CONCEPTUAL "STRETCHING" REVISITED: ADAPTING CATEGORIES IN COMPARATIVE ANALYSIS

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When scholars extend their models and hypotheses to encompass additional cases, they commonly need to adapt their analytic categories to fit the new contexts. Giovanni Sartori's work on conceptual "traveling" and conceptual "stretching" provides helpful guidance in addressing this fundamental task of comparative analysis. Yet Sartori's framework draws upon what may be called classical categorization, which views the relation among categories in terms of a taxonomic hierarchy, with each category having clear boundaries and defining properties shared by all members. We examine the challenge to this framework presented by two types of nonclassical categories: family resemblances and radial categories. With such categories, the overly strict application of a classical framework can lead to abandoning to category prematurely or to modifying it inappropriately. We discuss solutions to these problems, using examples of how scholars have adapted their categories in comparative research on democracy and authoritarianism.

Stable concepts and a shared understanding of categories[1] are routinely viewed as a foundation of any research community. Yet ambiguity, confusion, and disputes about categories are common in the social sciences. A major source of this difficulty is the perpetual quest for generalization. As scholars seek to apply their models and hypotheses to more cases in the effort to achieve broader knowledge, they must often adapt their categories to fit new contexts. One of the most incisive treatments of this problem of adapting categories is Giovanni Sartori's (1970, 1984) work on conceptual *traveling* (the application of concepts to new cases) and conceptual *stretching* (the distortion that occurs when a concept does not fit the new cases).

This is an old debate, and it might appear that this problem of categorization has been superseded by new analytic and statistical approaches. However, this is not the case. Scholars accustomed to the language of "variables" will recognize that issues raised here are closely related to problems of establishing the validity of observation and measurement across cases. For example, analysts who have carefully derived and tested a set of hypotheses about political participation in one set of cases will commonly wish to probe the generality of their findings by examining the same hypotheses in additional cases. To do so, they must first establish that political participation has a sufficiently similar meaning in the new cases. An excessive concern with the difficulties of establishing equivalence among contexts of analysis could, of course, lead to the abandonment of the comparative enterprise altogether. The merit of Sartori's approach is that it encourages the scholar to be attentive to context, but *without* abandoning broad comparison.

In recent years, new interest in the problem of applying categories across diverse contexts has been generated by the rise of a school of comparative-historical analysis,[2] as well as by the comparative politics literature on authoritarianism and corporatism in the 1970s and on democratization in the 1980s and 1990s.[3] It is evident from these bodies of scholarship that broad comparison requires a use of categories that is sensitive to context. Further, the historical depth in many of these studies offers a useful reminder that the problem of conceptual stretching can arise not only from movement across cases but also from change over time within cases. Hence, the challenge of achieving the virtue of conceptual traveling without committing the vice of conceptual stretching remains very much with us today.

We shall examine how categories change—or should change—as they are applied to new cases. Sartori's original framework is based on the assumptions of what is sometimes called classical categorization, in which the relation among categories is understood in terms of a taxonomic hierarchy of successively more general categories (1970, 1038). Each category possesses clear boundaries and defining properties that are shared by all members and that serve to locate it in the hierarchy. Yet twentieth-century linguistic philosophy and contemporary cognitive science have presented a fundamental challenge to this understanding of categories by claiming that many types of categories do not possess these attributes (Lakoff 1987). This challenge might seem to undermine Sartori's approach. However, we show that these alternative types of categories can be treated in a way that is distinct from, yet complementary to, Sartori's perspective.

To provide a base line against which alternative perspectives on categories can be evaluated, we first review Sartori's procedure for modifying categories. We then explore the distinctive problems that arise in dealing with types of categories that do not fit the classical pattern, which is the basis of Sartori's approach. First, we examine the issues that arise with

"family resemblance" categories. This discussion suggests that Sartori's procedure can be applied too strictly, causing analysts to abandon a category prematurely when it initially does not appear to fit additional cases. We then consider what cognitive scientists call the "radial" category,[4] providing a rationale for why different types of categories (e.g., democracy, as opposed to authoritarianism) are modified in distinct ways as they are adapted to fit new cases. We conclude by suggesting new guidelines for adapting categories in the process of comparative analysis.

AVOIDING CONCEPTUAL STRETCHING: SARTORI'S FRAMEWORK

A central element in the classical view of categories, which provides the underpinning for Sartori's framework, is the understanding of *extension* and *intension* (Sartori 1970, 1041; idem. 1984, 24). The extension of a category is the set of entities in the world to which it refers. The intension is the set of meanings or attributes that define the category and determine membership.

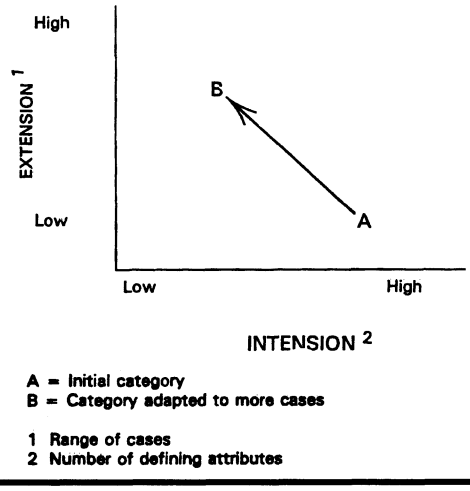
Two complementary patterns in the relation between extension and intension are of concern here, namely, the occurrence of (1) more specific categories with more limited extension and greater intension and (2) more general categories with greater extension and more limited intension. Some philosophers have held that these patterns reflect a "law of inverse variation" (Angeles 1981, 141). In a taxonomic hierarchy, these more specific and more general categories occupy subordinate and superordinate positions, with the extension of the subordinate categories contained inside the superordinate ones. The hierarchy represented by these sets of terms can be called, adapting Sartori's label, a "ladder of generality."[5]

An example will serve to illustrate these patterns. In Max Weber's famous typology, patrimonial authority is a type of traditional authority, which is one of his three overall types of authority or legitimate domination, which, in turn, is one type within the broader category of domination (1978, 212–15, 226, 231). Within each successive pair of categories, the first is subordinate, the second, superordinate. In relation to each subordinate category, the corresponding superordinate category contains a less specific meaning and covers more cases; thus, it has greater extension and less intension.

This classical understanding of categories helps address the problem of conceptual stretching. When scholars take a category developed for one set of cases and extend it to additional cases, the new cases may be sufficiently different that the category is no longer appropriate in its original form. If this problem arises, they may adapt the category by climbing the ladder of generality, thereby obeying the law of inverse variation. As they increase the extension, they reduce the intension to the degree necessary to fit the new contexts. For example, scholars engaged in a comparative study of patrimonial authority might add cases to their analysis that only marginally fit this category. To avoid conceptual stretching, they might move up the ladder of generality and refer to the larger set of cases as instances of traditional authority. This interplay between extension and intension on the ladder of generality is illustrated in Figure 1. With the categories obeying the law of inverse variation, the ladder of generality appears as a line of negative slope.[6]

FIGURE 1

The Ladder of Generality



A = Initial category
B = Category adapted to more cases

1 Range of cases
2 Number of defining attributes

In short, this framework helps researchers proceed with greater care when addressing one of the basic tasks of comparative research: the effort to achieve broader knowledge through analyzing a wider range of cases. The value of this framework merits emphasis particularly in light of skepticism, on the part of scholars committed to an "interpretive" perspective, about the possibility of achieving a viable comparative social science (Geertz 1973, 1983; MacIntyre 1971; Rabinow and Sullivan 1987; Taylor 1971; Winch 1959). Sartori's framework addresses some of the important concerns raised by this perspective, namely, that broad comparison is difficult, that political and social reality is heterogeneous, that applying a category in a given context requires detailed knowledge of that context, and that it is easy to misapply categories. The ladder of generality offers a specific procedure to address these issues. This procedure has deservedly served as a benchmark for analysts who wrestle with the problem of extending categories to new cases.

FAMILY RESEMBLANCE CATEGORIES

The application of the ladder of generality assumes the clear boundaries and defining attributes of classical categories. An exploration of family resemblance categories shows that at times, this assumption

FIGURE 2

An Iterated Generalization: The Case of Family Resemblance

Cases	True Distribution of Attributes*	Cases Included in Generalization (Extension)	Attributes Included in Generalization (Intension)
A	1 2 3 4 5	A	1 2 3 4 5
B	1 2 3 4 6	A B	1 2 3 4
C	1 2 3 5 6	A B C	1 2 3
D	1 2 4 5 6	A B C D	1 2
E	1 3 4 5 6	A B C D E	1
F	2 3 4 5 6	A B C D E F	

* All cases have five of the six attributes, and each of the six cases is missing a different attribute.

should be relaxed. Ludwig Wittgenstein's idea of family resemblance entails a principle of category membership different from that of classical categories, in that there may be no single attribute that category members all share. The label for this type of category derives from the fact that we can recognize the members of a human genetic family by observing attributes that they share to varying degrees, as contrasted to nonfamily members who may share few of them. The commonalities are quite evident, even though there may be no trait that all family members, as family members, have in common (Wittgenstein 1968, nos. 65–75; see also Canfield 1986 and Hallett 1977, 140–41, 147–48).[7]

A similar pattern often appears in the social sciences. A category, defined in a particular way, may fit a number of cases reasonably well, but on close examination it can become clear that for most cases the fit is not perfect. Nonetheless, the category captures a set of commonalities considered by the researcher to be analytically important. This pattern is found, for example, in the literature on corporatism, which generally presents a series of defining attributes, usually without the expectation that the full set of attributes would be found in every instance (Malloy 1977; Schmitter 1974). Thus, over many decades during the twentieth century, it was reasonable to characterize labor relations in Argentina, Brazil, Chile, and Mexico as corporative, despite variation in the features of corporative structuring, subsidy, and control of groups found in the four cases (Collier and Collier 1991).

What would happen if we applied Sartori's method to a family resemblance category? Let us consider a hypothetical exercise in comparative analysis. Suppose that (1) the analyst begins with a case study yielding a new category of theoretical interest initially appearing to have five defining attributes, (2) the initial case is one of six cases that share a family resemblance, (3) this family resemblance turns out to entail six shared attributes, and (4) each case possesses a different combination of only five of these. No attribute is shared by all cases.

Using this example (see Figure 2), we will examine the consequences if the analyst were to rigidly apply the ladder of generality. If the original case-study research were done on Case A, the intension of the initial category would encompass Attributes 1–5. Upon adding Case B to the analysis, other analysts might note that Attribute 5 was lacking. They could seek to avoid conceptual stretching by climbing the ladder of generality to a category that encompassed both cases (A and B) and whose intension was reduced to Attributes 1–4. Adding Case C could lead to a further step up the ladder to a still more general category that encompassed only Attributes 1–3. As can be seen in the figure, when this iterated process finally reached Case F, the final step up the ladder of generality would bring the elimination of the final trait, leaving a category with no attributes. Thus, the analyst might abandon the category prematurely. The example in Figure 2 serves as a warning that, in the course of applying a category to additional cases, it can be counterproductive to insist on eliminating those attributes not held in common by all the cases under consideration.

One way of avoiding this problem is to look at the larger set of cases simultaneously, so that the commonalities evident in Figure 2 would be recognized. Yet because every case is missing at least one attribute, a researcher accustomed to thinking in terms of classical categories might still conclude that this is a weak category that should be abandoned. A possible response would be to emphasize that the category is an analytic construct which the researcher should not expect to be a perfect description of each case. A well-known example of this kind of construct is the ideal type, of which each specific case is expected to be only a partial approximation.[8]

Some of the creative approaches to the refinement of categories in the field of comparative politics can be seen as attempts to deal with family resemblance.

Przeworski and Teune argue that in comparative research, conceptualization and measurement at times require a "system-specific" approach. They suggest, in effect, that in diverse contexts *different* attributes can be used as defining properties of the *same* category.[9] Nie, Powell, and Prewitt employ a similar perspective in comparing political participation in the United States and four other countries (1969, 377). For all the countries, their analysis focuses on four relatively standard attributes of participation. However, in analyzing a fifth attribute—membership in a political party—they observe that whereas in four of the countries it has a roughly equivalent meaning, party membership in the United States has a significantly different form and meaning. The authors conclude that in the United States, involvement in electoral campaigns reflects an equivalent form of political participation. Hence, for that country, they analyze campaign participation instead of party membership.

As in this last example, it is evident that family resemblance can sometimes be assessed by identifying attributes that are present to varying degrees in particular cases, rather than being simply present or absent. This can be accomplished by applying some form of multidimensional scaling that specifies underlying dimensions for comparing cases. Yet it is important to remember that multidimensional scaling does not eliminate the original problem of forming the concept. In the spirit of Sartori's dictum "concept formation stands prior to quantification" (1970, 1038), one must recognize that a prerequisite for such scaling is to establish what it is that is being scaled.[10]

When the analyst encounters a family resemblance pattern, two priorities must be addressed. First, in assessing the attributes empirically, one must avoid an application of the ladder of generality that is so strict as to result in the inappropriate rejection of a potentially useful category. Second, it is essential to explore the underlying analytic relationship among the attributes that constitute the family resemblance, thereby establishing the justification for retaining the category. A concern with this analytic relationship is central to the discussion of radial categories, to which we now turn.

RADIAL CATEGORIES

Another type of category that does not fit the classical pattern is the radial category, analyzed by cognitive scientists such as Lakoff (1987, chap. 6). As with family resemblance, with radial categories it is possible that two members of the category will not share all of what may be seen as the defining attributes. In contrast to the family resemblance pattern, with radial categories the overall meaning of a category is anchored in a "central subcategory," which corresponds to the "best" case, or prototype, of the category.[11] In the process of cognition, the central subcategory functions as a gestalt, in that it is constituted by a bundle of traits that are learned together, understood together, and most quickly recognized when found together. "Noncentral subcategories" are variants of the central one. They do not necessarily share defining attributes with each other but only with the central subcategory—hence the term radial, which refers to this internal structure.

One of Lakoff's ordinary-language examples of a radial category is "mother" (1987, 83–84). Here the central subcategory corresponds to an individual who, in the context of conventional gender relations in the United States, is often considered a "true" mother—that is, one who (1) is a woman, (2) contributes half the child's genetic makeup, (3) bears the child, (4) is the wife of the father, and (5) nurtures the child. The noncentral subcategories arise when the component elements are taken singly, or in sets of two or more. In this example, familiar types emerge if these roles are taken singly: "genetic mother," "birth mother," "stepmother," and "nurturing mother."

Radial categories merit attention here because they play an important role in the language of social science. For example, following Ostiguy (1993), one can view "democracy" as a radial category. Obviously, the problem of identifying the components of democracy has long been a matter of debate. For present illustrative purposes, the following partial definition will suffice.[12] We might say that the central subcategory "democracy" is constituted by elements such as (1) broad and effective participation in the process of rule, (2) limitation of state power and protection of individual rights, and (3) according to some accounts, egalitarian (or at least relatively more egalitarian) economic and social relationships. The first component taken alone might be seen as constituting the noncentral subcategory "participatory democracy," the first and second combined as constituting "liberal democracy," and the first and third combined as constituting what may be called "popular democracy."

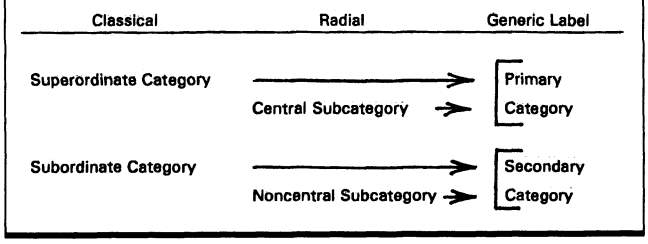
Comparing Radial and Classical Categories

The internal form of radial categories differs from that of classical categories. The variants that branch out within a radial structure such as "mother" or "democracy" might be viewed as subsets of the overall category. Yet they do not share the full complement of attributes by which we would recognize the overall category, as they do with classical categories. Rather, they *divide* them. This difference has important implications for how these two types of categories are used in comparative analysis.

Before radial and classical categories are compared further, an issue of labeling should be clarified. We have referred to the component elements of classical categories as superordinate and subordinate, whereas for radial categories we have referred to central and noncentral subcategories. For the sake of comparison, we can apply more generic labels (see Figure 3). The term *primary category* will be used to refer to the overall category, whereas *secondary category* will be used to refer to the category whose

FIGURE 3

Generic Labels for Comparing Classical and Radial Categories



meaning is derived from the primary category. Thus, "mother" and "democracy" are primary categories, and "birth mother" and "liberal democracy" are the corresponding secondary categories. In the realm of classical categorization, "authoritarianism" is a primary category, and "bureaucratic authoritarianism" is the corresponding secondary category.

The contrast between classical and radial categories may now be examined, first using Lakoff's examples of "dog," a classical category in the scheme of traditional taxonomy, and "mother," a radial category (1987, 46, 74–76). As can be seen in Figure 4, in the case of the classical category of "dog" the differentiating attributes of the secondary categories occur *in addition to* those of the primary category. By contrast, with the radial category of "mother" the differentiating attributes of the secondary categories are *contained within* the primary category.

The examples of "authoritarianism," understood as a classical category,[13] and "democracy," understood as a radial category, yield the same contrast (Figure 5). In relation to authoritarianism, the differentiating attributes of the secondary categories of "populist" and "bureaucratic" authoritarianism occur *in addition to* those of the primary category. In the case of "democracy," the differentiating attributes associated with "participatory," "liberal," and "popular" democracy are *contained within* the primary category.

This contrast between the two types of categories

FIGURE 4

Differentiation of Classical and Radial Categories

Classical Category: Dog

	Category	Components
Primary Category	Dog	A B C
Secondary Categories	Retriever	A B C D
	Sheepdog	A B C E
	Spaniel	A B C F

Note: Differentiating characteristics of secondary categories are *in addition to* those of the primary category.

A, B, and C = Hypothetical set of general attributes of dogs
D, E, and F = Hypothetical attributes that differentiate specific types of dogs

Radial Category: Mother

	Category	Components
Primary Category	Mother	A B C D E
Secondary Categories	Genetic mother	A B
	Birth mother	A C
	Nurturing mother	A D
	Stepmother	A E

Note: Differentiating characteristics of secondary categories are *contained within* the primary category.

A = Female
B = Provides 50% of genetic makeup
C = Gives birth to child
D = Provides nurturance
E = Married to father

FIGURE 5

Differentiation of Classical and Radial Categories: Examples from Regime Analysis

Classical Category: Authoritarianism

	Category	Components
Primary Category	Authoritarianism	A B
Secondary Categories	Populist Authoritarianism	A B C
	Bureaucratic Authoritarianism	A B D

Note: Differentiating characteristics of secondary categories are *in addition to* those of the primary category.

A = Limited pluralism*
B = Distinctive mentalities, not guiding ideology*
C = Substantial mobilization of working class and/or middle class
D = Alliance of military, technocrats, and transnational capital against previously mobilized popular classes

Radial Category: Democracy

	Category	Components
Primary Category	Democracy	A B C
Secondary Categories	Participatory democracy	A
	Liberal democracy	A B
	Popular democracy	A C

Note: Differentiating characteristics of secondary categories are *contained within* the primary category.

A = Effective political participation
B = Limitation of state power
C = Social and economic outcomes of relative equity

* The definition of authoritarianism employs two elements used by Linz (1975).

has a major practical consequence in terms of how we go about addressing the problem of conceptual stretching: the extension of the secondary category in radial categorization may exceed that of the primary category. Consider an example from common usage: a woman who is a birth mother might not be seen as fitting the overall category of what is understood as a "true" mother.[14] All mothers that fit the primary category (i.e., all "true" mothers) are birth mothers, but the converse is not the case. Hence, there are more birth mothers in the world than "true" mothers.

The same pattern appears with democracy. If only the extensive political participation associated with democracy is present in a given country, without protection of the rights of those who at any given time may be in a minority, many observers will conclude that it is not what they consider to be a "true" democracy. Here again, the extension of the secondary category will exceed that of the primary category, involving the same inverse relationship between extension and intension already discussed.

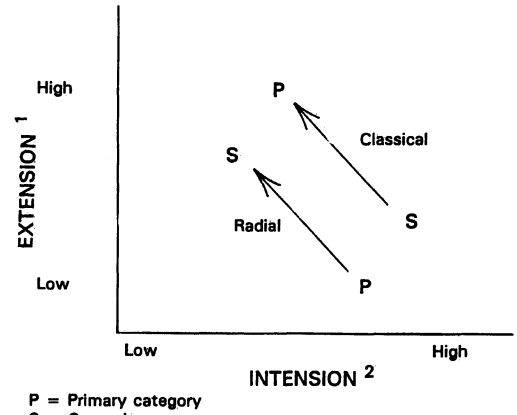
Authoritarianism Versus Democracy: Contrasting Patterns of Category Change

Let us apply these ideas to two examples of conceptual traveling. During an earlier period of wide interest in bureaucratic authoritarianism, that category was at times extended to cases that only marginally fit the original meaning (Collier 1979, 1993). Using the ladder of generality, scholars sometimes avoided this problem of conceptual stretching by shifting to the broader category of authoritarianism.

A parallel problem has arisen with recent efforts to apply the category "democracy" to new regimes in Central America, Eastern Europe, and the former Soviet Union. In some of these cases, where leaders are selected in competitive elections but where many of the institutions and practices often associated with democracy are absent, the problem of conceptual stretching may be addressed by making the more modest claim that these are, for example, "electoral democracies," thereby abandoning the implication that they are "true" democracies.

FIGURE 6

Avoiding Conceptual Stretching with Classical and Radial Categories



The contrast that emerges here must be kept in mind as scholars seek to avoid conceptual stretching in comparative research. In the case of bureaucratic authoritarianism, this undesirable outcome is avoided by moving up a ladder of generality from a secondary category to the primary category. In the case of democracy, it is avoided by moving *away* from the primary category to employ a secondary category.

Figure 6 summarizes this contrast between classical and radial categories in the framework of a diagram of extension and intension like Figure 1. As can be seen in Figure 6, with classical categories, to avoid conceptual stretching one moves from the secondary category, S, to the primary category, P, by rising up a line of negative slope like that of Figure 1. With radial categories, by contrast, to avoid conceptual stretching one moves up a parallel line, but from the primary category, P, to the secondary category, S.

Two further contrasts between radial and classical categories may be noted. First, an important difference is evident in how the formal label is modified as one moves from one level of generality to another. With both types of categories, it often (though not always) occurs that primary categories are made into secondary categories by adding an adjective. Thus, "bureaucratic authoritarianism" is a secondary category in relation to "authoritarianism," and "electoral democracy" is a secondary category in relation to "democracy." This similarity helps to underline a crucial contrast in how we move to a broader set of cases with classical, as opposed to radial, categories. In the example of the classical category "bureaucratic authoritarianism," this is done by *dropping* an adjective. By contrast, with the radial category "democracy," it is done by *adding* an adjective. Thus, the analyst seeking to avoid conceptual stretching will use adjectives in opposite ways, depending on the type of category in question.

Second, in the case of radial categories, the possibility of encompassing more cases through the elaboration of secondary categories can allow for considerable flexibility regarding the meaning and application of the category. Although this flexibility is often desirable, it can be the source of major scholarly debates. For example, as scholars seek to identify new subtypes of democracy, disputes can easily arise as to whether it is appropriate to consider the cases that fit these subtypes to be "truly" democratic.[15] By contrast, in analyses of a classical category such as "bureaucratic authoritarianism," no parallel debate emerged about whether the cases of bureaucratic authoritarianism were instances of "true" authoritarianism.[16]

Further Illustrations of Radial Structure in Recent Discussions of Democracy

Recent analyses of democracy by Terry Karl and Philippe Schmitter illustrate some of the concomitants of the radial structure of this category (Karl 1990, 2; Schmitter and Karl 1991, 76–82; idem 1992, 52). Of the three attributes of democracy we have discussed, Karl and Schmitter deliberately set aside the questions of equity raised above and focus on issues associated with participatory democracy and liberal democracy. Summarizing schematically, we may say that they are concerned with four elements: "(1) *contestation* over policy and political competition for office; (2) *participation* of the citizenry through partisan, associational, and other forms of collective action; (3) *accountability* of rulers to the ruled through mechanisms of representation and the rule of law" (Karl 1990, 2; emphasis added); and (4) *protection of rights* essential to meaningful contestation, participation, and accountability.[17]

Karl explicitly notes what we see as an essential component of the radial structure of this category. In a discussion of subtypes of democracy (which we call the secondary categories), she observes that they "are characterized by different mixes and varying degrees of the chief dimensions of democracy: contestation, participation, [and] accountability" (1990, 2). Thus, she recognizes the essential point evident in Figures 4 and 5: secondary categories tend to divide up the component elements of the primary category, and they may vary considerably in how closely they resemble the central subcategory.

This pattern also appears in the subtypes developed jointly by Schmitter and Karl (1992, 56–58). They identify "corporatist" democracy and "populist" democracy in part by the shared attribute that the dominant center of power is located in the state. Clearly, this attribute mitigates the weight of other components of their understanding of democracy, such as citizen participation and the accountability of rulers. Thus, in their framework these subtypes are less democratic than what might be deemed to be "true" democracies. The fact that these sub-

types are seen as less democratic comes out clearly in Schmitter and Karl's empirical analysis of 24 recent cases of democratization. Of the eight countries they assign to the subtypes of "populist" and "electoralist" democracy, they treat six as marginal cases, either because they have "not yet crossed the minimal democratic threshold" or because they "are not yet consolidated into a recognizable type of democracy" (p. 68).

Schmitter and Karl's analysis brings us back to our argument about conceptual traveling. It would appear that one of their goals is to introduce a broad range of empirical cases into the debate on democratization, yet without stretching the concept. Along the lines of our discussion, they attempt to do this by creating secondary categories (e.g., "corporatist" and "populist" democracy) referring to cases that observers might hesitate to call "true" democracies. These secondary categories serve to increase the extension of the overall category, without distorting it. In this way, the authors bring these cases into the framework of a general discussion of democracy, without having to claim that they are all truly democratic.

This elaboration of the category by Schmitter and Karl may be placed in perspective through comparison with an innovation proposed some time ago by Robert Dahl (1956, 1963, 1971). Dahl argues that for the analysis of concrete cases, it is more productive to employ the term *polyarchy*, rather than *democracy*. He uses democracy to refer to "an unattained and perhaps unattainable ideal," whereas polyarchy refers to existing political systems that could be seen as "relatively (but incompletely) democratized" (Dahl 1963, 73; idem 1973; 8). To avoid conceptual stretching, Dahl uses distinct labels for the idealized version of the category and for the version that refers to actual cases. Schmitter and Karl's treatment differs from Dahl's in two ways: (1) in their usage, the term democracy refers to at least some cases, rather than to a hypothetical ideal, and (2) instead of using separate label to extend the category to more cases, they avoid conceptual stretching by adding adjectives to the existing label. However, the treatments are similar in that Dahl, like Schmitter and Karl, creates a secondary category (i.e., a noncentral subcategory), following a radial pattern. Dahl's term *polyarchy* might be thought of as a "catch-all" secondary category in relation to the primary category democracy; that is to say, using polyarchy to refer to relatively democratized systems is the functional equivalent of adding an adjective to create the secondary category "partial" democracy or "incomplete" democracy in order to capture a larger number of partial cases.

To summarize, the radial category "democracy" has a structure that, through the elaboration of secondary categories, allows for wide variation in meaning and application within a generally agreed-upon area of discussion. Yet whether these variations in meaning and application are accepted or contested within the scholarly community is an abiding issue.

CONCLUSION

The goal of this discussion has been to offer new guidelines for comparative analysts who are concerned with the problems of conceptual traveling and conceptual stretching. We conclude that Sartori's framework for addressing these problems deservedly remains a benchmark for scholars of comparative politics. Yet some caution and refinement are in order.

The examination of family resemblances reminds us that an overly strict application of classical principles of categorization can lead to the premature abandonment of potentially useful categories. This problem can be avoided by self-consciously thinking in terms of ideal types, by using a system-specific approach to applying categories in particular contexts, or by adopting other techniques that do not depend on the assumption that members of a category share a full set of defining attributes.

The effort to avoid conceptual stretching must likewise take a somewhat distinct form when one is dealing with radial categories. This is the case because, with such categories, what we have called the secondary category (e.g., "electoral democracy") tends to *divide up* the constituent elements of the primary category ("democracy"). By contrast, with classical categories, the secondary category (e.g., "bureaucratic authoritarianism") tends to contain *additional* elements beyond those of the primary category ("authoritarianism"). As a consequence, with radial categories, the secondary category may have greater extension, whereas with classical categories, the primary category has greater extension. Relatedly, with classical categories one may often avoid conceptual stretching by removing an adjective, whereas with radial categories one may often avoid conceptual stretching by adding an adjective.

We also argue that because the secondary categories tend to divide up elements of a radial category such as "democracy," the formation of secondary categories creates both an opportunity and a problem. It creates an opportunity for broader and more flexible application by increasing the category's extension. Yet this very flexibility can lead to major scholarly disputes about whether the category fits the cases under study.

A final observation may be made about this central issue of the fit between categories and cases. Insights into the structure of categories do not tell us everything we need to know about how to apply them in research. Rather, this application depends on substantive expertise regarding the cases under analysis. We have suggested the example of a debate on whether a particular case should be called an instance of patrimonial, as opposed to traditional, authority. Though our methodological understanding of categories can frame such a debate, its resolution requires knowledge of the cases. In this sense, the arguments about categories that have been our focus here play the useful role of bringing us back to our own detailed understanding of the political settings we study.

Looking beyond these guidelines, we recognize that various issues raised here require further examination. More analysis is needed of the relation between classical and radial categories. Whereas some categories unambiguously correspond to one of these types, others may contain elements of both. Further, in pursuit of particular analytic goals, social scientists deliberately modify categories, often attempting to impose a classical structure on radial categories.[18]

These attempts to modify categories raise the larger issue of the relation between ordinary and technical language. When scholars create a technical language, they may well succeed in achieving greater clarity and consistency or in highlighting what they view as important aspects of the phenomena they study. On the other hand, it is possible that this new language will not be anchored in the familiar linguistic prototypes that play such an important role in making categories interesting and vivid. The modified categories might fail to gain currency, perhaps being displaced by more familiar usage.

This tension between the advantages and pitfalls of modifying categories raises the question of the proper task of methodology. To what extent should an understanding of how we tend to use categories inform our judgment about how we ought to use them? Should the methodological analysis of categories emphasize *description*, which might encourage realism about the constraints imposed by ordinary language on technical usage, or *prescription*, which might recommend means to overcome these constraints?[19] We have tried here to give reasons for attending to both.

Notes

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1. We treat concepts and categories as similar. Here we use the term *category* because it seems to point more directly to the issue of boundaries (a central concern of this analysis) and because it follows the usage of Lakoff (1987), whose work we build upon. Sartori, whom we cite extensively, refers to "concepts," instead of "categories." Our usage is not intended in a spirit of disagreement with his: it is simply more helpful for present purposes. But we retain his usage in such special expressions of his as *conceptual traveling* and *conceptual stretching*.

2. The founders of this school include Bendix (1956, 1964), Lipset and Rokkan (1967), and Moore (1966). Subsequent work includes Bendix 1978; Bergquist 1986; Collier and Collier 1991; Goldstone 1991; Luebbert 1991; Paige 1975; Ragin 1987; Rokkan 1970; Rueschemeyer, Stephens, and Stephens 1992; Skocpol 1979, 1984; Tilly 1975, 1984; and Trimberger 1978.

3. For authoritarianism and corporatism, see Anderson 1970; Berger 1981; Collier 1979; Lembruch and Schmitter 1982; Linz 1975; Linz and Stepan 1978; Malloy 1977; O'Donnell 1973; Schmitter 1971, 1974; Schmitter and Lembruch 1979; Stepan 1973, 1978. For democratization, see Di Palma 1990; Huntington 1991; O'Donnell, Schmitter, and Whitehead 1986; Pastor 1989; and the new *Journal of Democracy*.

4. The task of developing an adequate typology of different forms of categories and of situating these three types (classical, family resemblance, and radial) within it goes well beyond our goal here, which is simply to explore certain contrasts among these three types in order to illustrate some dilemmas that arise as researchers extend their categories to more cases. For a broad overview of different forms of categorization, see Lakoff 1987. For a brief discussion of the relation of ideal types to family resemblance and radial categories, see n. 8.

5. Sartori refers to a ladder of "abstraction" (1970, 1040; 1984, 44–46). However, because the term *abstract* is often understood in contrast to *concrete*, this label can be confusing. We therefore find that it expresses our meaning more clearly to refer to a ladder of generality.

6. We are aware that a more complete formulation of the law of inverse variation entails the expectation that an increase in the intension implies either decreasing, or simply nonincreasing, extension (Angeles 1981, 141). In this formulation, the slope would be either negative or zero (i.e., horizontal). However, we follow Sartori's usage, which for present purposes adequately captures the pattern of variation.

7. For the purpose of the present discussion, we do not consider the additional characteristic that Wittgenstein attributes to this type of category, namely, that cases may have differing degrees of centrality within the category.

8. The commonalities between family resemblance (and also radial categories) and Weberian ideal types are made very clear in Burger's insightful interpretation of Weber's theory of concept formation (1976, 115–16, 156–57). Burger emphasizes that Weber's use of ideal types grew out of his recognition that the most interesting concepts are not based on defining properties shared by all cases to which the concept refers (and thus do not follow the pattern of classical categorization). Weber, therefore, embraced the use of ideal types in which key attributes associated with the concept were expected to be present to varying degrees. Procedures we discuss for making generalizations with family resemblances and radial categories are thus of considerable relevance to ideal types as well.

9. Their presentation is couched in the language of measurement; and they refer to indicators, rather than attributes. However, they have a broad understanding of measurement as entailing an "ordered language" that serves "for the expression of empirical observations" (Przeworski and Teune 1970, 11), which is essentially what is understood here as concept formation.

10. For example, forming the concept is essential when one seeks to differentiate, within a set of highly intercorrelated attributes, between those attributes which are components of the concept and those which are *causes* or *consequences* of the concept.

11. See note 8 concerning the relationship between radial categories and ideal types.

12. We do not attempt to take account here of the vast literature that has analyzed democracy and its components and dimensions.

13. A fuller analysis of authoritarianism could reveal certain respects in which it departs from the classical model. However, its usage appears in major respects to have a classical form.

14. We recognize that this usage is contested (see Gallie 1956). With changes in gender relations and in the legal framework within which they are situated, the usage may change. The point here is that regardless of the outcome of

such disputes, the secondary category will often have greater extension than the primary category.

15. For a discussion of democracy as a "contested concept," see Gallie 1956.

16. In his assessment of post-1964 Brazil, Linz drew attention to the poorly institutionalized character of the prevailing political institutions by referring to them as constituting an "authoritarian situation" rather than "authoritarian regime" (1973, 235). However, their authoritarian character was not at issue.

17. We find it helpful to view Karl's fourth element, civilian control over the military, as an aspect of accountability. We have added a different fourth element, the protection of rights, to capture related issues discussed by Schmitter and Karl (1991, 1992).

18. Recent efforts to develop "minimal" or "minimalist" definitions of democracy which build on the earlier work of Schumpeter (1950), represent an effort to shift the category of democracy toward a classical pattern (Di Palma 1990, 28; Huntington 1991, 9). On the other hand, Ostiguy (1993) is attempting to push scholars toward recognizing its radial structure. With reference to the category of authoritarianism, we have treated it as classical, thereby following what seems to be the generally accepted usage. Yet Linz's (1964) pioneering article bases the discussion on the analysis of a prototype, Franco's Spain. To the extent that scholarly understanding of the category is strongly influenced by such a prototype, an element more characteristic of radial categories is thereby introduced.

19. Among philosophers, research in cognitive science has sparked a parallel debate about the proper role of epistemology. See Bealer 1987; Churchland 1987; and Goldman 1987.

References

Anderson, Charles W. 1970. *The Political Economy of Modern Spain: Policy-Making in an Authoritarian System*. Madison: University of Wisconsin Press.

Angeles, Peter A. 1981. *Dictionary of Philosophy*. New York: Barnes & Noble.

Bealer, George. 1987. "The Boundary between Philosophy and Cognitive Science." *Journal of Philosophy* 74:553–58.

Bendix, Reinhard. 1956. *Work and Authority in Industry: Ideologies of Management in the Course of Industrialization*. New York: Wiley.

Bendix, Reinhard. 1964. *Nation-building and Citizenship: Studies of Our Changing Social Order*. New York: Wiley.

Bendix, Reinhard. 1978. *Kings or People: Power and the Mandate To Rule*. Berkeley: University of California Press.

Berger, Suzanne B., ed. 1981. *Organizing Interests in Western Europe: Pluralism, Corporatism, and the Transformation of Politics*. Cambridge: Cambridge University Press.

Bergquist, Charles. 1986. *Labor in Latin America: Comparative Essays on Chile, Argentina, Venezuela, and Columbia*. Stanford: Stanford University Press.

Burger, Thomas. 1976. *Max Weber's Theory of Concept Formation: History, Laws, and Ideal Types*. Durham: Duke University Press.

Canfield, John V., ed. 1986. *Method and Essence*. Vol. 5 of *The Philosophy of Wittgenstein*. New York: Garland.

Churchland, Patricia Smith. 1987. "Epistemology in the Age of Neuroscience." *Journal of Philosophy* 74:544–53.

Collier, David, ed. 1979. *The New Authoritarianism in Latin America*. Princeton: Princeton University Press.

Collier, David. 1993. "Bureaucratic Authoritarianism." In *The Oxford Companion to World Politics*, ed. Joel Krieger. New York: Oxford University Press.

Collier, Ruth Berins, and David Collier. 1991. *Shaping the Political Arena: Critical Junctures, the Labor Movement, and Regime Dynamics in Latin America*. Princeton: Princeton University Press.

Dahl, Robert A. 1956. *A Preface to Democratic Theory*. Chicago: University of Chicago Press.

Dahl, Robert A. 1963. *Modern Political Analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Dahl, Robert A. 1971. *Polyarchy: Participation and Opposition*. New Haven: Yale University Press.

Di Palma, Giuseppe. 1990. *To Craft Democracies: An Essay on Democratic Transitions*. Berkeley: University of California Press.

Gallie, W. B. 1956. "Essentially Contested Concepts." *Proceedings of the Aristotelian Society* (London) 56:167–98.

Geertz, Clifford. 1973. *The Interpretation of Cultures*. New York: Basic Books.

Geertz, Clifford. 1983. *Local Knowledge: Further Essays in Interpretive Anthropology*. New York: Basic Books.

Goldman, Alvin. 1987. "Cognitive Science and Metaphysics." *Journal of Philosophy* 74:537–44.

Goldstone, Jack A. 1991. *Revolution and Rebellion in the Early Modern World*. Berkeley: University of California Press.

Hallett, Garth. 1977. *A Companion to Wittgenstein's "Philosophical Investigations."* Ithaca: Cornell University Press.

Huntington, Samuel P. 1991. *The Third Wave: Democratization in the Late Twentieth Century*. Norman: University of Oklahoma Press.

Karl, Terry Lynn. 1990. "Dilemmas of Democratization in Latin America." *Comparative Politics* 23:1–21.

Lakoff, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: University of Chicago Press.

Lembruch, Gerhard, and Philippe C. Schmitter, eds. 1982. *Patterns of Corporatist Policy-making*. Beverly Hills: Sage.

Linz, Juan J. 1964. "An Authoritarian Regime: Spain." In *Cleavages, Ideologies and Party Systems*, ed. Erik Allardt and Yrjo Littunen. Helsinki: Academic Bookstore.

Linz, Juan J. 1973. "The Future of an Authoritarian Situation or the Institutionalization of an Authoritarian Regime: The Case of Brazil." In *Authoritarian Brazil*, ed. Alfred Stepan. New Haven: Yale University Press.

Linz, Juan J. 1975. "Totalitarian and Authoritarian Regimes." In *Handbook of Political Science*, ed. Fred Greenstein and Nelson Polsby. Reading, MA: Addison-Wesley.

Linz, Juan J., and Alfred Stepan, eds. 1978. *The Breakdown of Democratic Regimes*. Baltimore: Johns Hopkins University Press.

Lipset, Seymour Martin, and Stein Rokkan. 1967. "Cleavages, Structures, Party Systems, and Voter Alignments: An Introduction." In *Party Systems and Voter Alignments*, ed. Seymour Martin Lipset and Stein Rokkan. New York: Free Press.

Luebbert, Gregory M. 1991. *Liberalism, Fascism, or Social Democracy: Social Classes and the Political Origins of Regimes in Interwar Europe*. New York: Oxford University Press.

MacIntyre, Alasdair. 1971. *Against the Self-Images of the Age: Essays on Ideology and Philosophy*. New York: Schocken.

Malloy, James M., ed. 1977. *Authoritarianism and Corporatism in Latin America*. Pittsburgh: University of Pittsburgh Press.

Moore, Barrington, Jr. 1966. *Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World*. Boston: Beacon.

Nie, Norman H., G. Bingham Powell, Jr., and Kenneth Prewitt. 1969. "Social Structure and Political Participation: Developmental Relationships I." *American Political Science Review* 63:361–78.

O'Donnell, Guillermo A. 1973. *Modernization and Bureaucratic-Authoritarianism: Studies in South American Politics*. Politics of Modernization Series, no. 9. Berkeley: University of California, Institute of International Studies.

O'Donnell, Guillermo A., Philippe C. Schmitter, and Laurence Whitehead, eds. 1986. *Transitions from Authoritarian Rule*. Baltimore: Johns Hopkins University Press.

Ostiguy, Pierre. 1993. "Democracy: A 'Radial Concept'?" University of California, Berkeley. Typescript.

Paige, Jeffery M. 1975. *Agrarian Revolution: Social Movements and Export Agriculture in the Underdeveloped World*. New York: Free Press.

Pastor, Robert A., ed. 1989. *Democracy in the Americas: Stopping the Pendulum*. New York: Holmes & Meier.

Przeworski, Adam, and Henry Teune. 1970. *The Logic of Comparative Social Inquiry*. New York: Wiley & Sons.
Rabinow, Paul, and William M. Sullivan, eds. 1987. *Interpretive Social Science: A Second Look*. Berkeley: University of California Press.
Ragin, Charles C. 1987. *The Comparative Method: Moving beyond Qualitative and Quantitative Strategies*. Berkeley: University of California Press.
Rokkan, Stein. 1970. *Citizens, Elections, Parties: Approaches to the Comparative Study of Processes of Development*. New York: David McKay.
Rueschemeyer, Dietrich, Evelyne Huber Stephens, and John D. Stephens. 1992. *Capitalist Development and Democracy*. Chicago: University of Chicago Press.
Sartori, Giovanni. 1970. "Concept Misformation in Comparative Politics." *American Political Science Review* 64:1033–53.
Sartori, Giovanni. 1984. "Guidelines for Concept Analysis." In *Social Science Concepts: A Systematic Analysis*, ed. Giovanni Sartori. Beverly Hills: Sage.
Schmitter, Philippe C. 1971. *Interest Conflict and Political Change in Brazil*. Stanford: Stanford University Press.
Schmitter, Philippe C. 1974. "Still the Century of Corporatism?" *Review of Politics* 36:85–131.
Schmitter, Philippe C., and Terry Lynn Karl. 1991. "What Democracy Is . . . and Is Not." *Journal of Democracy* 2:75–88.
Schmitter, Philippe C., and Terry Lynn Karl. 1992. "The Types of Democracy Emerging in Southern and Eastern Europe and South and Central America." In *Bound to Change: Consolidating Democracy in East Central Europe*, ed. Peter M. E. Volten. New York: Institute for EastWest Studies.
Schmitter, Philippe C., and Gerhard Lembruch, eds. 1979. *Trends toward Corporatist Intermediation*. Beverly Hills: Sage.
Schumpeter, Joseph A. 1950. *Capitalism, Socialism, and Democracy*. 3d ed. New York: Harper & Row.
Skocpol, Theda. 1979. *States and Social Revolutions: A Comparative Analysis of France, Russia, and China*. Cambridge: Cambridge University Press.
Skocpol, Theda, ed. 1984. *Vision and Method in Historical Sociology*. Cambridge: Cambridge University Press.
Stepan, Alfred, ed. 1973. *Authoritarian Brazil: Origins, Policies, and Future*. New Haven: Yale University Press.
Stepan, Alfred. 1978. *The State and Society: Peru in Comparative Perspective*. Princeton: Princeton University Press.
Taylor, Charles. 1971. "Interpretation and the Sciences of Man." *Review of Metaphysics* 25:3–51.
Tilly, Charles, ed. 1975. *The Formation of National States in Western Europe*. Princeton: Princeton University Press.
Tilly, Charles. 1984. *Big Structures, Large Processes, Huge Comparisons*. New York: Russell Sage Foundation.
Trimberger, Ellen Kay. 1978. *Revolution from Above: Military Bureaucrats and Development in Japan, Turkey, Egypt, and Peru*. New Brunswick: Transaction Books.
Weber, Max. 1978. *Economy and Society: An Outline of Interpretive Sociology*. Ed. Guenther Roth and Claus Wittich. Trans. Ephraim Fischoff et al. Berkeley: University of California Press.
Winch, Peter. 1958. *The Idea of a Social Science*. London: Routledge & Kegan Paul.
Wittgenstein, Ludwig. 1968. *Philosophical Investigations*. 3d ed. London: Basil Blackwell.

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