

Visible materials, visualised theory and images of social research

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Reciprocal relationships between visualising and seeing undergird all empirical investigations, but they are frequently neglected. That neglect leads to distortions in how social researchers think about the visual dimensions of their data, the visual challenge of communicating their research to others, and the images and visualisations that guide their theorising. Paying more attention to these elements can enrich our understanding of culture and social life, and of social research itself.

Researchers who do not work directly with photographs, drawings or videotapes frequently neglect the reflexive relationship between ideas and visible materials that undergirds all empirical research, and it is sometimes neglected by those who do. This neglect can distort how researchers picture or portray objects of social inquiry. It can also discourage social researchers from exploring further the visual substance of their own work, including visible materials they regard as data and the images and visualisations that guide their theorising.

Acknowledging the visible and visual dimensions of their own work could give researchers more tools for refining social theories and for sharing them with colleagues and the public. It also could lead social researchers to a deeper understanding of how images, materials and meaning are tied together in the lives of those they study. But moving in this direction is not a simple matter, either practically or conceptually. In terms of the latter, visual approaches to social research can founder on confused applications of the terms 'visible', 'visual' and 'visualised' or lose traction within perspectives on social inquiry (including popular notions about multi-level social analysis) that celebrate ideas over materials, and, by extension, words over images.

This article presents an alternative way of thinking about social research – sociology and social anthropology in particular – in which images and ideas are closely coupled. Within this perspective, all objects of social inquiry have important material and visible dimensions – families, voting behaviour, institutions,

neighbourhoods, international development, occupations, ethnicity, communities, schooling, gender and sexuality, executive decision-making, children's play and so on. As an extension of this perspective, I will argue that no object of social inquiry can be fully understood without attending to these visible and material dimensions, and that none can be understood by looking at those dimensions alone.

To introduce this alternative perspective, I will describe visible data social researchers work with more or less routinely – not all of which they recognise as such – and review some visualisations that researchers have used in articulating social theory. I will then illustrate how these visible and visualised features of social research are more problematic for multi-level approaches to social analysis than they are for multi-dimensional perspectives, in part because of the contrasting imagery of 'levels' and 'dimensions'. As a prelude to this analysis, let me comment briefly on the terms 'visible', 'visual' and 'visualised' as they apply to social and cultural analysis.

VISIBLE DATA, VISUAL ANALYSIS AND VISUALISED THEORY

The term 'visible' refers to physical-optical attributes of phenomena or materials, regardless of how interesting or meaningful they are to researchers or research subjects. Something is 'visible' if it can or could be seen, whether or not anyone notices or cares about it. 'Visual', on the other hand, refers to an attribute, dimension or mode of sense perception, not to objects per se. As noted by Grady (1996) in his thoughtful essay of a decade ago, visible things become important to understanding culture and social life when they are noticed by people, when they orient or become visually salient to how people think or act. The term 'visualise' or 'visualised' refers to neither objects nor direct perceptions, but to a mode, process or dimension of understanding, a strategy of comprehension or conceptualisation.

The value of distinguishing these three terms mirrors the scientific tenet of distinguishing evidence (material

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realities) from analysis (including visual perception) and interpretation or theory (including visualisation). With this correspondence in mind, sloppy use of 'visible', 'visual' and 'visualising' can make scientists understandably confused or suspicious. This kind of confusion can be created when working with words and numbers as well. In those cases, however, transgressions across the data, analysis and interpretation borders are more apparent; they lack the cover offered by semantic affinities and overtones that arise from the terms visible, visual and visualised. Indeed, in the rhetoric of 'hard' science, loosely conceived, words and numbers are fixed at opposite ends of the spectrum, with numbers at one end standing in for evidence of the material world and words standing in at the other for ideas and understanding. But this same hard science rhetoric has room for images in both places, as material evidence (i.e. photographs of cells, star clusters, or the paths of sub-atomic particles) and as interpretations (i.e. diagrams of planetary orbits, the benzene ring, or the DNA double helix).

Neat divisions between evidence, observation and theory are attractive to most scientists, but they are confounded by research in which data take the form of words themselves, as they do in much fieldwork and other forms of 'qualitative' inquiry. These divisions are also confounded by word and image constructs that shape how quantitative data are recorded, analysed or reported (Cicourel 1964; Gusfield 1981; Bowker and Star 1999). Attention to these confounding matters unsettles the prospect of keeping evidence, analysis and theory clearly and immutably separated. That ideal still holds extraordinary sway, but a more sensible and realistic approach might be to examine specific areas of their interdependence while at the same time trying to tease these three dimensions of scientific practice apart.

In just this regard, thinking through relations between what is visible, visual and visualised can offer insights into the conduct of social research that are not always apparent when attending only to words and numbers. Within an analytical thread defined in this way, 'seeing' is both a literal, biophysical process and a metaphor for 'understanding' (Grady 1996). As such, it is also an intriguing, visual bridge from materials to ideas and from evidence to theory.

Unfortunately, the potential value of this bridge to social research is opposed not only by an interest in maintaining inviolate boundaries between evidence, analysis and theory but also by how different dimensions of social research are visualised. Particularly problematic

in this regard are hierarchical representations of multi-level social and cultural analysis. As a background against which to illuminate where this imagery goes awry, let me review some of the visible data and visualised theory that characterise social research.

VISIBLE DATA IN SOCIAL RESEARCH

Social researchers work with varied data to answer questions about culture, social organisation, behaviour and social life. These data can include institutional records; published or unpublished texts; survey responses; material artefacts; and recordings, notes and memories of what researchers have seen and heard. Data of this sort are always imperfect. However, as a resource for challenging speculation, reducing ignorance or refining social theory, they are frequently better than nothing. Well-schooled social researchers develop skills in determining just how much better than nothing different kinds of data are for answering different questions. But social researchers are better schooled in working with some kinds of data than others, including different kinds of visible materials, only some of which they recognise as such.

Photographs, Films and Videotapes

For the past century or so, field workers have used cameras to record visible features of culture and social life. These efforts have generated a rich trove of photographs, films and videotapes that are among the most widely recognised forms of visible, social scientific data. The most well-known of these materials are ethnographic films and photo essays. Notable examples of this film genre include Robert Gardner's *Dead Birds* (Gardner 1964) and *Forest of Bliss* (Gardner 1984), Jean Rouch's *Les Maîtres Fous* (Rouch 1955) and John Marshall's *The Hunters* (Marshall 1957). Among the photo essay genre, the images made by Gregory Bateson and Margaret Mead (1942; see also Sullivan 1999) during their fieldwork in Bali are perhaps the most well known, but more recent examples include studies by Cathy Greenblatt (2004), Douglas Harper (1982, 1987, 2001), Bruce Jackson (1977), David Halle (1993) and Roby Page (2005). One step removed from the work of these professional social researchers are numerous other projects of social documentary photography, including camera work by Lewis Hine and Jacob Riis and the Farm Security Administration photographs produced during the late 1930s and early 1940s (for overviews of this work, see Fleischhauer and Brannan 1988, and Lesy 2002).

Photographs, films and videotapes are 'visible data' – that is, material artefacts that can be seen in their own right. They also make visible some elements of culture and social life that we might not otherwise be able to see. But these materials also record the visual perceptions of those who made them, and they can stimulate additional visual perceptions among people who view them. As distillations of direct observation and other forms of social inquiry, photographs, films and videotapes can also be used to represent ideas, and in that respect provide useful tools for visualising and representing social theory. In just these respects, photographs, films and videotapes can be approached from the standpoint of all three terms explicated in the preceding section.

Many social researchers collapse or ignore these multiple perspectives within a loose definition of visual social research as 'fieldwork with cameras'. However, this notion truncates and distorts the social scientific role that photographs and videotapes can play in at least two respects: First, it puts technology ahead of intellectual purpose and theory. Equipment can be important, but the key question for social researchers is not whether an image is recorded, but how, when and why. Second, it combines what might be quite different methodological intents into a rudimentary folk idiom of 'picture taking'. This idiom can be an important element of how some individual sociologists or anthropologists have used cameras (Ruby 1973). However, considered collectively, social researchers have used photographs and videotapes in a wide range of applications, including making visual inventories of household possessions, creating impressionistic accounts of festivals, eliciting comments from research subjects about deeply held political and religious beliefs, and tracking how people walk around tall buildings. Given the diversity of these applications, characterising photographic and videographic studies as a single strand of 'visual' social research is misleading. A more fruitful approach is to examine what is visible and visual about culture and social life and see where that intersects with the work of social researchers. Recorded images may define one part of this intersection, but they fall far short of defining all of it.

Artefacts, Settings and Environments

A broader and more complete inventory of the visible data used by social researchers would include a diverse array of material artefacts that reveal something about culture and social life (Banks 1998, 2001; Emmison and Smith 2000). Materials of this sort include folk arts and crafts – for example, prepared foods, home decorations and body adornments, children's makeshift clothing and

toys – and the material products of state, religious and commercial enterprises (Mumford 1934; Molotch 2004). The culture and social life associated with these materials is evident in how they are fabricated or found, exchanged or retained, used or abused. In the last decade or so, materials of this sort have appeared with increasing frequency as objects of social inquiry (see, for example, Hoskins 1998; Miller 1998; Derevenski 2000; Graves-Brown 2000), but paying attention to material culture is hardly new or novel. Indeed, to the extent that archaeology and art history helped spawn contemporary social research, artefacts were among the earliest objects of disciplined, social scientific inquiry (for a remarkable recent example that blends historical and contemporary analysis of materials and their meaning, see Greenfield 2004).

The contributions to social science of attending to material artefacts as data are bounded on one side by the visible, on the other by the visual. In the first case, empirically sound analysis requires close, systematic observations of visible, material properties. It will not do to say that two objects look 'pretty much alike' if closer inspection can reveal important differences. A fair amount of science – and not just social science – has been generated by people looking at phenomena more closely and systematically than those who came before them. In many cases, advances in this kind of observation have emerged through new technologies – X-ray imaging, three-dimensional computer modelling, photography – but in other cases, scientific insights came to those who simply looked the longest and hardest.

Observing what is visible with clarity and precision is important in all the sciences, but social scientists also need to ascertain which visible materials are visually significant – that is, when and where specific materials are noticed or ignored by people, and why. To investigate the latter is to entertain a broad range of questions about culture and social life, at least some of which are visual, both literally and figuratively. How do people see the world in which they live? What do they notice most about that world, and when? How do they communicate about what they see? How does what they see affect what they do and think about, and vice versa?

Investigating questions such as these both extends and complicates what we think of as 'visible' data and 'visual' analysis. Photographs, videotape recordings and films and other material artefacts have played a role in this kind of inquiry, but so have interviews, field observations and both oral and written texts. Moreover,

in analysing these varied data sources, social researchers may choose to ignore or emphasise how the people they study literally 'see' their own life materials, activities and settings. These contrary prospects frame two minor ironies. When literal 'seeing' is emphasised, social analysis can be regarded as a form of 'visual study' whether or not primary data take the form of photographs, videotapes or material artefacts. Conversely, when researchers ignore questions about what subjects literally see, their analysis may not be very 'visual,' even when their source data include photographs, videotapes and other artefacts.

Interplay between the analysis of visible materials and studies of visual significance shapes fieldwork with cameras and it also shapes social and cultural studies of material artefacts. In some sense, social researchers who take either as a point of departure are led routinely to the other. That is, photographs are a primary tool in archaeology and other studies of material culture, and photographs and videotapes themselves become artefacts for social researchers who work with cameras. As examples of the latter, some social researchers have used photographs as interview prompts to assess visual dimensions of what people know and think about (Prosser and Schwartz 1998; Clark 1999; Orellana 1999; Rich and Chalfen 1999; Pink 2001; Harper 2002; Clark-Ibañez 2004). Others have found it useful to examine photographs and other image artefacts made or used by research subjects themselves (Chalfen 1987; Hagaman 1993; Chaplin 1994; Cowan 1999; Margolis 1999; Rich and Chalfen 1999; Pink 2001), not just as visible materials but also as evidence of folk perceptions and folk theories.

Professional communities of visual sociologists and visual anthropologists are familiar with these different research approaches, the complications they pose for isolating visible data from visual analysis and theorising, and the opportunities they provide for enriched social and cultural analysis. But these communities are relatively small. Few sociologists and anthropologists call them home, and those who do not tend to know little about those who do. Does that place visible data and visual studies outside the social science mainstream? Not necessarily. The relationship between visible artefacts and visual perception is an important aspect of the social scientific past, an aspect that contemporary scholars have noted in the work of Georg Simmel and Erving Goffman (Emmison and Smith 2000), William Lloyd Warner and Margaret Mead (Clark 1995) and Edmund Burke and Karl Marx (Mitchell 1986). It also figures prominently in present practice. Indeed, social



FIGURE 1. The materials recorded in this photograph are part of a routine conversion from invisible to visible field data. The audiotape recordings of interviews on the left have been transcribed to make visible text documents that lend themselves to more detailed analysis.

researchers currently work with a wide array of visible data, not all of which they recognise as such and at least some of which they make themselves.

Texts, Figures and Screens

In assessing the range of visible data social researchers work with routinely, it is useful to remember that a key challenge of fieldwork of any sort is to turn observations into visible records that can be perused and analysed at a later date. This challenge applies at least as well to field researchers who do not use cameras as to those who do. Observed activities are inscribed as field notes for subsequent viewing on paper or on computer screens. Audible but invisible speech acts are converted into visible transcripts for further analysis and safekeeping (see Figure 1). Paths and places are paced off and turned into scaled lines on paper maps, and so on.

In much the same terms, 'visible data', broadly defined, are no more essential to field researchers than they are to scholars who never leave the office, library or laboratory. Both libraries and computer screens place a premium on visual scanning and recognition strategies, as do on-line archives of government documents, maps, museum collections and film and photographic materials (see Figures 2 and 3). Researchers also visually scan (i.e. 'read') paper and print representations of previous investigations (i.e. the 'research literature') and select, annotate and label selected passages as preliminary notes or as citation lists to accompany published articles, books and reports. Indeed, most data sets of interest to social researchers have significant visible faces. To be appreciated fully, they must be seen.

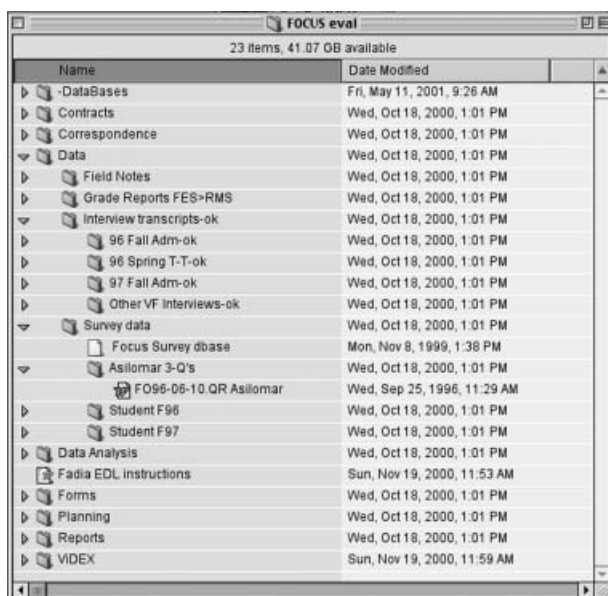


FIGURE 2. Varied data for a research project have been organised on this computer hard drive as a hierarchy of folders and files. Individual documents can be made to appear or disappear at the touch of a keystroke or mouse.

Thus, while field workers with cameras may agonise over the technical challenges of recording nighttime social life or dimly lit residential interiors, social researchers of many other stripes also face challenges in collecting and organising 'visible' and legible data (see Figures 4 and 5). The latter depend on functioning copy machines and file cabinets, stable file transfer protocols, robust search engines and adequate data display software, rather than on cameras, lenses, lights and film. But the challenges of viewing durable visible records apply equally to quite varied research methods. Margaret Mead (1995) characterised anthropology as a 'discipline of words', but both anthropology and sociology are disciplines of words – including charts, tables and diagrams – that need to be seen.

Most social scientists take for granted the visible dimensions of the materials they work with until something goes wrong – books are missing from the shelves, photocopies are defective, handwritten notes are stained and blurred by rain or spilled drinks, or computer files are misplaced or overwritten. Paying more attention to these materials when things go right might help social researchers improve their craft, which could be worthwhile in and of itself. An added benefit would apply if this attention also deepened their understanding of the interplay between visible materials and ideas, including, as I will consider next, visualised ideas for representing social theory.

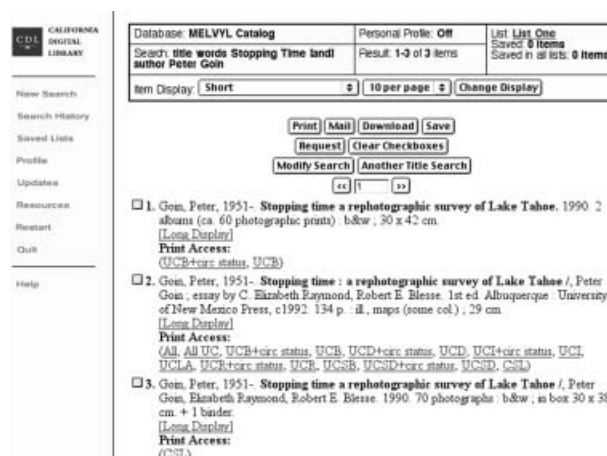


FIGURE 3. Using this computer interface for searching the online library of the University of California requires close attention to a wide range of visual cues, including text colours, boundary lines and formatting.

VISUALISED IDEAS IN SOCIAL THEORY

Social researchers not only rely on visible materials as data, they draw routinely on visual ideas to refine and represent social theory. Visualisations of this sort include the literal and figurative images through which scholars define, describe and portray objects of social inquiry and relationships among them. To borrow W. J. T. Mitchell's phrase (1994), social researchers have developed a rich array of strategies for 'picturing social theory', though some acknowledge this more than others. In his most recent book, *Tricks of the Trade*, Howard Becker (1998) put this kind of visualisation front and centre. In a lead chapter on imagery, Becker argues that visualisation and 'images' are at the heart of sociological inquiry: '[Herbert] Blumer thought, and so do I, that the basic operation in studying a society – we start and end with them – is the production and refinement of an image of the thing we are studying' (1998, 12).

Drawing Images with Lines

Becker may be more forward than many of his colleagues in acknowledging this kind of visualisation, but he has plenty of company when it comes to using it. In some cases, the image proposed by a social researcher is communicated through drawings, figures or diagrams. Figure 6, for example, displays an image William Lloyd Warner (1962) used to good advantage in his classic, book-length essay *American Life: Dream and Reality*. Through an odd set of circumstances – my uncle was a book designer who sent complimentary imperfect copies our way – I stumbled onto this image as a teenager, and it caught my fancy as a way of thinking about time,



FIGURE 4. Researchers visually organise paper materials by using file cabinets, boxes, divided binders, baskets on shelves, and piles or stacks on tables and desks. A special virtue of the file cabinet is that it allows researchers to alternately move materials into or out of view.

space, culture and the Memorial Day celebrations I'd seen first hand but never thought about in quite this way.

Many other social researchers have inscribed and externalised their visualisations of the social order through drawings similar to those used by Warner. Talcott Parson created a four-fold line figure that, to my way of thinking, did a better job of clarifying recursive elements of his AGIL framework for identifying the functional imperatives of societies (i.e. Adaptation, Goal attainment, Integration and Latency) than did his heavily measured prose. As a more recent example, Joseph Gusfield (1981) described in text the paths that people might take from drinking and driving to being convicted of a criminal, drinking-driving offence, but he also represented the paths in a tree-like diagram (see Figure 7).

Diagrams have also been used to represent less linear social processes. For example, Bruno Latour and Steve Woolgar (1986) presented their ideas about how

scientists produce scientific knowledge as a circle with four broadly defined quadrants and three intersecting diameters (Figure 8), each associated with a different production question: 'Who?' 'What?' and 'How?'

These and related efforts to visualise theory have brought to the social sciences a rich array of two-dimensional flow charts, checklists and figures. These are complemented by the maps of social ecologists, demographers and geographers. However, perhaps the most common 'image' in social research, apart from rows of type inked onto a printed page, is the table. Notable examples of this genre range from Durkheim's suicide rate matrices, disaggregated by religion, region or military status, to the tables that James Coleman et al. (1966) prepared for their study of American schooling some forty years ago. They include the tables Pierre Bourdieu and Jean-Claude Passeron (1990) used to represent college-going patterns for different social and economic classes in France and the tables David Halle (1993) prepared to examine art and social class in the American home.



FIGURE 5. Copy machines that are now taken for granted as 'office equipment' can also be regarded as specialised cameras used routinely by social researchers to make copies of paper artefacts.

Many social researchers limit their appreciation of tables to the numerical values they contain and regard table design as a purely technical challenge. However, as John Tukey (1977), Edward Tufte (1983, 1990, 1997) and others have noted, researchers' decisions about how tables are organised reflect distinctive visualisations of the theories and concepts that inform their work (see Grady 1998 for a detailed assessment of Tufte's work and social research). Are racial or religious identities unitary and coherent enough to appear as clearly bounded 'cells' in a table of demographic data? If so, how many different cells do we need? In a matrix that displays columns of data about school achievement, which agents of social action are important enough to get their own rows? Students? Teachers? Families? Neighbourhoods? Schools? What about state legislators? Is social class more appropriately demarcated by five rows in an occupational-income matrix, or seven or three? These questions suggest how figures, tables and graphs both reflect and portray a researcher's visualisations, how the object of her or his investigation is deemed to 'look' within implicit and explicit social theorising.

Drawing Images with Words

In addition to drawing figures and tables, many social researchers use words themselves to make theoretical concepts visible, visual and understandable. Sometimes this is relatively unconscious, as when research texts reflect visual metaphors that permeate everyday language (Lakoff and Johnson 1980). Social scientists refer routinely, for example, to what data 'reveal', what values or attitudes 'reflect', what a theory 'encompasses'. Visual metaphors and synecdoche also shape how social researchers write and think about objects of social inquiry. Schools, hospitals and other organisations are visualised in terms of their most visible organisational charts, buildings and other facilities. Groups of people are defined by skin colour, gender displays or the visible, physical settings where they sometimes can be found – that is, households, neighbourhoods, street corners, regions and nations.

In addition to casual, unconscious or implicit applications, visual metaphors also appear routinely as

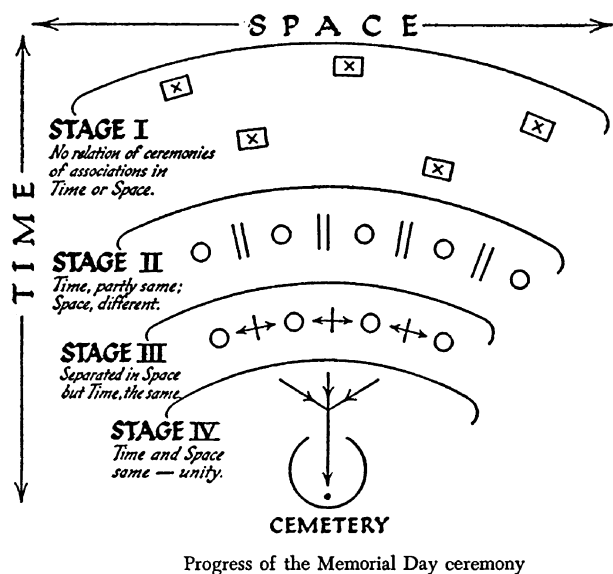


FIGURE 6. A visualisation of Memorial Day celebrations as an object of social inquiry. Originally published as Figure 1, 'Progress of the Memorial Day ceremony' in William Lloyd Warner's *American Life: Dream and Reality* (1962 [1953], 17). Reproduced courtesy of the University of Chicago Press.

explicit representations of social theory. As one notable example, Gregory Bateson (1972) recommended the value of thinking about 'play' as a 'frame' with well-defined, symbolic borders. Building on Bateson's suggestion, Erving Goffman (1974) extended the 'frame' image to describe a wide range of activities, including those that create, maintain, transform or 'break' the frame itself.

These prose visualisations by Bateson and Goffman have had a profound influence on how other social scientists have theorised about play, work, intimacy, intrigue and other socially mediated activity. But the 'frame' image that drives such theorising has been challenged by other theoretically strategic, visual metaphors. As Richard Schechner (1993) notes:

The Batesonian play frame is a rationalist attempt to stabilize and localize playing, to contain it safely within definable borders. But if one needs a metaphor to localize and (temporarily) stabilize playing, 'frame' is the wrong one - it's too stiff, too impermeable, too 'on/off,' 'inside/outside'. 'Net' is better: a porous, flexible gatherer; a three-dimensional, dynamic, flow through container.

The same kind of visualising that has shaped social theorising about play appears in how social researchers have theorised about other objects of social inquiry and about distinctions between different objects of the same sort. As another provocative example, Gerald Grant (1988, 124) used visual images of fruit to characterise authority relations in American high schools.

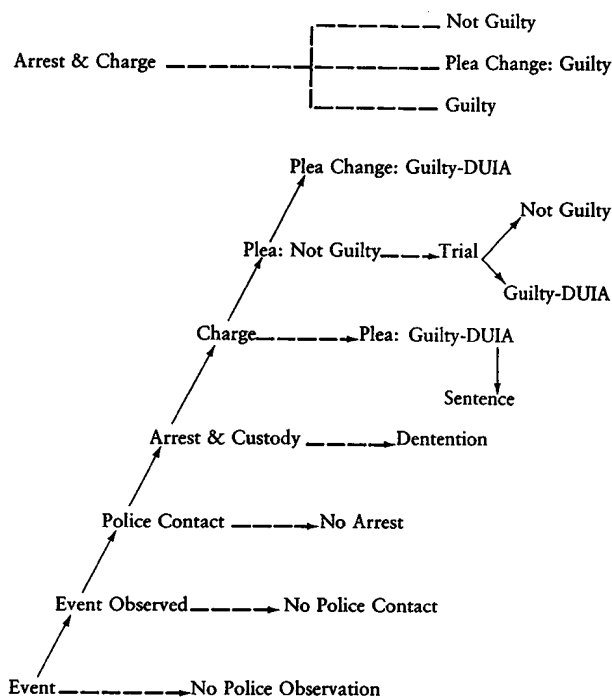


FIGURE 7. 'Stages and Alternatives in the Generation of DUIA Conviction'. Originally published as Figure 4 in Joseph Gusfield, *The Culture of Public Problems: Drinking-driving and the Symbolic Order* (1981, 137). Reproduced courtesy of the University of Chicago Press.

There are four components of these relations, which I visualize as the layers of a fruit taking nutriment from the soil. The seeds of the fruit represent the teachers and staff who are responsible for the school's daily functioning ... What the responsible adults ... can achieve is determined to a large extent by the second layer, the family mix, represented by the flesh of the fruit ... The third layer, the skin of the fruit, comprises the policy matrix ... The soil is the fourth layer, that deeper and slower-changing set of influences I call the cultural ground.

In writing this passage, Grant relied on prose instead of drawings or photographs to present a visual image that stands in for authority relations in schools. He then extended this analysis with an even more explicit and refined prose visualisation (1988, 124-25):

To extend our metaphor, the American high school of 1900 was like an avocado. Its center of adult power and initiative was unified and virtually impregnable, its middle layer of students fairly homogeneous, and its skin of external policy thin and clearly defined. The high school of 1950 was like a cantaloupe, a middle-class fruit with a considerably larger student body. External policies such as regents' examinations and curriculum guides in the more progressive states had enlarged

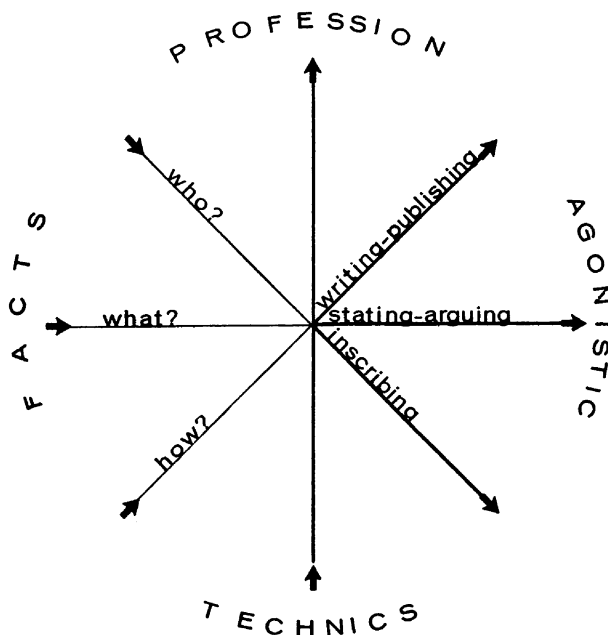


FIGURE 8. Different preoccupations of conversations observed in a scientific laboratory. Originally published as Figure 4.1 in Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts* (1986, 167). Reproduced courtesy of Princeton University Press.

somewhat, but at the center adults still held considerable autonomy for action and initiative. Even though specialized, the staff hung together in a net of connective tissue. Like a watermelon, the high school of the 1980s has a thick rind of federal and state policy, a greatly expanded and diverse student body, and often no well-defined center. The teachers and specialists, like watermelon seeds, are dispersed throughout, and commands – often in conflict – issue from a variety of locations.

Though well represented in the literature of social research, prose visualisation is but one of many strategies for representing social theory. To be understood, distributed and accessible to others, however, this and all other forms of social theorising must be made visible. This constraint brings us back to the central theme of this article – that social research rests in profound, unacknowledged ways on the production, distribution and management of visible materials. Thus, while Grant, Bateson, Goffman, Schechner and others used visual imagery to theorise about phenomena they observed, they also crafted *visible materials* – notes and manuscripts at first, and then, with the help of editors, publishers and printers, the pages of a journal or book (Figure 9). So too for other social researchers, who have used visual metaphors less explicitly or made good use of figures, drawings, charts, tables and maps. They all created materials that contribute to the visual substance of social research, that

represent in visible material forms how they imagine the social world to be. Had they drawn their visualisations out of thin air, without the confirmation of visible, empirical data, we might mistrust what they had to say. But had they not made their visualisations visible, we would not know much about them and their work.

IMAGES OF SOCIAL RESEARCH

How do these observations about the visible, visual and visualised dimensions of social research square with the ideas social scientists have about their work? The short answer is ‘not very well, but understandably so’. Words and numbers are what social researchers are trained to use and trust. Traditional print-based publications in the social sciences have been text-based and friendlier to tables and figures than to photographs and videotape recordings. Digital imaging technologies and the Internet have recently expanded options for sharing more varied forms of social research, including photographs and video clips, but printed journal articles and books still hold sway (and cachet). And when compared with the rhetorical conventions of documentary photography or film (where controversies and theory can take the form of competing imagery), words and numbers can certainly seem more manageable and predictable.

These pragmatic considerations for valuing words and numbers are well worth noting, but issues of theory, ideology and imagery also play a role. In popular visual representations, for example, sociology is typically ‘located’ between psychology and anthropology along a continuum running from physiology on one end to philosophy and metaphysics on the other. Within sociology itself, a similar continuum between materials and ideas is used routinely to represent different ‘levels’ of social analysis, such as those displayed in Figure 10. In the counterpart for anthropology, ethology and physical anthropology would occupy the bottom levels; studies of culture, values and beliefs would be near the top.

Imagery of this sort is a routine fixture of introductory texts in anthropology and sociology. The thinking behind this imagery also appears regularly in both professional and popular discourse. Indeed, many social researchers index their studies to a single level or an adjoining pair, or refer in passing to the ‘externalities’ of neighbouring cells. Others aim towards the ideal of ‘multi-level’ analysis, and the most ambitious scholars are known for theories that implicate the entire stack, top to bottom.



FIGURE 9. Taking books for granted makes it easy to overlook their value as visible artefacts through which researchers can distribute ideas across space and time. Threats to their production or distribution, however, can cast that value into sharp relief.

These popular notions are potentially problematic instances of what the sociologist Barry Schwartz (1981) refers to as ‘vertical systems of classification’. Schwartz argues persuasively that hierarchical imagery of this sort serves as a cultural code for representing inequalities of quite varied sorts in consistently invidious terms.

Social judgments are made firm and visible by a series of concrete forms whose analogous coding – up: down :: superordination: subordination – unites them into a common structure. Thus assembled, vertical forms constitute an intelligible universe of power. Social inferiority is conceived as being lower, social superiority as higher (Schwartz 1981, 5).

The hierarchy displayed as Figure 10, for example, locates persons and interpersonal relationships near the bottom of the sociological enterprise, just above the material environment, and ideology and culture near the top. This depiction not only separates one dimension from another, it defines which dimensions are

proximate and affirms the primacy of those at the top over those at the bottom. In this case the hierarchy depicts the primacy of ideas over materials and, by implication, the primacy of what is invisible over what is visible.

Oriented by this hierarchy, we would look for visible manifestations of social life primarily near the ‘bottom’ of Figure 10, along the interface between the material world and behavioural sequences. Drawing on an area of my own research, a child’s doll, for example, would appear somewhere along that interface, though children’s games might or might not. Adult conceptions of child–doll relationships would seem farther removed, less material, less visible and more aligned with ‘higher levels’ of culture and ideology.

As an inverse example within the same social organisation hierarchy, ‘teacher beliefs’ might be located somewhere near the top as a largely invisible aspect of ideology or occupational culture. Somewhat lower down the column than beliefs per se, a researcher might locate

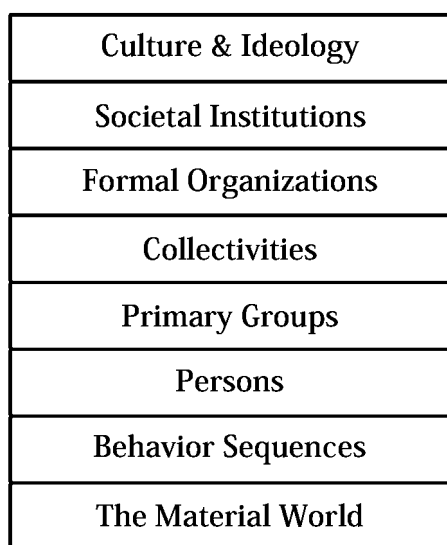


FIGURE 10. Sociology visualised as hierarchy of levels and related objects of inquiry. Adapted (liberally) from Peter Rossi's essay, 'On Sociological Data' (Smelser 1988).

phenomena of teachers talking with each other and patterns of social interaction in which they are engaged. Closer still to the material 'bottom' of this hierarchy would be the rooms in which teachers work with students or with each other and the materials they can see when they talk and when they think. Researchers might look a bit up and down the hierarchy, but the orienting image in either case would be a conception of social reality in which beliefs are distinct from materials and in which some objects of inquiry are visual and others are not.

Schwartz characterises the symbolic power of vertical, segmented imagery of this sort in the following terms (1981, 154): 'By bringing together and separating, exalting and demeaning, affirming and denying, vertical categories indicate to us the meaning of things'. But the same can be said for non-vertical imagery, with somewhat different consequences (Lynch 1998). For example, if we tip the image in Figure 10 over and twist it around to create Figure 11, we visualise a somewhat different idea of what sociology might entail.

The resulting circle not only contrasts visually with the stack of levels we started with, it suggests a quite different relationship between materials and ideas. Removing what then appears as an inner ring opens up additional theoretical possibilities, reconstituting the province of sociology from a hierarchy of 'levels' to a ring of 'dimensions', each with undefined, but plausible, relationships with all the others (Figure 12).

These revisions in how we visualise social research transform objects of sociological inquiry from elements

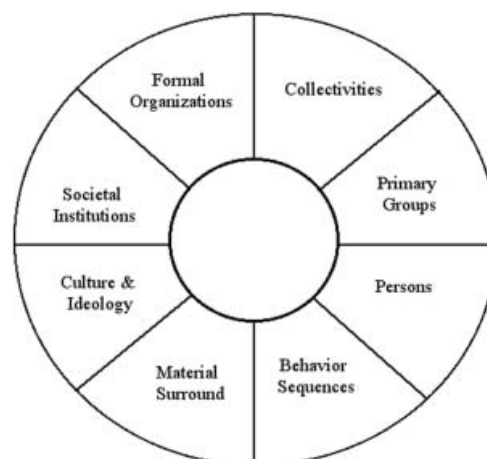


FIGURE 11. A ring of dimensions can be formed by taking a stack of levels and twisting it so that the top and bottom form adjoining segments of a circle.

that fit more or less within one box, level or cell of a hierarchical column to elements that warrant attention around the full dimensional array. Schooling would fall in the centre of this circle, not just in the 'formal organisation' segment, and the same would be true for families, social movements, religious and legal institutions, friendship, race relations and multinational corporations.

By inviting multi-dimensional analyses, the circle image changes how we think about these things as objects of social inquiry. Beyond that, it suggests that *any* object of social inquiry can have a direct relationship to material culture and, as a result, a visual and visible dimension.

Questions about dolls and teachers' beliefs, for example, are framed quite differently by placing these objects of social inquiry at the centre of Figure 12. Looking at the 'doll itself' within this dimensional ring invites inquiry into relationships between dolls and formal organisations, ideology, culture and collectivities, as well as behavioural sequences and the material surround (Wagner 1999). A similar spectrum of inquiry is encouraged in studying teachers' beliefs. Questions of ideology and culture are certainly appropriate in trying to understand such things, but so are questions about behavioural sequences and materials.

By displaying a more intimate relationship between 'ideology' and 'materials', the open-sectored circle also changes how we think about social research itself. Within a social organisation hierarchy, for example, *ideas* about social research – epistemological preferences, concepts of data collection, analysis and theorising, and methodology – are separated from the *material circumstances* of conducting research. But the circle

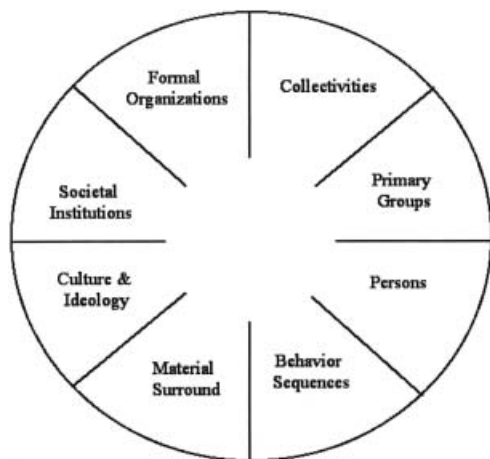


FIGURE 12. Sociology visualised as a circle of multi-dimensional inquiry.

image brings these together. That is more consistent with how social researchers work, using visible materials of various sorts to clarify their thinking and to move ideas and visualisations across time and space. It also invites inquiry into how the production and consumption of material artefacts – books, charts, papers, diagrams, tables, photographs, file folders, drawings and motion pictures – shape social theory and the practice of social research.

An example from my own fieldwork on school restructuring and academic standards may help illustrate this point. As one part of this study, I was interested in how teachers' ideas about 'good work' were affected by talking with other teachers. To explore this further I began audiotaping meetings in which teachers from three schools worked together in trying to clarify their academic standards. A few weeks into this multi-year project, I decided it was important to identify teachers by the grade level they taught, their gender, years teaching and so on, and switched from audio to videotape recording with that in mind. I could then 'see' who said what, and when, and create more complete and accurate transcripts.

Reviewing the videotapes created for that purpose, however, alerted me to other evidence missing from the audio recordings, including instances when individuals wrote something on a piece of note paper or on a blackboard in response to what someone else had said. Over time, I became increasingly interested in how participants used notes of this sort to translate what they saw and heard into artefacts they could take away from the meeting, 'see' again, refer to, and talk about in other contexts. I eventually determined that this kind of note taking – what Latour and Woolgar (1986) refer to as

'inscription' – was key to understanding how change was occurring from one meeting to the next.

Did the shift from audio to video recording turn this project away from a study of school change into an exercise in visual anthropology or visual sociology? Not really. Pragmatic concerns about transcription led me to record more visible data, and those data made it possible for me to go beyond what teachers *said* at meetings to consider what they did, the materials they examined, and what they wrote about what they saw and heard. Along the way, my study of teachers' 'talk' (as evidence of what they thought) became a study of how visual cues and materials were used by teachers – individually and collectively – to link thought and action over time and across different school settings. The fundamental questions I was trying to answer in this study stayed the same. Attending to more varied visible materials made it a better study, but it was still a study of teachers, standards and school change.

In much the same way, bringing visible materials, visual analysis and visualisations from the periphery to the centre of social research does not mean turning everyone into a visual sociologist or visual anthropologist. However, all social researchers can learn something about methods and theorising from colleagues who have been wrestling for some time with visual materials, as some visual sociologists and anthropologists have done. As a corollary, it also seems unlikely that social researchers can become expert in using visual materials without taking the craft of visual representation as seriously as they do their current work with words and numbers.

One consequence of attending more to the visible-visual-visualised continuum could be new or renewed understanding of particular objects of social inquiry. The conventional wisdom, shaped in part by the implicit segregation of ideas and things, is that only a few of the many things that sociologists and anthropologists study have significant visual dimensions – art, fashion, the built environment, or gender display, for example. Two things happen when scholars stand that conventional wisdom on its head.

First, researchers are encouraged to examine how materials, images, ideas and social life intersect in a wide variety of settings. Attention of this sort has inspired thoughtful visually attuned, ethnographic accounts of gendered possessions (Hoskins 1998), air traffic controllers (Sharrock 1998), telecommunication network managers (Hindmarsh and Heath 1998), dairy farmers (Harper 2001) and learning to play the jazz

piano (Sudnow 2001). It also has appeared in cultural studies of racially explicit decorative arts (Turner 1994), photographic exhibitions (Sandeem 1995), puppets and automata (Nelson 2001), store window mannequins (Schneider 1996), local traditions of dreaming and reverie (Ravenhill 1996) and the challenges of contemporary urbanism (Solnit and Schwartzberg 2000).

Second, in keeping visible-visual-visualised interactions in mind, researchers confront somewhat new and distinctive methodological and theoretical challenges. Key among these is the need to explicate situational interfaces between text, image, activities, setting and meaning. Rather than gloss over this challenge, some scholars have placed it front and centre as a stimulus for developing new methodological tools and concepts. These include computer-assisted strategies for storing, coding and retrieving text and images, such as those used by the Third International Mathematics and Science Study (TIMSS), a cross-national video analysis of classroom interaction (Stigler et al. 1999). They also include new approaches for enhancing the validity and authenticity of data (see, for example, Prosser and Schwartz 1998; Pink 2001) and refined concepts and cases for making sense of researcher–subject relationships (Shanklin 1979; Biella 1988).

In addition to refreshing and extending how researchers might define objects of social inquiry, visible-visual-visualised considerations also shape opportunities to communicate about social theory with other researchers and the public. Indeed, the production and distribution of visual materials defines in part the production and distribution of social research itself. As Michael Lynch (1998) has put it,

Borrowing from Marx, we might say that in modern science the production of displays is a labour process that sets up, and creates materials for, individual perceptions and judgements. In order to understand how such displays are produced and reckoned with it is necessary to examine complex assemblages of verbal, numerical, geometrical, textual, material, instrumental and pictorial phenomena.

As individuals, social researchers have a vague sense of what Lynch is writing about. They know that working with visible materials goes hand-in-hand with making knowledge visible to others. That is why they write, photograph or make videotapes in the first place. But they are less inclined to acknowledge this explicitly, to

recognise that their work is lodged inextricably between ideas and things, between what they can visualise on their own and what they can encourage others to see.

There is nothing about all this that makes life easier for social scientists. Treating the visible-visual-visualise continuum as central rather than peripheral to their work creates new challenges as well as new opportunities. But that is in large part how science unfolds. Charles Ragin (1992) has noted that ‘ideas and evidence are mutually dependent; we transform evidence into results with the aid of ideas, and we make sense of theoretical ideas and elaborate them by linking them to empirical evidence’. Much the same can be said for visible evidence and visualised ideas in conducting social research.

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REFERENCES

- Banks, Marcus. 1998. Visual anthropology: Image, object and interpretation. In *Image-based research*, edited by Jon Prosser, 9–23. London: Taylor and Francis.
- . 2001. *Visual methods in social research*. Thousand Oaks, Calif.: Sage.
- Bateson, Gregory. 1972. *Steps to an ecology of mind*. New York: Ballantine.
- , and Margaret Mead. 1942. Balinese character: A photographic analysis. New York: New York Academy of Sciences.
- Becker, Howard. 1998. *Tricks of the trade: How to think about your research while you are doing it*. Chicago: University of Chicago.
- Biella, Peter. 1988. Against reductionism and idealist self-reflexivity: The Iparakuyo Maasai film project. In *Anthropological filmmaking*, edited by Jack R. Rollwagen, 47–72. New York: Harwood.
- Bourdieu, Pierre, and Jean-Claude Passeron. 1990. *Reproduction in education, society and culture*. Newbury Park, Calif.: Sage.

- Bowker, Geoffrey C., and Susan Leigh Star. 1999. *Sorting things out: Classification and its consequences*. Cambridge, Mass.: MIT Press.
- Chalfen, Richard. 1987. *Snapshot versions of life*. Bowling Green, Ohio: Bowling Green University Popular Press.
- Chaplin, Elizabeth. 1994. *Sociology and visual representations*. London: Routledge.
- Cicourel, Aaron V. 1964. *Method and measurement in sociology*. New York: The Free Press.
- Clark, Cindy Dell. 1995. *Flights of fancy, leaps of faith: Children's myths in contemporary America*. Chicago: University of Chicago.
- . 1999. The autodriven interview: A photographic viewfinder into children's experiences. *Visual Sociology* 14: 39–50.
- Clark-Ibañez, Marisol. 2004. Framing the social world with photo-elicitation interviews. *American Behavioral Scientist* 47: 1507–27.
- Coleman, James S., E. Q. Campbell, C. J. Hobson, J. McParland, A. J. Mood, F. F. Weinfeld, and R. York. 1966. *Equality of educational opportunity*. Washington, D.C.: Government Printing Office.
- Cowan, Peter. 1999. 'Drawn' into the community: Re-considering the artwork of Latino adolescents. *Visual Sociology* 14: 89–106.
- Derevenski, Joanna Sofaer. 2000. *Children and material culture*. New York: Routledge.
- Emmison, Michael, and Philip Smith. 2000. *Researching the visual: Images, objects, contexts and interactions in social and cultural inquiry*. Thousand Oaks, Calif.: Sage.
- Fleischhauer, Carl, and Beverly W. Brannan, eds. 1988. *Documenting America, 1935–1943*. Berkeley, Calif.: University of California.
- Gardner, Robert. 1964. *Dead birds*. Watertown, Mass.: Documentary Educational Resources.
- . 1984. *Forest of bliss*. Watertown, Mass: Film Study Center, Harvard University.
- Goffman, Erving. 1974. *Frame analysis: An essay on the organization of experience*. New York: Harper.
- Grady, John. 1996. The scope of visual sociology. *Visual Sociology* 11(1): 10–24.
- . 1998. Towards a quantitative visual social science: The vision of Edward Tufte. *Visual Studies* 13: 74–84.
- Grant, Gerald. 1988. *The world we created at Hamilton High*. Cambridge, Mass.: Harvard University Press.
- Graves-Brown, P. M., ed. 2000. *Matter, materiality and modern culture*. London: Routledge.
- Greenblatt, Cathy Stein. 2004. *Alive with Alzheimers*. Chicago: University of Chicago.
- Greenfield, Patricia Marks. 2004. *Weaving generations together: Evolving creativity in the Maya of Chiapas*. Santa Fe, N.Mex.: School of American Research Press.
- Gusfield, Joseph. 1981. *The culture of public problems: Drinking-driving and the symbolic order*. Chicago: University of Chicago Press.
- Hagaman, Diane. 1993. The joy of victory, the agony of defeat: Stereotypes in newspaper sports feature photographs. *Visual Sociology* 6: 48–66.
- Halle, David. 1993. *Inside things*. Chicago: University of Chicago.
- Harper, Doug. 1982. *Good company*. Chicago: University of Chicago.
- . 1987. Working knowledge: Skill and community in a small shop. Chicago: University of Chicago Press.
- . 2001. *Changing works: Visions of a lost agriculture*. Chicago: University of Chicago.
- . 2002. Talking about pictures: A case for photo elicitation. *Visual Studies* 17: 28–49.
- Hindmarsh, Jon, and Christian Heath. 1998. Video and the analysis of objects in action. *Communication and Cognition* 31: 111–30.
- Hoskins, Janet. 1998. *Biographical objects*. New York: Routledge.
- Jackson, Bruce. 1977. *Killing time: Life in the Arkansas penitentiary*. Ithaca, N.Y.: Cornell University.
- Lakoff, George, and Mark Johnson. 1980. *Metaphors we live by*. Chicago: University of Chicago.
- Latour, Bruno, and Steve Woolgar. 1986. *Laboratory life: The construction of scientific facts*. Princeton, N.J.: Princeton University Press.
- Lesy, Michael. 2002. *Long time coming: A photographic portrait of America, 1935–1943*. New York: Norton.
- Lynch, Michael. 1998. The production of scientific images: Vision and re-vision in the history, philosophy, and sociology of science. *Communication and Cognition* 31: 213–28.
- Margolis, Eric. 1999. Class pictures: Representations of race, gender, and ability in a century of school photography. *Visual Sociology* 14: 7–38.
- Marshall, John. 1957. The hunters. In *in!Kung Series*, edited by John Marshall. Watertown, Mass.: Documentary Educational Resources.
- Mead, Margaret. 1995. Visual anthropology in a discipline of words. In *Principles of visual anthropology*, edited by Paul Hockings, 3–10. New York: Mouton de Gruyter.
- Miller, Daniel, ed. 1998. *Material cultures: Why some things matter*. Chicago: University of Chicago.
- Mitchell, W. J. T. 1986. *Iconology: Image, text, ideology*. Chicago: University of Chicago Press.
- . 1994. *Picture theory: Essays on verbal and visual representation*. Chicago: University of Chicago.
- Molotch, Harvey. 2004. *Where stuff comes from: How toasters, toilets, care, computers and many other things come to be as they are*. London: Routledge.
- Mumford, Lewis. 1934. *Technics and civilization*. New York: Harcourt Brace & Company.
- Nelson, Victoria. 2001. *The secret life of puppets*. Cambridge, Mass.: Harvard University Press.
- Orellana, Marjorie Faulstich. 1999. Space and place in an urban landscape: Learning from children's views of their social worlds. *Visual Sociology* 14: 73–88.

- Page, Roby. 2005. *Bike week at Daytona Beach: Bad boys and fancy toys*. Jackson, Miss.: University Press of Mississippi.
- Pink, Sarah. 2001. *Doing visual ethnography*. London: Sage.
- Prosser, Jon, and Dona Schwartz. 1998. Photographs within the sociological research process. In *Image-based research*, edited by Jon Prosser, 115–30. London: Taylor and Francis.
- Ragin, Charles C. 1992. 'Casing' and the process of social inquiry. In *What is a case? Exploring the foundations of social inquiry*, edited by Charles C. Ragin and Howard S. Becker. New York: Cambridge University Press.
- Ravenhill, Phillip. 1996. *Dreams and reverie: Images of otherworld mates among the Baule, West Africa*. Washington: Smithsonian Institution Press.
- Rich, Michael, and Richard Chalfen. 1999. Showing and telling asthma: Children teaching physicians with visual narrative. *Visual Sociology* 14: 51–72.
- Rossi, Peter H. 1988. On sociological data. In *Handbook of sociology*, edited by Neil J. Smelser, 131–54. Newbury Park: Sage.
- Rouch, Jean. 1955. *Les maîtres fous*. Watertown, Mass.: Documentary Educational Resources.
- Ruby, Jay. 1973. Up the Zambezi with notebook and camera: Or, being an anthropologist without doing anthropology... with pictures. *Program in Ethnographic Film Newsletter* 4: 12–14.
- Sandeen, Eric J. 1995. *Picturing an exhibition: The family of man and 1950s America*. Berkeley: University of California.
- Schechner, Richard. 1993. *The future of ritual: Writings on culture and performance*. New York: Routledge.
- Schneider, Sara K. 1996. *Vital mummies: Performance art and the store-window mannequin*. New Haven: Yale University Press.
- Schwartz, Barry. 1981. *Vertical classification: A study in structuralism and the sociology of knowledge*. Chicago: University of Chicago.
- Shanklin, Eugenia. 1979. When a good social role is worth a thousand photographs. In *Images of information: Still photography in the social sciences*, edited by Jon Wagner, 139–46. Beverly Hills: Sage.
- Sharrock, Wes. 1998. The practical management of visual orientation. *Communication and Cognition* 31: 229–42.
- Solnit, Rebecca, and Susan Schwartzenberg. 2000. *Hollow city: The siege of San Francisco and the crisis of American urbanism*. New York: Verso.
- Stigler, J. W., P. A. Gonzales, T. Kawanka, S. Knoll, and A. Serrano. 1999. *The TIMSS videotape classroom study: Methods and findings from an exploratory research project on eighth-grade mathematics instruction in Germany, Japan, and the United States*. Washington, D.C.: National Center for Education Statistics.
- Sudnow, David. 2001. *Ways of the hand: A rewritten account*. Cambridge, Mass.: MIT Press.
- Sullivan, Gerald. 1999. *Margaret Mead, Gregory Bateson, and Highland Bali*. Chicago: University of Chicago.
- Tufte, Edward R. 1983. *The visual display of quantitative information*. Cheshire, CN: Graphics Press.
- . 1990. *Envisioning information*. Cheshire, CN: Graphics Press.
- . 1997. *Visual explanations: Images and quantities, evidence and narrative*. Cheshire, CN: Graphics Press.
- Tukey, John W. 1977. *Exploratory data analysis*. Reading: Addison-Wesley.
- Turner, Patricia. 1994. *Ceramic uncles and celluloid mummies: Black images and their influence on culture*. New York: Doubleday/Anchor.
- Wagner, Jon. 1999. Beyond the body in a box: Visualizing contexts of children's action. *Visual Sociology* 14: 143–60.
- Warner, William Lloyd. 1962 [1953]. *American life: Dream and reality*. Chicago: University of Chicago.

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