form, Tobler's law cannot be a law, even if its propositions are true. A statement that takes the semantic form of a law is not, by this fact alone, entitled to the status of law, however. We must also, of course, be justified in believing that the generalizations of the law are true.

I will argue that the answer to both of these basic questions is no. Before embarking on the argument I would like to make it clear that I am not criticizing Waldo Tobler, or even the statement published in 1970. Taken in context, with allowances made for a degree of irony to which all of us are at times tempted, the statement we now know as Tobler's First Law of Geography is unexceptionable. Lifted from that context, stripped of irony, and enshrined as a motto of the discipline, the statement becomes something altogether different. It becomes a majestic statement to which I, at least, take rather strong exception.

I think we can say with relative certainty that Tobler's statement would never have enjoyed this fame, or suffered this scrutiny, if he hadn't used the word law. This is what the statement says in its excised, unironical, majestic form. The "First Law of Geography" is that "everything is related to everything else, but near things are more related than distant things" (Tobler 1970). Had Tobler written, for instance, that "geographers assume that everything is related to everything else, and believe that, as a rule, near things are more related than distant things," I am sure I would not be writing this article today. No, the beacon that draws us to this statement is the word law.

Any suggestion that there are geographic laws excites strong feelings in geography, a discipline whose incomplete transformation into a nomothetic science in the 1960s has been further complicated by more recent

imports of antifoundationalism, post-structuralism, and the critical insights of science studies. Geographers who believe that geography is properly understood as "the science concerned with the formulation of laws governing the spatial distribution of certain features on the surface of the earth" are excited and encouraged when a geographic law is propounded (Schaefer 1953). At the same time, skepticism, or simple disbelief, is to be expected from those who, for reasons old or new, reject the very idea of verifiable laws in geography (Finch 1939; Jones 1956; Harris 1991).

I mention this background to the discussion of geographic laws for two reasons. First, in modern academic discourse one is expected to position one's self up front, so as to make biases clear and avoid pretense of impartiality. I must consequently state that I believe that nomological generalizations about human behavior are very rare because a significant part of human behavior is a response to reasons, not causes (Flew 1995). This belief is grounded in a moral intuition that is, so far as I can see, beyond validation or falsification (Scruton 1995, 286). The significance of this position, and the second reason for mentioning it, is that it accounts for the fact that I will not be arguing, like an antifoundationalist, against the very idea of laws of human behavior, but will insist on a rather strict definition of the word *law*. It is, I think, interesting and notable that, as a rule, geographers who believe themselves engaged in a nomothetic science accept more relaxed definitions of words like *science* and *law* than do geographers, such as I, who believe they are engaged in no such enterprise.

Is It a Law?

A comprehensive philosophy of scientific laws is beyond the scope of this article and the ability of this author, but enough can be said in a short space to answer the question that stands as a heading to this section. There are three requirements that must be met if a statement is to be accepted as a law: it must be universal,

synthetic, and necessary. Perhaps there are other requirements, but statements that fail to meet this standard are something other than laws, and it is misleading to refer to them as such.

Strictly speaking, a law is a universal generalization that has been validated (Harvey 1969, 100–06). Laws normally take the form “if *x*, then *y*,” with the relation between *x* and *y* being one of causality or coincidence (Johnson 1985, 15). Such statements cover all members of a class, no exceptions. “All men must die” is, therefore, a law. Given this character, a law-like statement must consist of a *subject* that is not singular (which is to say that it must be a type, kind, or class of thing), and a *predicate* that is valid for every member of the class denoted by the subject. It would not be law-like to state, for instance, that most men must die, or that, as a rule, men die. Either all men die or the predicate “must die” has to be attached to a different subject, a subject that denotes the actual class for which the phrase “must die” is universally true.

Geographers sometimes seek to escape the requirement of universality with the argument that the complexity of the real world introduces a degree of uncertainty that justifies us in accepting laws that are not universally true (Goodchild 1992). Even if geographers who rely on this argument were more careful in setting limits to this uncertainty, I cannot see why such statements should be taken as laws. What they are saying is that, predicate *y* is true of class *x*, except in those cases when it isn't. It's as if they had said, all men must die, excepting those who for complicated reasons don't.

What is wanted in such cases is to narrow the subject, so that, for instance, we denote the kind of men who must die. When doing this we must take care that the predicate concept is not contained in the subject concept. In other words, we must be sure that our statement is synthetic rather than analytic (Scruton 1995, 158). It would not be law-like, for example, to state the mortal men must die, since the predicate concept of necessary death is contained in the subject concept of mortal men. This statement is, in fact, a definition of the subject “mortal men,” a necessary and self-evident truth and not a nomothetic statement. The form of the statement is “if *x*, then *x*,” since the relation between subject and predicate is a relation of identity, not causality or coincidence. Law-like statements must be synthetic and combine two different concepts. To give some geographical examples, it would be true, but not law-like, to state that distant places are farther away than near places, or that subsistence farmers do not produce a surplus. I would demote Jefferson's Law of the Primate City on this score. This was stated as follows: “A coun-

try's leading city is always disproportionately large and exceptionally expressive of national capacity and feeling” (Jefferson 1939). The predicate concept of unusual size and expressiveness is clearly contained in the subject concept of leading city. What else could “leading city” mean?

The subject and predicate of a law must denote two concepts that are always related, and there must, as a third requirement, be good reason to believe that this relation is internal. This is to say that the relation must result from something in the nature of the subject and the nature of the predicate and not from sheer accident. The statement “everything in this room belongs to me” is not a law, even when entirely true, because it describes an external relation or accidental generalization. It just happens to be that way, for the time being. Geographers call such statements empirical generalizations and will sometimes accept them as a law (Holt-Jensen 1980, 45, 54). This is almost certainly a mistake since it serves to naturalize a relation that is in fact accidental or contingent and to present as law what is in fact ideology (Duncan and Duncan 1988). We may agree with the generalization that African countries are poor but would quite rightly object to any suggestion that it is a law that the subject of African countries is internally related to the predicate of poverty. One benefit of the radical critique of positivism in geography was surely exposure of the political mischief that comes of treating accidental generalizations as nomothetic.

Tobler's law consists of two propositions. The first I shall call the metaphysical proposition. This may be stated thus: if a thing, then related to all other things. I will argue that this is true only when taken as an analytic statement about things, and that it is otherwise necessarily false. The second proposition I shall call the geographical proposition. This may be stated thus: if a near thing, then more related than more distant things. I will argue that this is not universally or necessarily true, but is at best true only occasionally, and then very often accidentally.

The Metaphysical Proposition

The metaphysical proposition of Tobler's law states that “everything is related to everything else.” This proposition is true in more than one sense, but none of the senses in which it is true are the senses Tobler presumably intended. The metaphysical proposition's meaning depends most of all on the operative definition of the word related, and this word can be used in several senses.

Relation in its broadest sense includes among its meanings a set of terms that describe what we might call nonrelations. Disconnection is not a form of connection, but the absence of any relation is itself a form of relation. If I say, for instance, that I am reading a book unrelated to my research, I am in fact describing the relation of that book to my research. The relation is one of irrelevance. If Robert tells you that there is no relationship between himself and Allyson, he is in fact describing the relation that does obtain between the two of them: a relation of mutual indifference. Since separation is a form of relation in the broadest sense of that word, Tobler's metaphysical proposition might be taken to say that everything is either connected to, or disconnected from, everything else. This is necessarily true; but it is not, I suppose, what Tobler is trying to say.

Everything is also related to everything else in a comparative sense. For instance, I am related to the Crab Nebulae in the sense that I am smaller than it is. Indeed, I have this sort of relation with every thing in the universe. Some things are larger than I am, some are smaller, and some are the same size. This example has to do with the property of extension in space, but the same might be said of any property, primary or secondary. The comparative relation of greatest interest to geographers is expressed by spatial prepositions that describe the relative position of an item in a set of objects. All objects in any set are related in this way, even if in no other way. For instance, in a list of three unrelated terms, the terms have at the very least the ordinal, spatial relation denoted by first, second, and last. In a pile of miscellaneous things we may describe the relative positions of these things with phrases such as on top, at the bottom, inside of, outside of. It is impossible to escape the geometric relations denoted by such prepositions. Even the non-materialist who believes there are things "outside" time and space denotes the relation of metaphorical outsideness. The same may be said of time. The paper session in which these ideas were first presented stood in comparative relation to every event in the history of the universe, since some happened before the paper session, others after, and others at the same time.

Having relationships such as these is inescapable. The property of relationship necessarily follows from the nature of a thing. What is more, these relationships do indeed extend to everything in the set we denote as things. The metaphysical proposition of Tobler's law is therefore true, at least so far as these senses are concerned, but this truth does not make it a law. This is because, taken in this sense, the statement "every thing is related to everything else" is analytic. The predicate concept of relatedness is contained in the subject concept of thing.

The Metaphysical Proposition Again

But none of this is what Tobler meant by "related," we may suppose. What, exactly, did he mean? Presumably, his law maintains not only that every thing is related to everything else in these nominal ways, but that every thing is also, one cannot help but to say, "really related" to everything else. If a man tells me he yearns for a relationship with a particular woman, he will not be satisfied to learn that he already has a relationship to her, indeed several relationships. He is smaller than her, north of her, older than her, etc. He wants a relationship *with* her; he wants a real relationship.

A relationship with someone differs from a relationship to someone in that the former is effective, and we recognize a similar difference in types of relationships between things. The word *relate* implies that something is communicated, so that the state of one thing somehow accounts for, explains, or corresponds with the state the other. The orbit of the earth is in this way related to the mass of the sun. My performance on the examination is in this way related to the time I spent studying for it. The crime rate in a neighborhood is in this way related to the unemployment rate.

Now this effective, explanatory form of relation is in its very nature particular. When I say that something is unrelated to something else, I mean unrelated in this effective sense. The crime rate, for instance, is not related to everything, or even everything in the neighborhood, but only to certain things that stimulate or inhibit crime. The crime rate is not, let us say, related to the bedrock underneath the neighborhood. Of course, the bedrock is related to the crime rate in a comparative sense, since the bedrock is, say, older than the crime rate, and less often the subject of newspaper articles; but it is almost certainly unrelated in an effective sense. Indeed, the purpose of statistics, as I understand it, is to rule out such relations, and to show that every thing is indeed not effectively related to everything else.

This presents a problem for the argument that Tobler's law describes effective relations. If it did, the law would have to be understood as saying that everything explains, accounts for, or corresponds with everything else. There is, in other words, between all things that special sort of relation known as causality.

Now you may be itching to make a distinction between direct and indirect relations. The bedrock might be related the economy of the city in which the neighborhood is located, and this economy might be related to the present unemployment rate, and the unemployment rate might be related to the crime rate. Such indirect relations might be present in particular cases, but

such cases would not warrant the universal claim that everything contributes in some small, obscure, and deviously indirect way to everything else. Indeed I submit that there are things between which no causal relation does or could exist.

This is because a thing is finite in time and space. It may be true that matter cannot be created or destroyed, but things with the distinct properties that make them the things they are certainly are created and destroyed. Now a thing—let's take the example of a shoe—can have direct effects on other things only so long as it remains that thing. Once it disintegrates or evolves into something else, and loses the formal character of a shoe, it can no longer have the direct effects it did when it was a shoe. At some point, for instance, the material composing my shoe will lose the form of a shoe and with it the capability to cause blisters on my toe. The blisters that it did cause when it was a shoe may continue to have indirect effects on my life, and the lives of others, but the erstwhile shoe can cause no new blisters. The indirect effects of this blister-causing shoe might, let us say for the sake of argument, *eventually* touch every aspect of my life in some small way. A sore foot might cause me to miss a job interview, a missed job interview might cause me to be unemployed, unemployment might cause me to undertake a cross-country move, and so on, and so forth. We all know what Benjamin Franklin said could happen for want of a three-penny nail. And perhaps, given time, the effects of my blister-blighted life might in infinite, infinitesimal ways touch upon everything, and the long-forgotten shoe would, at that point, be effectively related to everything else. Note, however, the time it would take for these ramifying relations to diffuse to everything. Even if they did, ultimately, spread to connect with everything else, that everything else would consist of a different set of things than it did when my shoe was still in existence, still giving me blisters. And all of these things that were destroyed before the ramifying indirect effects of my blistering shoe could reach them are things with which my shoe did not stand in any direct or indirect causal relation. If the metaphysical proposition of Tobler's law is referring to causal relations, it is, therefore, necessarily false.

The Geographical Proposition

It is therefore fortunate that the validity of the second, geographical proposition of Tobler's law does not depend on the validity of the metaphysical proposition. Near things may, after all, be more related than distant things, even if all things are not related in the ways or to

the extent that the metaphysical proposition maintains. So the geographical proposition still stands as a possible first law of geography. If it is to remain standing, we must show that a greater relatedness between near things is indeed found among the things of this world and that this greater relatedness is a necessary consequence of their proximity.

Turning to the first question, whether near things are indeed more related than distant things, one is immediately confronted with the question of what Tobler meant by "more related." I take him to mean affecting in a greater number of ways, and then to a higher degree. I am more related to the campfire I am sitting beside than the campfire across the lake because I sense the near fire with my eyes, ears, skin, and nostrils, rather than with eyes alone, and because the optical stimulation caused by the near fire is greater. The problem raised by this way of understanding the phrase "more related" is that, to continue with the scenario, there might be a large stone that is closer to me than either fire, but with which my effective, causal relations are few and weak.

So the proposition that near things are more related begins to unravel once we see that we are all the time in close proximity to things with which have few if any effective relations. Are you in fact more related to the junk in the glove compartment of your car than you are to relatively distant road signs and traffic that you perceive through the windshield? The proposition comes apart entirely when we consider the way in which a distant event such as the illness of a loved one bears on a person so much more heavily, controls his emotions and actions so much more effectively, than the joys and sorrows of his next door neighbor. One can easily imagine circumstances in which the campfire across the lake would absorb my attention and govern my actions, while the campfire at my side burned unnoticed. One does not have to catalogue the rise of network communities and the declining importance of propinquity to begin to doubt the greater relatedness of near things.

Now you may object that the human is an exception, with a unique ability to imagine distant people and places that permits long distance causation. Animals, and even plants, are more closely related to their immediate environment than humans are, but not necessarily to their most immediate environment. Lions are caused to hunt by the sight or smell of distant prey, while insects in the nearby grass shape their behavior only indirectly. A tree relates to the minerals in the soil that it can use, or those that can harm it, but is unrelated to the elements equally close at hand that have no effect on its well-being. Even inanimate things would seem at times to be no more related to inanimate things that

are nearest. I, for one, cannot see how the Sun is more related to the planet Mercury than it is to the Earth.

The degree of relatedness between two things is best understood as a function of properties other than their spatial proximity. Certain kinds of things relate to certain other kinds of things, as a hungry boy relates to food. With other kinds of things, they have few if any effective relations. So if the geographical proposition of Tobler's law is to stand, it must be in a diminished version. It must state that if two things are equal in every respect but their distance from a third thing, with which they are disposed to relate, the nearest of the two will be the most related to this third thing. And, of course, this is precisely the way the law is applied in gravity models, central place theory, and the principle of intervening opportunity.

The second question is whether the geographical proposition of Tobler's law, now in this diminished version, describes a necessary relationship that deserves the status of a law. At least so far as human geography is concerned, this law would build on the law of utility maximization, which strikes me as a reasonable sound (Coulter 1949). The problem is that the geographical proposition of Tobler's law, diminished version, presumes, without argument, that movement over distance is always a disutility to be minimized. This is why the closer of two otherwise identical opportunities is presumed to have greater utility. To be sure, this is often the case, especially in economic functions of the sort regional scientists like Tobler were interested in; but it is not invariably so. There are cases in which the more distant thing has greater utility simply by virtue of this greater distance. I, for instance, always park my car in the space farthest from my building, even though it has no greater utility than nearer parking spaces apart from the fact that it affords me a longer walk. The example is small, but one contrary example is all one needs to falsify a universal. Respectable persons who prefer opportunities for shameful behavior at some distance from their homes also recognize the utility of distance. The neighborhood bar is not for all people the most desirable, proximity being for them a disutility.

I accept the geographical proposition of Tobler's law as a description of what is very often the case, so that it has instrumental value as a maxim of geography. But it cannot be more than this because the spatial logic it presumes is accidental rather than necessary. This spatial logic understands distance as a source of friction, friction being a metaphor for inefficiency, cost, disutility; it sees in movement only instrumental value. We might call this the spatial logic of capitalism, not because it is exclusive to capitalism, but because there is between capitalism

and this spatial logic an internal relation. Movement through space can, however, have intrinsic value, as the great tradition of the Sunday afternoon drive illustrates. It is ideology and not science to treat this accidental generalization as a law describing the nature of reality, when it is in fact an accidental generalization about what happens to be the case, for the time being.

Conclusion

If a thing is valued and can be debased, it will be debased. This may very well be a law. Debasement is accomplished by changing the substance of a thing while preserving its appearance, this legerdemain being undertaken in the hope that the new, inferior article will be accepted at the rate of the old, superior article. The paradigmatic case is, of course, adulteration of precious metal minted into coins. When debasement is detected, or even only suspected, the value of all articles of similar appearance falls, since the spurious cannot be distinguished from the genuine. This gives rise to Gresham's law stating that bad money will drive out good. In the case of coins, this means that debasement of some coins will result in eventual debasement of all coins, the result being inflation.

Social life is very largely a matter of exchanges, and so offers many opportunities to seek temporary advantage by debasement (Lukacs 1970). Nowhere is this clearer than in the case of honorific titles, which, as de Toqueville predicted, proliferate rather than disappear under the pressure of democratic egalitarianism. The academic world offers many examples of debasement, inflation, and invention of new titles of temporarily higher value (e.g., distinguished professor). The word *law*, too, is a title. It denotes a class of statements presumed to be of high value and therefore exchanged at a high rate. A person stands to benefit if her theory is elevated to the status of a law (with her name appended in perpetuity); a discipline stands to benefit if its textbooks speak of laws; an argument stands to benefit if it is grounded in a law.

Therefore, we should not be surprised to find that there is steady pressure to relax the definition of the word *law*, which is to say, change its substance, while retaining the old title (appearance). The result is debasement. The class of statements we denote as "laws" comes to include not only nomological generalizations, but also accidental generalizations, analytic statements, rules of thumb, and statements of what is very often, or even only more often than not, the case. Predictably, bad money has driven out good. This is why universal

generalizations, or laws in the strict sense, are now sometimes denoted as “scientific laws.” The new title, no doubt temporarily, indicates and preserves their higher value. Is this sort of verbal inflation progress? Or is it just one of those rare laws of human behavior?

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