Sociological Forum, Vol. 11, No. 3, 1996

Lumping and Splitting: Notes on Social Classification

Eviatar Zerubavel[1]

This paper examines the mental process of grouping "similar" things together in distinct clusters and separating "different" clusters from one another. The role language plays in providing us with seemingly homogeneous mental niches for lumping things together yet at the same time allowing us to carve seemingly discrete categories out of experiential continua directs the sociological study of classification to intersubjective, conventional mindscapes that are neither personal nor "logical." The paper identifies a nonmetric, topological mode of thinking that involves playing down intracluster while exaggerating intercluster mental distances and ends with some methodological observations of the need to approach classification from a comparative perspective as well as highlighting the role of spatial zoning, rites of separation, and Freudian slips in the study of the social construction of difference and similarity.

KEY WORDS: classification; categories; clusters; language; cognitive sociology; topological thinking; similarity; difference.

INTRODUCTION

Although the world in which we live is essentially continuous, we experience it as discrete chunks: "strangers" and "acquaintances," "fiction" and "nonfiction," "business" and "pleasure," "normal" and "perverse." Carving out of reality such "islands of meaning" (E. Zerubavel, 1991:5–32) involves two contrasting yet complementary cognitive acts—lumping and splitting.[2] The former entails grouping "similar" things together in a single mental cluster. The latter involves perceiving "different" clusters as separate from one another. Lumping enables us to perceive grape juice as simi-

[1]Department of Sociology, Rutgers University, New Brunswick, New Jersey 08903-5072.

[2]E. Zerubavel, 1991:21. On the distinction between "lumpers" and "splitters" in science, see Simpson, 1961:137-140; Hexter, 1979:242–243.

0884-8971/96/0900-0421$09.50/0

lar to orange juice and chimpanzees as similar to baboons. Splitting enables us to perceive grape juice as different from wine and chimpanzees as different from humans.

Although they involve the diametrically opposite cognitive acts of assimilation and differentiation, lumping and splitting are, in fact, complementary since they are *both* necessary for carving islands of meaning out of reality. And though they seem to contradict each other, they actually operate at different levels of abstraction—lumping at the *intra*categorical and splitting at the *inter*categorical level. After all, as we split the life-course into "separate" age categories, we also lump together those who fall within each of those categories as being roughly of the "same" age.

Islands of meaning are not part of nature (E. Zerubavel, 1991:70–80). In other words, they are products of a process of "sculpting" (Nippert-Eng, 1996:7–18; E. Zerubavel, 1995) distinct mental clusters rather than identifying natural ones. Such a process involves the active construction of both similarity (through lumping) and difference (through splitting), since things are not inherently similar to or different from one another.

And yet, while neither similarity nor difference is an objective matter, neither are they necessarily subjective. This paper, for example, examines what is *socially* considered similar or different. Approaching the phenomenon of classification from the perspective of cognitive sociology, a field specifically committed to the study of aspects of cognition that are neither personal nor "logical" (E. Zerubavel, 1997), this paper thus focuses primarily on *intersubjective* mental clusters.

LUMPING

An island of meaning is a cluster of things (acts, events, objects, traits) that are regarded as more similar to one another than to anything outside the cluster. As we lump those things together in our minds, we allow their perceived similarity to outweigh any differences among them. As a result, we come to envision relatively homogeneous "mental fields" (E. Zerubavel, 1991:15–17) and regard their constituent elements as somewhat interchangeable variants of a single unit of meaning (Bruner *et al.*, 1956:2–4; Johnson, 1967:242; Cohen, 1969:109–111). Potters and filmmakers thus become "artists"; homosexuality and necrophilia, "perversions"; and Marx and Simmel, "conflict theorists." Any differences among these elements are dismissed as "making no difference" and thereby ignored (Foucault, 1966/1973:140).

I call these variants of units of meaning *allo-variants* (E. Zerubavel, 1991:16) because their functional equivalence is basically modeled after the

allomorphic relations among the prefixes of the adjectives "inaccurate," "unappealing," and "disrespectful."[3] We regard them as essentially "the same" since no confusion of meaning is likely to occur if we substitute one of them for another (for example, if we say "unrespectful" or "unaccurate"). Thus, we rarely attribute any significance to the "negligible" difference between right-eye and left-eye winks, which we consider functionally interchangeable allokines (Birdwhistell, 1970:166, 193–195, 229), or between a kiss and an affectionate look, which we often substitute for each other as tokens of intimacy (Davis, 1973:76–77). By the same token, nor do we normally pay any attention to whether the "vegetable" we get with the steak we ordered at a restaurant happens to be green beans or broccoli, and we often substitute pretzels for potato chips as "party snacks." And though we are clearly aware of the considerable difference between 28-day and 31-day time blocks, we nonetheless regard both as structurally equivalent allochrones (E. Zerubavel, 1979:4) and expect identical "monthly" paychecks for February and March.

In a similar manner, we also carve social clusters in our minds by regarding all cluster members as similar and ignoring all differences among them (Williams, 1995), as when we lump together everybody who earns below a certain income as "poor." We likewise downplay differences within our own group as well as among others (Tajfel *et al.*, 1964; Tajfel, 1981:115–116, 121, 133, 243), as is evident from various traditional catchall categories for nonmembers such as the Gypsy *gadjo*, the ancient Greek "barbarian," or the Jewish *goy*. Ignoring intracluster differences and regarding all cluster members as basically the same ("if you have seen one, you have seen them all") often results in ugly stereotypes such as the racist claims that "Blacks" are lazy or that *all* "Orientals" look alike. Nonetheless, without the ability to ignore the uniqueness of things and to regard them as "typical" (Schutz and Luckmann, 1973:77, 229–241; Berger and Luckmann, 1966/1967:30–34, 54–58) members of clusters, it would be impossible to envision any mental cluster at all.

Lumping presupposes our ability to think topologically. Despite the fact that as we grow up our early topological awareness of boundedness and separateness is gradually replaced by a metric awareness of distance (Piaget and Inhelder, 1948/1967), we never lose topological awareness entirely and, in fact, continue to experience space metrically as well as topologically. (That explains why we often think of Reno as lying east, instead of west, of San Diego; Stevens and Coupe, 1978:423–425.) This applies to more than just physical space. Strong intracluster relations

[3]See also Jakobson, 1942/1978:28–33; Pike, 1954/1967:44–46, 164, 176–177, 206, 325–328; Bolinger, 1968:43–44, 58–63.

characterize any cluster (Köhler, 1947:93; Campbell, 1958:18–20; Sokal, 1977:7; Smith and Medin, 1981:110–111), so we perceive the things we lump together as "closer" to one another than to anything outside the cluster.[4] That explains our tendency to play down intracluster mental distances, as when we envision white Moselle and Chablis wines as somehow "closer" to one another than to a red Burgundy; or when we lump together billions with trillions (Hofstadter, 1982/1985), people who are born on September 23 and on October 18 as "Libras," and works from the sixth and fourteenth centuries as "medieval."

SPLITTING

Whereas lumping involves overlooking differences *within* mental clusters, splitting entails widening the perceived gaps *between* them, thereby reinforcing their mental separateness. Thus, while playing down intracluster mental distances, we also exaggerate intercluster ones (Tajfel and Wilkes, 1963). Employing the same nonmetric, topological mode of thinking, we thus envision substantial gaps separating "different" mental clusters from one another. Indeed, it is the perception of such mental gaps that enables us to envision islands of meaning in the first place (E. Zerubavel, 1991:21–32).

Most critical, in this regard, is the experience of *mental quantum leaps* that accompanies the "crossing" of the mental divides separating different clusters from one another, and which entails the mental inflation of distances across those divides (E. Zerubavel, 1991:24–32). It is such inflation of intercluster mental gaps that leads us to perceive chimpanzees as "closer" to chipmunks than to humans, with whom chimpanzees share 99% of their genes, and 64-year-old workers as closer to 24-year-olds than to 65-year-olds, whom we often consider officially unfit to work.

Consider the mental inflation of intercluster distances in actual space. Our topological experience of space distorts our metric perception of distance, leading us to exaggerate distances between points that are located in "separate" chunks of social space (Kosslyn *et al.*, 1974; Sherman *et al.*, 1979; Allen, 1981; Thorndyke, 1981; Maki, 1982; Acredolo and Boulter, 1988). Such tendency to inflate distances across mental divides overrides even the basic "law of proximity" (Wertheimer, 1923) that makes things that are close to one another seem parts of a single cluster. As a result of the gaps we

[4]Using proximity as a metaphor for similarity (Werner, 1940/1957:222–225), we often envision difference in terms of mental distance. See, for example, Goldstein and Scheerer, 1941:59–60, 75–82, 103–107, 128; Attneave, 1950; Osgood *et al.*, 1957:89–97; Bonner, 1964; Torgerson, 1965; Blau and Duncan, 1967:67-75, 152-161; Arnold, 1971; Fillenbaum and Rapoport, 1971; Reed, 1972; Caramazza *et al.*, 1976; Krumhansl, 1978.

envision between "different" chunks of social space, even small distances across them seem greater than any distance between points within the same chunk. That is why we perceive Houston as closer to Phoenix than to Mexico City and Nice as closer to Paris than to Florence. The mental gaps we envision separating religious temples from their immediate surroundings likewise transform physically negligible steps across their thresholds into tremendous existential leaps from the profane into the sacred.

Yet our topological view of the world also distorts our experience of purely mental distances. This is evident by the way we perceive the metrically negligible "distances" between 119-pound ("bantamweight") and 120-pound ("featherweight") boxers or between virgins and women who have had one sexual experience as greater than those between 120-pound and 125-pound (both "featherweight") boxers or between women who have had 1 and 58 sexual experiences (see Purcell and Brekhus, this issue). Similar mental quantum leaps help separate in our minds "four-star" from "three-star" hotels and also account for our readiness to pay $9.95 for something we might not purchase for $10.00.

In order to perceive a fundamental difference between "us" and "them," we likewise exaggerate in our minds the mental divides separating "different" ethnic, religious, and other social groups from one another (Campbell, 1956; Blau and Duncan, 1967:72, 421; Tajfel, 1981:115, 133). By the same token, in order to solidify our distinctiveness as humans, we lump together "oysters and chimpanzees, while placing a gulf between chimpanzees and humans" (Singer, 1977:xv). Experiencing quantum leaps between members and outsiders certainly enhances our vision of the sharp divides supposedly separating different "chunks of identity" (E. Zerubavel, 1991:13–14) from one another.

The mental gap between "different" weight categories in boxing is also quite similar to the one we envision between an 8-week-old "embryo" and an 8-week and 1-day-old "fetus." We perceive the "distance" between them as greater than the one between 6- and 8-week-old "embryos" (see Isaacson, this issue). Along similar lines, on Monday, we think of next Friday—four days away—as part of "this week," yet we think of last Friday—only three days away—as part of "last week" (Koriat *et al.*, 1976:67; E. Zerubavel, 1985:128). We likewise experience the interval from June 30 to July 1 as longer than the one from July 1 to July 2 (Halbwachs, 1950/1980:101) and our 39th and 40th birthdays as "light-years apart" (Harris, 1975:72).

The inflation of temporal distances across mental divides also affects the way we cluster people in our minds. The metrically negligible difference between being born on November 21 and November 22, for example, involves the difference between being a Scorpio and a Sagittarius. By the same token, the mere one-year gap separating senior "undergraduate" from

first-year "graduate" students often seems wider than the three-year distance between seniors and freshmen.

Consider also, in this regard, the somewhat convulsive manner in which we officially move from one conventional phase of our existence to the next one, as manifested in the way we transform metrically negligible steps in time into significant quantum leaps in age. The minuscule interval from the day before one's sixth birthday to the birthday itself, for example, is far more critical than the 364-day interval that follows it since it entails a full-year leap from being "five" to being "six." (By contrast, despite the fact that we age continuously, a boy is officially considered six until his seventh birthday.) Such quantum leaps are even more dramatic when we reach particularly critical birthdays, such as when we become legally eligible to drive a car, drink in a bar, or vote (Wright, 1968:189–190). Eighteen-year-old "adults" are thus regarded by the law as closer to 52-year-olds than to 17-year-old "minors."

The way we reckon age is only one manifestation of the somewhat spasmodic manner in which we structure official mobility in social time. Though they are usually quite short, weddings, for example, involve a major leap across the mental divide separating marriage from singlehood, so that even couples who have already lived together for several years officially undergo a considerable transformation of their relationship at the brief moment when they exchange their vows. Along similar lines, we expect a move from one phase of one's career to the next one to entail a dramatic leap in one's professional skills. Thus, on the day they are officially transformed from "interns" into "residents," we expect young physicians to immediately assume significantly greater amounts of responsibility, which they would be denied only a few hours earlier. By contrast, despite the considerable professional experience they gain during their internship, on the last day of that year, interns are nevertheless assigned the same amount of responsibility they were given ten months earlier (E. Zerubavel, 1979:5–6, 10–11).

THE SOCIAL CONSTRUCTION OF DIFFERENCE AND SIMILARITY

We often treat the mental gaps separating "different" islands of meaning from one another as if they were part of nature, as when we expect "June bugs" to suddenly disappear on July 1 (Werner, 1940/1957:186–187) or believe that we are somehow transformed on the day we turn 40 (Brandes, 1985). Yet such mental divides are purely conventional. Reality is continuous (E. Zerubavel, 1991:70–74), and if we envision distinct clusters separated from one another by actual gaps it is because we have been so-

cialized to "see" them. In other words, it is social convention that transforms actual oceans into mental archipelagos.

Thus, it is by sheer convention that we treat Danish and Norwegian as two separate languages, distinguish heroin from its chemical cousins, which we use as controlled substitutes for it (Gould, 1990:74), and cut up continuous stretches of land into separate continents ("North America" and "Central America," "Europe" and "Asia"). Nor are there any natural divides separating childhood from adulthood, winter from spring, or one day from the next. It is we ourselves who organize reality into "separate" compartments (Bergson, 1908/1911:239–298).

And yet, while they may not exist "out there" in the real world, neither are islands of meaning generated solely by our own minds. The gaps we envision between "different" mental clusters are neither natural nor logical, yet they are not entirely personal either. It is indeed a mind that organizes reality in separate chunks, yet it is not just the individual's own mind. When we cut up the world, we usually do it not as individuals but as members of particular "thought communities" (Fleck, 1935/1979:45, 103; E. Zerubavel, 1997).

The logic of classification is something we learn as part of our *cognitive socialization* (E. Zerubavel, 1997).[5] Thus, when we take a course in art history, we learn to see things as "Gothic" or "Postimpressionistic." Learning music likewise involves learning to break up a continuous voice range into discrete categories such as "alto" and "soprano."

Much of this, of course, is done through language. It is language that helps us carve out of experiential continua discrete categories such as "long" and "short" or "hot" and "cold" (Whorf, 1942/1956:259; Wilber, 1979/1981:26). As we assign them distinct labels, we thus come to perceive "bantamweight" boxers and "four-star" hotels as if they were indeed qualitatively different from "featherweight" boxers and "three-star" hotels. It is language that helps us distinguish "undergraduate" from "graduate" students and "minors" from "adults" as well as "this week" from "last week" and "herbs" (parsley, dill) from mere "leaves," which we would never allow on our plates. It is likewise language that helps us separate in our minds "bonus" from regular "salary," "fetus" from "baby," and "menstruating" from mere "spotting" (see papers by Zelizer, Isaacson, and Foster, this issue).

At the same time, however, it is our ability to assign things a common label that also helps us lump them together in our minds, since such ability provides us with the seemingly homogeneous mental niches into which we lump them (Plato, 4th century BC/1952:263c–263d; Locke, 1690/1975 book

[5]See also Luria, 1974/1976:49–99; Curran, 1996.

3, chap. 6.39). It is the availability of the category "pre-Columbian," for example, that enables us to lump together the Olmec and Aztec civilizations, which actually flourished some 2000 years apart from one another. By the same token, it is the concept "classical" that leads us to perceive the music of Handel and Debussy as similar. And only the concept "alcoholic" makes wine seem closer to whiskey than to grape juice.

Language, however, rests on social convention, and the islands of meaning it helps delineate are culture's own creation. Such clusters are unmistakably "emic" entities (Pike, 1954/1967:37–53) that, although reified by natives, are practically invisible to anyone else (E. Zerubavel, 1991:79–80).

STUDYING LUMPING AND SPLITTING

When we come to study social classification, it is therefore imperative that we avoid the common ethnocentric tendency to treat conventional, "emic" mental divides as natural or "logical." Rather than arrogantly claim that members of thought communities other than our own fail to notice "obvious" discontinuities (Lévy-Bruhl, 1910/1966), for example, we should recognize that they do make distinctions yet not always between the things that we do (Lévi-Strauss, 1962/1966; E. Zerubavel, 1991:63-65). Indeed, their seeming "inability" to make those distinctions may very well be the flip side of their ability to lump together allo-variants in some other mental cluster (just as we ourselves do not distinguish eggs from meat when what concerns us is our cholesterol level)! It may also be useful to remind ourselves, in this regard, that most "savages" would probably find the logic of treating hamsters and gerbils as pets yet rats and mice as pests somewhat bizarre.

Hence the need to approach classification from a comparative perspective that can highlight our cognitive diversity as members of different thought communities (E. Zerubavel, 1991:62–70, 1997). We should therefore try to note culturally and subculturally specific patterns of lumping and splitting as well as major historical changes in these patterns within a given society (see papers by Simpson, Isaacson, Foster, and Brekhus, this issue). To underscore the social nature of lumping and splitting, we should likewise note major disputes surrounding the way we classify things.

At the same time, however, if we are indeed committed to examining classification sociologically, it is equally critical to note the remarkably similar manner in which different individuals lump things together in clusters and split those clusters from one another. As cognitive sociologists, we thus need to ignore individuals' strictly personal mindscapes and to focus ex-

clusively on the impersonal archipelagos of meaning they share in common (E. Zerubavel, 1997).

Mental structures are usually taken for granted. An effective way for students of social classification to overcome this epistemological problem is to examine the explicit spatial zoning of our everyday life world, which offers a window into the way things in this world are actually clustered in our minds. Spatial partitions, after all, divide more than just space, since spatial zoning is often used to substantiate and reinforce "mental zoning" (Tambiah, 1969; Bourdieu, 1971/1973; Helms, 1988:22–33; E. Zerubavel, 1991:7–9). The physical boundaries of countries and neighborhoods, for example, often represent the mental partitions between nations and ethnic groups, while separate aisles in music stores and the separate floors of department stores help reinforce the mental separation of "classical" from "popular" music and the world of women from the world of men. We likewise divide our homes into separate rooms to help us separate in our minds culture (dining room) from nature (bathroom) and the formal (living room) from the informal (family room); express the mental discontinuity between "culture" and business by relegating them to separate sections of the newspaper; and keep "different" food categories mentally apart by placing them in separate sections of the refrigerator. Similar forms of spatial zoning help substantiate the mental contrast between the allowed and the taboo (Lewin, 1936:44) and the sacred and the profane (Hertz, 1909/1973; Durkheim, 1912/1995:312).

Mental distance and proximity are likewise manifested in the physical layout of supermarkets and museums as well as in the way we organize our file cabinets. Just as telling is the way bookstores display "fiction" and "nonfiction" in separate aisles or the way universities house "different" provinces of scholarship in separate buildings. (In my own university, the sociology, psychology, and anthropology departments are actually located on three different campuses!) Consider also, in this regard, the physical layout of restaurant menus and encyclopedias.

Yet spatial zoning is only one particular instance of mental zoning. How we cluster things in our minds is also evident from the way publishing houses delineate the intellectual jurisdiction of different editors, the way academic scholarship is organized in separate "fields" (E. Zerubavel, 1995), the way orchestras design their concert programs (DiMaggio, 1982), or the cultural division of labor among different radio stations.

Equally useful data for students of social classification are the various rites of separation designed to inflate mental distances in people's minds (Van Gennep, 1908/1960; Durkheim, 1912/1995:303–313; E. Zerubavel, 1981:147–166, 1991:18–24, 57–59). Rules regarding time off, expense accounts, or the use of office letterhead, after all, are specifically designed

to help reinforce the mental separation of the "public" from the "private." Numerous contact taboos are likewise designed to help mentally separate the sacred from the profane. The use of two separate calendars for home- and work-related appointments and the practice of keeping one's house and office keys on two separate rings offer similar evidence of attempts to separate those two domains in users' minds (see Nippert-Eng, this issue).

While rites of separation are particularly useful for the student of mental splitting, students of mental lumping should pay closer attention to "Freudian" slips.[6] Traditionally used by psychoanalysts for detecting strictly personal associations (Freud, 1901/1960:53–105), Freudian slips are also excellent sources on social classification since they tell us quite a lot about what people actually lump together in their minds. Thus, when we note that someone refers to a person named Goldenberg as "Rosenblum" or "Finkelstein," for example, we learn quite a lot about the salience of ethnicity in the way she categorizes people, since the three are all allo-variants of the category "Jewish name." The same is true when people refer to someone by the name of a fellow "Black" or "Oriental" who happens to work in the same predominantly white place. And when people keep mixing up two holidays that are associated with two different historical events that both involved armed resistance to an enemy, we learn how salient is such resistance in the way members of their society generally classify historical events (Y. Zerubavel, 1995:220–221). Such errors, in short, offer students of social classification a window into the way people actually organize the world in their minds.

Understanding the process of lumping and splitting is absolutely critical for understanding how we rent a video, use the Yellow Pages, or qualify for certain benefits. In each of the above situations, our vision of an object is essentially embedded in a vision of some larger mental niche within which it is conventionally placed—"comedy," "appliances," "handicapped." How we actually lump "similar" objects in such mental clusters and split "different" clusters from one another is thus critical for understanding how we generally organize the world in our minds.

As the following seven papers demonstrate, the process of lumping and splitting underlies the way we use money (Zelizer), create a safe (Simpson) as well as a fair (Purcell) world, sculpt our professional (Nippert-Eng) and sexual (Brekhus) identity, and narrate complex biological processes such as pregnancy (Isaacson) and menstruation (Foster). Furthermore, these papers all reveal the unmistakably cognitive foundations of social life

[6]For some earlier attempts to use errors as data in cognitive sociology, see E. Zerubavel, 1981:22-30, 1985:134-138.

(E. Zerubavel, 1997). The very existence of a social, intersubjective world presupposes our sharing a common vision of objects in it as "similar" to or "different" from one another. A "mental cartography" (Foster) of our fundamental social categories is thus indispensable for understanding the general underlying structure of this world.

REFERENCES

Acredolo, Linda P. and Lyn T. Boulter
1988 "Effects of hierarchical organization on children's judgments of distance and direction." Journal of Experimental Child Psychology 37:409–425.

Allen, Gary T.
1981 "A developmental perspective on the effects of 'subdividing' macrospatial experience." Journal of Experimental Psychology: Human Learning and Memory 7:120–132.

Arnold, Jack B.
1971 "A multidimensional scaling study of semantic distance." Journal of Experimental Psychology 90:349-372.

Attneave, Fred
1950 "Dimensions of similarity." American Journal of Psychology 63:516-556.

Berger, Peter L. and Thomas Luckmann
1967 The Social Construction of Reality: A Treatise in the Sociology of Knowledge. (1966*). Garden City, NY: Doubleday Anchor.

Bergson, Henri
1911 Matter and Memory. (1908*) London: George Allen & Unwin.

Birdwhistell, Ray L.
1970 Kinesics and Context: Essays on Body Motion Communication. Philadelphia: University of Pennsylvania Press.

Blau, Peter M. and Otis D. Duncan
1967 The American Occupational Structure. New York: John Wiley.

Bolinger, Dwight
1968 Aspects of Language. New York: Harcourt, Brace & World.

Bonner, R. E.
1964 "On Some Clustering Techniques." IBM Journal of Research and Development 8:22-32.

Bourdieu, Pierre
1973 "The Berber House." (1971*) In Mary Douglas (ed.), Rules and Meanings: The Anthropology of Everyday Knowledge: 98–110. Harmondsworth: Penguin.

Brandes, Stanley
1985 Forty: The Age and the Symbol. Knoxville: University of Tennessee Press.

Bruner, Jerome S. *et al.*
1956 A Study of Thinking. New York: John Wiley.

Campbell, Donald T.
1956 "Enhancement of contrast as composite habit." Journal of Abnormal and Social Psychology 53:350-355.
1958 "Common fate, similarity, and other indices of the status of aggregates of persons as social entities." Behavioral Science 3:14-25.

Caramazza, Alfonso *et al.*
1976 "Subjective structures and operations in semantic memory." Journal of Verbal Learning and Verbal Behavior 15:103-117.

Cohen, Yehudi A.
1969 "Social boundary systems." Current Anthropology 10:103-117.

Curran, Geoffrey M.
1996 "From 'swinging hard' to 'rocking out': Classification of style and the creation of identity in the world of drumming." Symbolic Interaction 19:37-60.

Davis, Murray S.
1973 Intimate Relations. New York: Free Press.

DiMaggio, Paul
1982 "Cultural entrepreneurship in nineteenth century Boston, Part II: The Classification and framing of Ameri-

*Original publication date.

can art." Media, Culture, and Society 4:303-322.

Durkheim, Emile
1995 The Elementary Forms of Religious Life. (1912*) New York: Free Press.

Fillenbaum, Samuel and Amnon Rapoport
1971 Structures in the Subjective Lexicon. New York: Academic Press.

Fleck, Ludwik
1979 Genesis and Development of A Scientific Fact. (1935*) Chicago: University of Chicago Press.

Foucault, Michel
1973 The Order of Things: An Archaeology of the Human Sciences. (1966*) New York: Vintage.

Freud, Sigmund
1960 The Psychopathology of Everyday Life. (1901*) New York: W. W. Norton.

Goldstein, Kurt and Martin Scheerer
1941 "Abstract and concrete behavior: An experimental study with special tests." Psychological Monographs 53:1-151.

Gould, Stephen J.
1990 "Taxonomy as politics: The harm of false classification." Dissent (Winter): 73-78.

Halbwachs, Maurice
1980 The Collective Memory. (1950*) New York: Harper Colophon.

Harris, Janet
1975 The Prime of Ms. America. New York: G. P. Putnam's Sons.

Helms, Mary W.
1988 Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge, and Geographical Distance. Princeton, NJ: Princeton University Press.

Hertz, Robert
1973 "The Pre-eminence of the Right Hand: A Study in Religious Polarity." (1909*) In Rodney Needham (ed.), Right and Left: Essays on Dual Symbolic Classification: 3-31. Chicago: University of Chicago Press.

Hexter, J. H.
1979 On Historians: Reappraisals of Some of the Makers of Modern History. Cambridge, MA: Harvard University Press.

Hofstadter, Douglas R.
1985 "On number numbness." (1982*) In Metamagical Themas: Questing for the Essence of Mind and Pattern: 115-135. New York: Basic Books.

Jakobson, Roman
1978 Six Lectures on Sound and Meaning. (1942*) Cambridge, MA: MIT Press.

Johnson, Stephen C.
1967 "Hierarchical clustering systems." Psychometrika 32:241-254.

Köhler, Wolfgang
1947 Gestalt Psychology. New York: New American Library.

Koriat, Asher *et al.*
1976 "An inquiry into the process of temporal orientation." Acta Psychologica 40:57-73.

Kosslyn, Stephen M. *et al.*
1974 "Cognitive maps in children and men." Child Development 45:707-716.

Krumhansl, Carol L.
1978 "Concerning the applicability of geometric models to similarity data: The interrelationship between similarity and spatial density." Psychological Review 85:445-463.

Lévi-Strauss, Claude
1966 The Savage Mind. (1962*) Chicago: University of Chicago Press.

Lévy-Bruhl, Lucien
1966 How Natives Think. (1910*) New York: Washington Square Press.

Lewin, Kurt
1936 Principles of Topological Psychology. New York: McGraw-Hill.

Locke, John
1975 An Essay Concerning Human Understanding. (1690*) Oxford: Oxford University Press.

Luria, Alexander, R.
1976 Cognitive Development: Its Cultural and Social Foundations. (1974*) Cambridge, MA: Harvard University Press.

Maki, Ruth H.
1982 "Why do categorization effects occur in comparative judgment tasks?" Memory and Cognition 10:252-264.

Nippert-Eng, Christena E.
1996 Home and Work: Negotiating Boundaries through Everyday Life. Chicago: University of Chicago Press.

Osgood, Charles E. *et al.*
1957 The Measurement of Meaning. Urbana: University of Illinois Press.

Piaget, Jean and Bärbel Inhelder
1967 The Child's Conception of Space. (1948*) New York: W. W. Norton.

Pike, Kenneth L.
1967 Language in Relation to A Unified Theory of the Structure of Human Be-

havior. rev. ed. (1954*) The Hague: Mouton.

Plato
1952 Statesman. (4th century BC*) New Haven, CT: Yale University Press.

Reed, Stephen K.
1972 "Pattern recognition and categorization." Cognitive Psychology 3:382-407.

Schutz, Alfred and Thomas Luckmann
1973 The Structures of the Life-World. Evanston, IL: Northwestern University Press.

Sherman, Richard C. *et al.*
1979 "Movement and structure as determinants of spatial representation." Journal of Nonverbal Behavior 4:27-39.

Simpson, George G.
1961 Principles of Animal Taxonomy. New York: Columbia University Press.

Singer, Peter
1977 Animal Liberation: A New Ethic for Our Treatment of Animals. New York: Discus.

Smith, Edward E. and Douglas L. Medin
1981 Categories and Concepts. Cambridge: Harvard University Press.

Sokal, Robert R.
1977 "Clustering and classification: Background and current directions." In J. Van Ryzin (ed.), Classification and Clustering: 1-15. New York: Academic Press.

Stevens, Albert, and Patty Coupe
1978 "Distortions in judged spatial relations." Cognitive Psychology 10:422-437.

Tajfel, Henri
1981 Human Groups and Social Categories. Cambridge: Cambridge University Press.

Tajfel, Henri and A. L. Wilkes
1963 "Classification and quantitative judgment." British Journal of Psychology 54:101-114.

Tajfel, Henri *et al.*
1964 "Content of stereotypes and the inference of similarity between members of stereotyped groups." Acta Psychologica 22:191-201.

Tambiah, Stanley J.
1969 "Animals are good to think and good to prohibit." Ethnology 8:423-459.

Thorndyke, Perry W.
1981 "Distance estimation from cognitive maps." Cognitive Psychology 13:526-550.

Torgerson, Warren S.
1965 "Multidimensional scaling of similarity." Psychometrika 30:379-393.

Van Gennep, Arnold
1960 The Rites of Passage. (1908*) Chicago: University of Chicago Press.

Werner, Heinz
1957 Comparative Psychology of Mental Development. rev. ed. (1940*) New York: International Universities Press.

Wertheimer, Max
1923 "Untersuchungen zur Lehre von der Gestalt." Psycholo. Forsch. 4:301-350.

Whorf, Benjamin L.
1956 "Language, mind, and reality." (1942*) In John B. Carroll (ed.), Language, Thought, and Reality: 246-270. Cambridge, MA: MIT Press.

Wilber, Ken
1981 No Boundary: Eastern and Western Approaches to Personal Growth. (1979*) Boston: New Science Library.

Williams, Richard
1995 "Challenges to the homogenization of 'African American'." Sociological Forum 10:535-546.

Wright, Lawrence
1968 Clockwork Man. London: Elek.

Zerubavel, Eviatar
1979 Patterns of Time in Hospital Life: A Sociological Perspective. Chicago: University of Chicago Press.
1981 Hidden Rhythms: Schedules and Calendars in Social Life. Chicago: University of Chicago Press.
1985 The Seven-Day Circle: The History and Meaning of the Week. New York: Free Press.
1991 The Fine Line: Making Distinctions in Everyday Life. New York: Free Press.
1995 "The rigid, the fuzzy, and the flexible: Notes on the mental sculpting of academic identity." Social Research 62:1093-1106.
1997 Social Mindscapes: An Invitation to Cognitive Sociology. Cambridge, MA: Harvard University Press.

Zerubavel, Yael
1995 Recovered Roots: Collective Memory and the Making of National Israeli Tradition. Chicago: University of Chicago Press.