

The Thomas Theorem and The Matthew Effect*

*My
Gene,
who will find his
foundational work
I draw upon variously
in this piece.
Appreciatively,
Bob*

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Eponymy in science is the practice of affixing the names of scientists to what they have discovered or are believed to have discovered,¹ as with Boyle's Law, Halley's comet, Fourier's transform, Planck's constant, the Rorschach test, the Gini coefficient, and the Thomas theorem.

This article can be read from various sociological perspectives.² Most specifically, it records an epistolary episode in the sociointellectual history of what has

¹ The definition of *eponymy* includes the cautionary phrase, "or are believed to have discovered," in order to take due note of "Stigler's Law of Eponymy" which in its strongest and "simplest form is this: 'No scientific discovery is named after its original discoverer'" (Stigler 1980). Stigler's study of what is generally known as "the normal distribution" or "the Gaussian distribution" as a case in point of his ironically self-exemplifying eponymous law is based in part on its eponymous appearance in 80 textbooks of statistics, from 1816 to 1976.

² As will become evident, this discursive composite of archival documents, biography of a sociological idea, and analysis of social mechanisms involved in the diffusion of that idea departs from the tidy format that has come to be prescribed for the scientific paper. This is by design and with the indulgent consent of the editor of *Social Forces*. But then, that only speaks for a continuing largeness of spirit of its editorial policy which, back in 1934, allowed the ironic phrase "enlightened Boojum of Positivism" (with its allusion to Lewis Carroll's immortal *The Hunting of the Snark*) to appear in my very first article, published in this journal better than 60 years ago.

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come to be known as "the Thomas theorem":³ "if men define situations as real, they are real in their consequences" (Thomas & Thomas 1928:572). More generally, that episode provides a strategic research site for examining certain substantive and methodological problems in the sociology of science. From the methodological perspective, it provides a prime example of the basic if presumably obvious precept that it is one thing to establish a phenomenon (i.e., show that something is empirically the case) and quite another to explain it. Obvious this may be but, as we shall see, the two are nevertheless easily (and, I believe, often) conflated. The episode also exhibits the risks involved in reductionist, single-factor explanations of a concrete social phenomenon (which becomes even more marked in *ex post* than in *ex ante* explanations). Finally, the episode provides an apparent instance of how sociocultural contexts of science and scholarship — in this case, the belated thrust of the civil rights movement toward equity for women — can make for an exclusive and premature interpretation that a particular cognitive phenomenon is sexist.

The cognitive phenomenon in this case consists of sociologists' frequent ascription of the Thomas theorem solely to W.I. Thomas rather than to both W.I. and Dorothy Swaine Thomas. I should emphasize from the start, however, that there is only incidental interest here in trying to adjudicate proprietary claims to this basic sociological idea, although the introduction of private archival materials may contribute to that result. Rather, the widespread accreditation of the Thomas theorem to W.I. Thomas alone holds interest for us here principally as a specific instance of a generic phenomenon in the reward-system of science and scholarship — what can be conveniently described as "the partial citation phenomenon," thus substituting four words for the approximately 20 words of its definition, i.e., the widespread accrediting by scientific and scholarly peers of an (actually or apparently) joint contribution to only a subset of the collaborators.⁴

Some forms of the partial citation phenomenon almost provide their own, intuitively evident, explanations. The partial citation of coauthors is hardly problematical, of course, for the rapidly increasing number of scientific articles,

³ As I have noted elsewhere (Merton 1984:282), the designation *Thomas theorem* "does not, of course, adopt the term *theorem* in the strict mathematical sense (as, say, with the binomial theorem). It refers, rather, to an idea that is being proposed or accepted as sound, consequential, and empirically relevant." In proposing the Thomas eponym for both mnemonic and commemorative purposes (Merton [1942] 1973:273), I had fastened on the term *theorem* rather than such less formidable terms as *dictum*, *maxim*, *proposition*, or *aphorism* in order to convey my sense that this was "probably the single most consequential sentence ever put in print by an American sociologist" (Merton 1976:174). In any case, the word *theorem* was rhetorically employed in the same broad sense that had the mathematically minded Hobbes referring in *The Leviathan* to "general rules, called theorems or aphorisms." (Reading this note, the mathematical statistician, Stephen M. Stigler, reminds me that the redoubtable seventeenth-century mathematician John Wallis — he of the Wallis theorem — had ample cause to destroy the pretensions of the mathematically minded Hobbes to being an actual mathematician.)

⁴ The word *citation* in the term *partial citation phenomenon* is to be construed broadly; not only as a formal reference in a note or bibliography but as any mode, including eponyms, of referring to previous scientific or scholarly work.

chiefly in the physical and biological sciences, with large numbers — at the extremes, literally hundreds — of listed coauthors (Science Watch 1995:1-2; Zuckerman 1968). Nor is it greatly problematical in cases of works by, say, four or five authors where the citation pattern of “et al.” has long since evolved in the world of scholarship to serve the shared convenience of publishers, editors, senior authors, and readers (if not the neglected collaborators). Nor is it problematical that citations of large-scale research reports often have the institutionalized senior investigator alone eponymized, as with The Kinsey Report or The Coleman Report. But the partial citation phenomenon is surely problematical in the limiting case, as with the book in which the Thomas theorem first appeared, when only one of two authors is regularly cited.

The equitable peer ascription of contributions is no minor matter in the social institution of science which has evolved a reward system that consists basically in rewarding scientists by having knowledgeable peers grant them public recognition for their distinctive contributions. All other rewards flow from it.⁵ And so it is that peers will experience and sometimes publicly express strong moral sentiments when they have reason to believe — as in the case of the Thomas theorem some have felt there is reason to believe — that the norm of rightful accreditation has been violated by systematically biased ascriptions in the pertinent community of scientists. For like all other social institutions, the institution of science has its (partly manifest, partly latent) normative framework, one that includes the norm of *equity* in peer recognition of contributions.

Along with letters exchanged some time ago between Dorothy Swaine Thomas and myself, the core archival materials in this study of the allocation of credit for the Thomas theorem consist principally of a more recent exchange of letters between another pair of collegial sociologists which has one of them interpreting this instance of the partial citation phenomenon as a “piece of (dare I call it?) institutionalized sexism . . . in the new era.” These letters — one of them, crisp and pointed by a social scientist of amply merited international fame; the other by myself, and replete with documentary exhibits running to a good-sized article in its own right — will be quoted verbatim.⁶ As the more voluble member of that epistolary pair, I shall subject that exchange to analysis in terms of patterns in the growth and transmission of knowledge that I have been investigating over the years: such patterns as “establishing the phenomenon” and the use of “strategic research sites” (Merton 1987); “the retroactive effect” in perceiving or imagining adumbrations and anticipations of ideas in

⁵For the paradigm which maintains that the institutional dynamics of science derives from the interaction of its “reward system” and its “normative structure,” see Part IV of Merton 1973.

⁶An apt procedure, one would think, since the sociological analysis of verbatim letters was introduced by W.I. Thomas and Florian Znaniecki; though, to be sure, on a rather larger scale running from page 217 to page 1114 of their classic work in five volumes, *The Polish Peasant in Europe and America* ([1918-20] 1927). For a critical examination of methodological problems involved in the use of letters in *The Polish Peasant*, see Blumer 1939:29-39.

the history of thought;⁷ patterns of primary and derivative or serial diffusion of knowledge (Merton 1995); "socially organized skepticism" in the domain of science and scholarship (Merton [1942] 1973:267-78,339-40); the place of eponyms (such as the Thomas theorem) and of other forms of peer citation in the reward system of science (Merton [1942] 1973:273-74; [1957] 1973:297-302; 1988:619-23); "oral publication" as distinct from publication in print (Merton 1980); "multiples" or independent multiple discoveries and inventions (Merton 1973; Ogburn & Thomas 1992) and the emergence of citation analysis (Garfield 1955; Garfield, Sher & Torpie 1964). Above all else, however, the partial-citation phenomenon of the Thomas theorem will be analyzed in terms of the Matthew effect (Merton & Zuckerman [1968] 1973;1988).

This epistolary exchange which involves contesting interpretations of this one case of the partial citation phenomenon also raises normative questions about the peer recognition of scientific and scholarly contributions that provides the ultimate social and moral, if not the legal, basis of intellectual property in science (Zuckerman 1988a:526-27).

(As we have just seen in preview, such analysis in terms of one's enduring thematic interests in the sociology of science is bound, alas, to entail an intemperate abundance of self-citation. It is some consolation to note, however, that disciplined citation analyses do not mistake self-citation as evidence of the peer recognition that is the ultimate coin of the domain of science and scholarship.)

Diffusion of the Thomas Theorem

Like other important sociological ideas, the Thomas theorem has had its adumbrations and partial anticipations. Recognition of the subjective component in human action has had a long history in sociological thought and a far longer history before we sociologists arrived on the historical scene. Among the Ancients, we need only recall Epictetus (*The Encheiridion* [c. 110 A.D.] 1926-28: II, 487, §5), stating that "What disturbs and alarms man are not actions, but opinions and fancies about actions." And if one has not had occasion to read Epictetus recently, his aphorism (theorem?) may be recalled from the still enduring eighteenth-century masterwork, *Tristram Shandy*, where Laurence Sterne quotes it — in Greek of course — on the title page. And among the Moderns, there is Schopenhauer ([1851] 1974:I, 326) also echoing Epictetus⁸ as he observes that "it is not what things objectively and actually are, but what they are for us and in our way of looking at them that makes us happy or unhappy." Be it said, however, that, as is generally the case with the *ex post*

⁷"Anticipations" refer to earlier ideas, formulations or findings that overlap later ones but do not focus upon and draw the same implications from them; "adumbrations," to earlier formulations or findings that, quite literally, foreshadowed later ones but only dimly and vaguely. On these patterns in the history of thought, see Merton [1949, 1957] 1968:13-25.

⁸Typically still for his time and place, Schopenhauer of course also echoed Epictetus in the original Greek and the derivative Latin rather than in his own native German.

spotting of adumbrations or anticipations, my having noticed those anticipatory passages is probably just another instance of the "retroactive effect" (in which undeveloped ideas that have remained in oblivion are later brought into the limelight only because new and clearly formulated ideas sensitize us to earlier, typically less developed, and previously ignored, versions).⁹ The chances are that I would not have taken note of those aphorisms (theorems?) by Epictetus and Schopenhauer — as quoted even in the various editions of *Tristram Shandy* on my bookshelves — had it not been for a half-century of close familiarity with the Thomas theorem.

Along with these venerable anticipations, the theorem also had a striking contemporary and neighboring version. In his lecture course at the University of Chicago, W.I. Thomas's colleague George H. Mead had observed in distinctly sociological terms that "If a thing is not recognized as true, then it does not function as true in the community." But the Thomas theorem and the Mead theorem experienced notably different cognitive fates. In virtually self-exemplifying style, the Mead theorem dropped into permanent oblivion even after its posthumous transition from "oral publication" in lectures to publication in print (Mead 1936:29). Not so with the Thomas theorem.

True, no notice of the theorem was taken in any of the reviews of *The Child in America* that appeared in the three principal American sociological journals of the time — the *American Journal of Sociology* (which was then not only produced and edited at the University of Chicago but was also the official journal of the American Sociological Society), *Social Forces* (at the University of North Carolina), and *Sociology and Social Research* (at the University of Southern California). But soon afterward, as we shall have occasion to see in detail, Kimball Young, the prolific author of textbooks in social psychology and sociology then at the University of Wisconsin, gave the theorem special notice by selecting it as an epigraph for chapters in two successive textbooks; one, in his widely adopted *Social Psychology* (Young 1930:397) and the other, in his edited volume, *Social Attitudes* (Young 1931:100). The Young epigraphs evidently become an early conduit for diffusion of the quoted sentence. At any rate, the very next year, the omnivorous sociologist Howard [P.] Becker, was interpolating the sentence twice in his amplified and Americanized edition of Leopold von Wiese's *Allgemeine Soziologie* ([1924] 1932:34,79) and faithfully reporting that it was being quoted from Young's *Social Psychology*.

As is often the way with the genealogy of ideas, various types of errors began to intrude with enlarged diffusion. Omnivorous reader though he was, Becker managed to commit a triple error when a dozen or so years later he ostensibly located the Thomas sentence on page 79 of the condensed one-volume edition of the Thomas and Znaniecki masterwork, *The Polish Peasant in Europe and America* ([1918] 1927), where it is not to be found. Not content with this mishap, Becker advanced the extraordinary conclusion that this nonexistent ghost appearance was "in content at least . . . probably Znaniecki's," this even

⁹"Undeveloped ideas" inasmuch as these earlier adumbrations or anticipations were not singled out, elucidated, or followed up by further theoretical or empirical inquiry, either by their original authors or by others.

though the concept of "definition of the situation" had appeared before *The Polish Peasant* and then endured continuously as basic in Thomas's conceptual framework but did not turn up at all, Polish colleagues assure me, in Znaniecki's early work and surely not in his later work in English.¹⁰

The Barnard sociologist Willard Waller (1938:20) introduced an error of another kind in the course of diffusion. He misquoted the Thomas dictum, understandably without citing its specific source, thus: "As Thomas has put it, 'If *people* define *things* as real, they are real in their consequences.'" In our own time of acute sensitivity to deliberately or unwittingly gendered terms, one is at first tempted to interpret Waller's substitution of *people* for *men* as a quiet but deliberate effort to de-gender the theorem. However, as one notices the further substitution of *things* for *situations*, it seems more likely that the de-gendering was the inadvertent result of a faulty memory.¹¹

In the same year as Waller's would-be quotation, an effort was made to pinpoint the lucid and elegant character of the formulation by describing it as "W.I. Thomas's sociological theorem" (Merton 1938:333). Like Young's quotations of the theorem, this almost casual allusion made no precise reference to the original source of what soon became abbreviated as "the Thomas theorem." The long-standing and largely continuing absence of such specific citations and texts persuade me that the widely neglected paragraphs which culminated in the Thomas theorem both require and merit repetition here. We note that the theorem caps the methodological case being made for use of

The behavior document (case study, life-record, psychoanalytic confession) [which] represents a continuity of experience in life situations . . .

[E]ven the highly subjective record has a value for behavior study. A document prepared by one compensating for a feeling of inferiority or elaborating a delusion of persecution is as far as possible from objective reality, but the subject's view of the situation, how he regards it, may be the most important element for interpretation. For his immediate behavior is closely related to his *definition of the situation*, which may be in terms of objective reality or in terms of a subjective appreciation — 'as if' it were so. Very often it is the wide discrepancy between the situation as it seems to others and the situation as it seems to the individual that brings about the overt behavior difficulty. To take an extreme example, the warden of Dannemora prison recently refused to honor the order of the court to send an inmate outside the prison walls for some specific purpose. He excused himself on the ground that the man was too dangerous. He had killed several persons who had the unfortunate habit of talking to themselves on the street. From the movement of their lips he imagined that they were calling him vile names, and he behaved as if this were true. *If men define situations as real, they are real in their consequences* (Thomas & Thomas 1928:572; italics added).

As we see, this essentially methodological observation draws upon the basic substantive concept of "defining the situation" which Thomas (1923:42-43;

¹⁰This statement will surely not be taken to detract from Znaniecki's major contributions to sociology which, however, were of quite other kinds than that represented by the theorem. My own appreciation of those contributions is summarized in Merton 1983.

¹¹On the phenomenon of unintended gendering and de-gendering of language, see Merton, "De-Gendering 'Man of Science,'" 1996.

1929:1-13) plainly regarded as his most significant contribution to the socio-psychological understanding of the formation of social personality and character. Seen in its immediate context, the memorable theorem turns out to be a generalization of a specimen of paranoid behavior. (As we shall also see in due course, Thomas largely confined himself to reiterating this example the only two other times he himself quoted the theorem, a singular circumstance that raises an obvious problem for future exploration).

The longtime absence of a correct reference to the source of the theorem in sociological writings quoting it also led me to conclude some time ago that it had become known to American sociologists and their students largely if not entirely through secondary discussions in print rather than through their having read the original text. This assumption was reinforced by inquiries over the years from colleagues near and far which, we shall see, asked for the exact source of what had been described and analyzed as "the Thomas theorem" in "The Self-Fulfilling Prophecy" (Merton 1948). How such secondary diffusion came to be and, in particular, how social mechanisms of *initial* diffusion operated through such pathways as sociocognitive networks will be examined in the last part of this article as we explain sociologically the early absence of precise citations to the theorem and how that in turn helped produce the partial citation phenomenon.

That once conjectural assumption that the theorem had largely become known through secondary sources has now been empirically confirmed in a study by R.S. Smith (1993) of "well over 100 introductory textbooks" of sociology which found only one of the 40 texts that quoted or paraphrased the theorem citing its source, replete with page number, while an unspecified number of authors actually cited "The Self-Fulfilling Prophecy" as a mediating source. Smith also found that most of the textbooks attributed the theorem to W.I. Thomas alone and the few that referred to the book in which the theorem appeared generally failed to cite Dorothy Swaine Thomas as its second author. These empirical findings led Smith to a type of judgment which we have noted is deeply imbedded in the normative framework of science about equity in scholarly attributions:

[S]ince it [the theorem] appears in a co-authored work, and no particular author is singled out as having written Chapter XIII [in which the theorem appears], it seems reasonable to suppose either author could have written this phrase. Consequently, *unless there is compelling evidence to the contrary*, it would seem proper scholarly practice to attribute these words to both W.I. Thomas and Dorothy Swaine Thomas (Smith 1993; I have inserted italics to underscore the scholarly care with which Smith allows for the possibility of countervailing evidence).

Having reported his empirical findings and having arrived at his contingent normative judgment, Smith goes on to propose possible explanations of this widespread practice of excluding Dorothy Swaine Thomas in referencing the theorem. This might be explained by poor scholarship on an individual level, although several of those involved are nationally and even internationally known authors. It can also be explained in terms of a structural issue — the genderization of the discipline as part of the process of professionalization. By not citing Dorothy Swaine Thomas these authors help sustain a view of sociology as historically a male domain (Smith 1993).

However, in mounting this crisp study of "Dorothy Swaine Thomas and the 'Thomas Theorem'" Professor Smith could not possibly have known that both his normative observation about the proper citation of coauthored work and his structural hypothesis of what might have led to the almost exclusive ascription of the eponymous theorem to the male Thomas at the expense of the female Thomas had been independently and concisely stated, without benefit of systematic empirical study, in a letter written some five years before by a social scientist of amply merited international fame.

The Imputation of "Institutionalized Sexism"

That letter, addressed not to me but to David Sills, with whom I was then collaborating on the volume *Social Science Quotations* (Sills & Merton 1991), holds varied historical, methodological, and sociological interest as it briefly describes a search for "the original source of the Thomas theorem." It bears not only upon the early history of this important sociological idea but also upon the methodological requirement of putting to empirical test *ex post* hypotheses evoked by data that are, of course, initially congruent with them. Moreover, as I have hinted, the plainly informal letter and my lengthy thematic responses to it exemplify various patterns in the transmission of knowledge that I had been exploring for some time. Not least in point, the letter culminates in the composite normative and explanatory conclusion that ascribing the theorem to W.I. Thomas alone amounts to sexist eponymy.

Here, then, is the short evocative letter in its verbatim entirety.

August 16, 1988

David Sills
Social Science Quotations
111 Eighth Ave., Suite 1503
New York, NY 10011

Dear David,

I should have the X . . . and Y . . . citations to you shortly. In the meantime, I bring to your attention an interesting footnote in the sociology of sociology. About eight months ago, I was desperately looking for the original source of the Thomas theorem. I could find it nowhere, except in Merton who used it without a footnote. I finally was about to resign myself to using as my citation: Cited in Merton, etc. Then your little brochure, "Social Science Quotations: Guidelines" arrived, and lo and behold, on p. 15, as one of your examples, you use the Thomas theorem, with a proper citation.

Well trained as I am in scholarly skepticism of sources, I took out the book from the library. And lo and behold, you are in error, an error which not only you but Merton and indeed the entire U.S. (world?) scholarly community have made consistently. For the book was not written by W.I. Thomas, but by William I. and Dorothy Swaine Thomas. Nothing in the book indicates that he wrote some chapters and she others. They are joint authors. And, at least in *Social Science Quotations*, this piece of (dare I call it?) "institutionalized sexism" should not be perpetuated.

Yours in the new era,

[I anonymize the author of this informal note as "Skeptical Social Scientist" (hereafter SSS)]

Patterns in the Transmission of Scientific Knowledge

Although this letter was addressed to David Sills, I undertook to respond to it since I was the one who had long ago elected to attribute the theorem exclusively to W.I. Thomas and since, as coeditor of *Social Science Quotations*, I had prepared the entry on the theorem as a specimen quotation in the "Guidelines" for contributors to that volume. I soon found myself resonating to the considerable array of cognitive and normative ideas and problems packed into the brief but complex letter that exemplified diverse patterns in the normative framework of science and the transmission of scientific knowledge. Herewith, then, a few of those patterns.

PATTERNS OF KNOWLEDGE DIFFUSION

To begin with, it will be noticed that SSS matter-of-factly adopts the eponym "Thomas theorem" which had been introduced a half-century before to signal the assessed importance of the reverberating Thomas sentence. It is unlikely, however, that SSS had come upon that eponym where it first appeared since that was in an article published long ago (Merton 1938) in the *Philosophy of Science*, a journal presumably not often read by social scientists of a much later time. Nor is it likely that this same social scientist writing in the late 1980s would have come upon the eponym in 1948 when the theorem was being analyzed and distinguished from the related concept of "The Self-Fulfilling Prophecy" in *The Antioch Review*, another journal not notable for its social science readership. I am inclined to believe, therefore, that like those others who had let me know that this was the case for them, SSS had come upon the eponym in one or another of the three editions of *Social Theory and Social Structure* (Merton 1949, 1957, 1968) which had included both those articles. In accord with the R.S. Smith (1993, 1995) finding that this book had become something of a conduit for the Thomas sentence, here is SSS "desperately looking for the original source of the Thomas theorem" and about to adopt what some might describe as the honorable but, for many, the also unappetizing expedient of quoting from a mediating source; to wit: "Cited in Merton, etc." (just as we have seen Howard P. Becker do some 60 years before in quoting the theorem via Kimball Young). As indicated by SSS and others, this citational expedient had resulted from the continued absence of any precise reference to the original source in all three editions of *Social Theory and Social Structure*.¹² Fortunately, SSS informs us, *Guidelines for Contributors to Social Science Quotations* came along in the nick of time to provide "a proper citation."¹³

¹²As we shall see from archival evidence yet to be examined, both adventitious and theoretical reasons made for this studied failure to supply the originally well-known reference to the exact source of the Thomas theorem in *The Child in America*.

¹³This, then, may have been the first anticipatory case, even before publication, in which *Social Science Quotations* fulfilled a manifest function that was described this way: "Of obvious use to readers coming upon quotations new to them, exact references may also prove useful for swiftly locating the more familiar quotations. By leading readers back to the sources, such detailed references can help them place even extended quotations in their larger contexts. In

Although this straightforward scholarly letter reports full familiarity with the substance of the Thomas theorem and with the eponym, it makes clear that such knowledge did not derive from having read the original formulation. Thus, the letter provides a distinct case of the basic difference between the *primary and the derivative or serial diffusion of ideas*, a subject of distinct interest to those of us at work on patterns of diffusion in science and technology (Coleman, Katz & Menzel 1966; Merton 1989, 1995; Rogers [1962] 1995; Zuckerman 1989). When a first-hand quotation does not provide an exact citation to its source, it cannot, of course, make for independent recourse to the original source and later derivative or serial diffusion can only reproduce the quotation as mediated. This, in turn, raises the sociological as well as normative question, which is here only introduced rather than explored: how does it happen that, unlike SSS who was ready to cite the mediated source, many of the authors who were plainly quoting the theorem derivatively rather than directly have not done so? In short, is there a norm for citing mediated references and if not, why not?

Is There A Norm for Citing Mediated References?

SSS's announced intention of citing his mediating source of the Thomas theorem may be defined by some peers as supererogatory, for there are evidently no well-established norms governing such citation behavior. At least, not if one may judge from the comparative rarity of citations to encyclopedias and other reference works in scholarly publications. Or more specifically, if one may judge from the frequency with which even mature scientists and scholars have written sociologists of science to ask whether or how to ascribe "proper credit to an author for drawing one's attention to a valuable reference."¹⁴

These normative questions about mediated references had not yet crystallized back in mid-century when the sometime sociologist of science Norman Kaplan (1965) introduced the generic problem of "the norms of citation behavior." Nor have these questions about *mediated references* yet been examined by the founder of the *Science Citation Index* and of citation analysis, Eugene Garfield (1983, 1995), in his longtime and still ongoing examination of how the norms and practices of citation are acquired. (See also Cronin 1984.) However, we now see how this detail in the collegial letter from SSS tacitly directs us to a generic, difficult, and important sociological problem: the dynamics of the emergence of a new social norm; (on the generic problem, see Coleman 1990). Just as another detail tacitly directs us to the institutionalized norm of socially organized skepticism.

this way, a book of quotations can extend an open invitation to the further reading or rereading of the original texts, beyond the quotations themselves" (Sills & Merton 1991: xvi).

¹⁴For example, the query quoted in the text which was addressed in the first instance to Eugene Garfield and derivatively to me by the author of "Thoughts on Eponyms," Howard B. Burchell, M.D. (1985).

SOCIALLY ORGANIZED SKEPTICISM

Having long ago identified this technical and moral norm embedded in the culture and the social structure of science (Merton [1942] 1973:267-78;339-40), I can only applaud SSS's manifest adherence to it. The term and concept, *socially organized skepticism*, refers to institutionalized arrangements for the critical scrutiny of knowledge claims in science and learning that operate without depending on the happenstance skeptical bent of this or that individual. The process of socialization in the culture of science joins with such social arrangements as published and unpublished "peer review" that serve as agencies of social control which see to it, among other things, that authors generally abide by the norm of indicating their predecessors and sources. That norm has many cognitive and social functions; Garfield (1983, 1995) lists 15 of them. Among the manifest cognitive functions are those of enabling scientists to consult prior sources to see whether they have been correctly utilized and whether they also provide pertinent information not included in the mediating source. A manifest social function is to pay homage to pioneers and other predecessors, along with its largely latent and correlative function of thus helping to maintain the reward system of science which, like all institutional reward systems, initiates or reinforces incentives for role performance.

Exemplifying socialization in this normative practice of organized skepticism, this committed scholar reports "having been well trained . . . in scholarly skepticism of sources," and goes on to use the secondary work of *Social Science Quotations* as a means of getting to the original source of the Thomas theorem that can then be examined at first hand. This soon led SSS to the discovery that the book in which the theorem first appeared was actually written by William I. Thomas and Dorothy Swaine Thomas and that, in turn, led (as we have seen that, in effect, it later led R.S. Smith) to the conclusion that ascribing the theorem to W.I. Thomas alone amounts to "institutionalized sexism."

This suggests the hypothesis that such a conclusion is especially apt to be drawn in a time of socially and culturally induced sensitivity to all manner of discriminatory and exploitative -isms. For, as the sociology of science has noted from its earliest days, "the question of the relative importance of intrinsic and external factors in the determination of the foci of scientific interest has long been debated" (Merton [1938] 1970:199) but there is no question that social and cultural contexts do variously influence problem-choice and hypothesis-choice (Zuckerman 1978, 1994). In that process, certain contextually influenced hypotheses rather than others soon leap to mind as plausible. In this case, it appears, the context-laden hypothesis that the failure to ascribe the Thomas theorem to both Thomases must be an expression of sexism. But of course that hypothesis raises the methodological question whether joint authorship of the book in which the theorem first appeared is enough to conclude that the theorem was itself a joint product. In self-exemplifying style, the cognitive norm of socially organized skepticism thus requires us in turn to examine that conclusion by probing other scholarly sources and personal archives, as we shall be doing in due course.

Meanwhile, one can see from the SSS letter how adherence to the norm of organized skepticism can lead to gratifying experiences that presumably

reinforce continuing adherence to it. Not least, the special pleasure that comes from erasing errors in received knowledge. For the detection of long-accepted error also has its social and personal functions. It not only contributes to the common wealth of science but results in system-induced heightened esteem by knowing colleagues. I too once found myself resonating to the kind of Eureka glow that evidently came to SSS upon discovering the unscholarly error that "not only [Sills] and Merton [but] indeed the entire U.S. (world?) scholarly community have made consistently." I still recall the scholarly thrill of first tentatively spotting and then actually demonstrating a centuries-long error in received scholarship. As it happens, this episode also involved the correct ascription of a memorable sociocultural aphorism (theorem?) to its actual author(s). The aphorism "If I have seen further, it is by standing on the shoulders of giants" — which had diffused widely in the literary as well as the scientific community, especially after it became known that Isaac Newton once made it his own — had long been ascribed to what I demonstrated was a phantom source in a work by the ancient poet Lucan rather than to its actual author, the twelfth-century Bernard of Chartres. Much along the same lines that SSS feared might be the case with the ascription of the Thomas theorem to W.I. Thomas alone in the then forthcoming Sills and Merton reference book, *Social Science Quotations*, the ubiquitous reference book Bartlett's *Familiar Quotations* had been perpetuating the error of an ancient source for the Newton aphorism — this, in no fewer than seven editions for almost a century. In the latter case, it became a scholar's comfort to find that even in this postmodern age of deconstruction, evidentiary truth can still prevail. For I can happily report that only thirty years or so after that ghastly error of a ghostly source had been demonstrated in *On the Shoulders of Giants* (Merton [1965,1985] 1993:246-60), it was finally corrected in the fine sixteenth edition of Bartlett's ([1882] 1992:281b) by its new scholarly editor, Justin Kaplan. And, in accord with the norm governing scholarly acknowledgment, the correction was made with due reference to that long drawn-out and digressive documenting work of mine.

But if the editor of Bartlett's *Familiar Quotations* saw the light and rectified what had been laboriously shown to be a fossilized error of faulty scholarship, not so, it appears, with the editors of *Social Science Quotations*. In unyielding style, they decided to continue ascribing the Thomas theorem to W.I. Thomas alone. This, despite the advance warning by their colleague-at-a-distance that to do so would not only perpetuate an almost universal error of quite unscholarly attribution but would amount to a "piece of 'institutionalized sexism.'" As we shall soon see in detail, that apparently intransigent decision was based on fortunate access to a personal archive.¹⁵

¹⁵This, however, is manifestly the place to anticipate the detailed documentary analysis a bit by replicating a memorandum on this decision dated "26 December 1989":

THE THOMAS THEOREM
Canonical Version

To: David
From: Bob

It seems to me that we should give readers or browsers the fruits of our unique documented knowledge that though the theorem appeared in the jointly written *The Child in*

Those recent observations by SSS and R.S. Smith on seeming inequities in the citation history of the Thomas theorem provide yet another specimen of a recurrent pattern in the domain of science and scholarship, to wit the pattern of multiple independent observations, discoveries, and inventions.

The Pattern of Multiple Independent Observations, Discoveries, and Inventions

As is well known, a longstanding theory of the development of science and technology is rooted in the theoretically strategic fact of the multiple and independent appearance of essentially the same scientific observation, discovery or invention; what, for brevity's sake, can be described as a "multiple" (Merton 1961, 1963). This pattern of independent multiples has been found to hold for all manner of cognitive contributions, ranging from the great through the intermediate and small to the trivial. An apparent example of the truly trivial multiple is provided in the triply independent observations by SSS (1988), Smith (1993), and myself (Merton 1976, [1948] 1982) that the Thomas theorem was being ascribed solely to W.I. Thomas, typically without even collateral reference to Dorothy Thomas. To situate the specific empirical case in theoretical terms, the widespread citation pattern of the Thomas *theorem* was identified at the outset of this retrospective article as an instance of the partial citation phenomenon — the delimited accrediting of a presumably joint contribution to a subset of the collaborators.¹⁶ Whether this example of a multiple in the ongoing history of the Thomas theorem is as *theoretically* trivial as it is surely empirically trivial will become evident only upon examining the apparent counter-example of the typically full rather than partial citation of the important Ogburn-[Dorothy] Thomas (1922) paper on independent inventions. (On "the trivial and the important in sociology," see Merton [1961] 1973:59-62; 1987:16-19.)

America, it was nevertheless written solely by W.I. I won't burden you with another copy of the 14-page gloss on that fact when we were accused of 'institutionalized sexism' in having ascribed it wholly to W.I. in the Guidelines to Contributors.

I believe that the quotation should be ascribed to W.I. just as it is in the Guidelines. Plainly, a more extended arrow [our idiomatic term for explanatory notes appended to quotations] is needed to explain the lone ascription. It might read this way:

The Child in America 1928:572 — Although the 'Thomas theorem' appears in this book written jointly by W.I. Thomas and Dorothy Swaine Thomas, it is ascribed to him alone since Dorothy Thomas reported [insisted?] in a letter to one of the editors that she had done only the statistical portions of the book and that "the concept of 'defining the situation' was strictly W.I.'s."

Of course, this could be condensed — or extended!
[In the event, this explanatory note was neither condensed nor extended but substantially reproduced in *Social Science Quotations* .]

¹⁶As we shall see when we turn to the problem of explaining rather than merely identifying instances of the partial citation phenomenon, they often derive from the Matthew effect.

The Evocative SSS Letter in Retrospect and the RKM Letter in Prospect

SSS's succinct letter of 1988 along with the Smith oral publication of 1993 have thus provided much grist for the sociological mill as we focus on the normative question of proper ascription of the Thomas theorem. What SSS described as "an interesting footnote in the sociology of sociology" reflects various manifest and latent patterns of peer interaction that obtain within the institutional framework of science and scholarship. And as we shall now see, the extensive letter in response examines the *normative issues* raised by SSS, supplies previously unpublished archival evidence about the respective roles of W.I. and Dorothy S. Thomas in formulating the Thomas *theorem*, and addresses the theoretical and methodological problems involved in trying to explain this specimen of the *partial citation phenomenon*. It will come as no surprise, of course, to find that, like the SSS document, this one also exhibits patterns that have been identified in the sociology of science. And so, like the letter from SSS, herewith reproduced verbatim, it too will be subjected to ongoing commentary in discursive footnotes and bracketed text.

RKM TO SSS: A VERBATIM DOCUMENT ON THE THOMAS THEOREM AS AN INSTANCE OF THE PARTIAL CITATION PHENOMENON

SOCIAL SCIENCE QUOTATIONS

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BIBLIOGRAPHER ROBIN JOHNSON

10 September 1988

Dear [SSS],

I want to add my thanks to David's for your willingness to put together a batch of quotations from X----- and Y----- . Knowing that I had been thinking of a much fuller annotation in SSQ for "The Thomas Theorem," David has asked me to respond to your "footnote in the sociology of sociology" concerning the proper attribution of the theorem. I'm glad to try my hand at that since it should help me move toward a proper annotation.

To begin with, you are surely not alone in having searched in vain for the prime source of the Thomas Theorem. As you say, I failed to give a specific reference when I first happened to refer to it as a theorem back in the 1930s and 40s. As a result, I've periodically received requests for the precise reference. I enclose such a fairly recent inquiry [as Exhibit 8], this one from Cynthia Epstein (who I know won't mind my including hers as a specimen document).

Now this is just the sort of information which David and I intend to have the scholarly apparatus of SSQ make instantly accessible. As you note, even our little

brochure, GUIDELINES TO CONTRIBUTORS, does provide "a proper citation" to the theorem. But then, having exercised a proper "scholarly skepticism of sources" by looking up the cited book source for yourself — this being the kind of behavior conforming to the norm of "organized skepticism" which I proposed as a major element in the social institution of science and scholarship back in the early 1940s — you go on to report your findings in these words:

Lo and behold, you [David Sills] are in error, an error which not only you but Merton [too] and indeed the entire U.S. (world?) scholarly community have made consistently. For the book was not written by W.I. Thomas, but by William I. and Dorothy Swaine Thomas. Nothing in the book indicates that he wrote some chapters and she others. They are joint authors. And, at least in the Social Science Quotations, this piece of (dare I call it?) 'institutionalized sexism' should not be perpetuated.

To make it clear that your observation registers a fairly newfound [general] sensitivity to the matter of sexism, you sign off as

"Yours in the new era,"

[It will be observed that in one respect, the otherwise clear-spoken Skeptical Social Scientist is here rather puzzling. Having noted in the first paragraph of the letter that the *Guidelines for Social Science Quotations* which Sills and I had sent along to potential contributors has "a proper citation" to the source of the Thomas theorem, that plainly assiduous scholar nevertheless goes on to declare that we, like "the entire U.S. (world?) community" have consistently erred in ascribing *the book* to W.I. Thomas alone. My response to this puzzle took this form:]

Now, you are altogether right of course in observing that the book in which the Thomas theorem first appears — THE CHILD IN AMERICA: BEHAVIOR PROBLEMS AND PROGRAMS (New York: Knopf, 1928) — was "not written by W.I. Thomas, but by William I. and Dorothy Swaine Thomas." Indeed, you will find that our SSQ brochure indicates as much in its list of sources of the specimen quotations on page 19. (It refers to W.I. and Dorothy S. Thomas, following the format of the INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL SCIENCES. But I allowed friendship to taint scholarly precision. All his friends referred to him as "W.I.", never as "William I." and W.I. clearly preferred that usage [as, we shall see, did his collaborator Dorothy]. But we should have cited him as he appears on the title page, not in this misplaced friendly but unscholarly fashion. As the editor of the IESS in which SOCIAL SCIENCE QUOTATIONS will appear as Volume 19, David may overrule me on this [as in the event, he did] since I note that the biographical entry in Volume 16 lists the book as having been written by W.I. Thomas and Dorothy S. Thomas. And I recall that the authoritative volume, edited by Ed Volkart for the Social Science Research Council back in the early 1950s, referred on the title page to the "Contributions of W.I. Thomas to Theory and Social Research," not to William I. Perhaps too many old friends of W.I. have improperly subordinated scholarship to friendship. But this is scarcely the matter central to our discussion. We are in thorough agreement, then, that the book was written by the two Thomases.

And you are also entirely correct in reporting that "Nothing in the book indicates that he wrote some chapters and she others. They are joint authors." There is nary a word in the book stating who thought or wrote what.

All this leads you to conclude that our ascribing the theorem to W.I. alone, rather than to both W.I. and Dorothy, is plainly a case of sexism which may become further institutionalized by the medium of SOCIAL SCIENCE QUOTATIONS. And you remind us that we have entered a new era where old-style sexism no longer goes.

Still, I am confident that as a scholar given to the careful sifting of fact from fable, you are ready to reconsider your initial interpretations in light of new evidence. In this case, your double indictment of David and me as guilty of scholarly error and of sexist bias to boot. With that in mind, I shall submit several¹⁷ exhibits in the hope that you will want to withdraw both accusations (not that any of us are wholly free from error or immune from the contagion of inadvertent or of institutionalized bias).¹⁸ For we both surely agree with those wise words of the 12th-century William of Malmesbury (much admired by my mentor, the dean of historians of science, George Sarton [1931, I:255] who wrote of him [that] "He was the best chronicler of his time; the first one after Bede who tried not only to chronicle events but to explain their causal relations": "Throw out such dubious stuff and gird ourselves for a factual narrative." (Alas, my ancient notes fail to note the work in which this quotation [from Malmesbury] is to be found.)

Exhibit 1 [*The Thomas Theorem and the Matthew Effect*]

The first exhibit bearing on the case of the Thomas Theorem is drawn from my piece, "The Matthew Effect in Science," (*SCIENCE*, 5 January 1968, vol. 159, 55-63, as this was slightly amplified when reprinted in my collection of papers, *THE SOCIOLOGY OF SCIENCE* (University of Chicago Press 1973). By way of orientation, I should report that what I described as 'the Matthew effect' (after Matthew 13:12 and 25:29)¹⁹ consists in the accruing of greater recognition by peers for particular scientific or scholarly contributions to scholars of great repute and the withholding of such recognition from [their collaborating] scholars who have not yet made their mark. Here it is being suggested that the Matthew effect might have operated in the very case which is of central interest to us at the moment. Thus:

The problem of achieving a public identity in science may be deepened by the great increase in the number of papers with several authors in which the role of novice collaborators becomes obscured by the brilliance that surrounds their illustrious coauthors. Even when there are only two collaborators, the same obscurant effect may occur for the junior who exhibits several "inferiorities" of status. The role ascribed to a doubly or trebly stigmatized coauthor may be diminished almost to the vanishing point so that, even in cases of later substantial achievements, there is little recognition of that role in the early work. Thus, to take a case close to home. W. I. Thomas has often been described as the sole author of the scholarly book *The Child in America*, although its title page unmistakably declares that it was written by both William I. Thomas and Dorothy Swaine Thomas. It may help interpret this recurrent misperception to consider the status of the collaborators at the time the book was published in 1928. W. I.

¹⁷As the reader will soon notice, these documentary exhibits turned out to be a good many more than merely "several."

¹⁸SSS had no way of knowing that I would find this charge of potential "institutionalized sexism" particularly distressing. For it was back in the early days of the civil rights movement — a decade or so before the Civil Rights Acts of 1957 and 1960 — that I had attempted to identify and to analyze the social phenomenon of "institutionalized discrimination" as distinct from acts of discrimination by *individuals* (Merton 1948a: 120, 101). That had seemed to me a fundamental sociological distinction then as it seems to me still.

¹⁹By way of reminder: "Unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath."

Thomas, then 65, was president of the American Sociological Society in belated acknowledgement of his longstanding rank as dean of American sociologists, while Dorothy Swaine Thomas (not to become his wife until seven years later) was subject to the double jeopardy of being a woman of sociological science and still in her twenties. Although she went on to a distinguished scientific career (incidentally, being elected to the presidency of the American Sociological Society in 1952), the early book is still being ascribed solely to her illustrious collaborator even by ordinarily meticulous scholars.¹⁹

19. See the ascriptions of the book, for example, in Alfred Schutz. *Collected Papers*, 2 vols., edited and with an introduction by Maurice Natanson (The Hague: Martinus Nijhoff, 1962), 1:348, n71; Peter McHugh, *Defining the Situation* (Indianapolis: Bobbs-Merrill Co., 1968), p. 7.

Exhibit 2 [*Why I do not take the Alfred Schutz ascription of the book to W.I. alone as ipso facto evidence of a sexist bias*]

The preceding quoted footnote indicates that even so meticulous a scholar as Alfred Schutz (1962:1, 348, n. 71) has managed to ascribe the salient book solely to W.I. To obviate any need for you to search out the passage in which he does so and thanks to our home photocopier, I Canonize it here (as I should perhaps have done in the published note):

The "definition of the situation" refers to the so-called "Thomas theorem" well known to sociologists: "If men define situations as real, they are real in their consequences."⁷¹

⁷¹ It was first developed by William Isaac Thomas, in (his) book, *The Child in America: Behavior Problems and Programs*, New York, 1928, p. 572. See also W. I. Thomas, *Social Behavior and Personality*, edited by E. K. Volkart, Social Science Research Council, New York, 1951, pp. 14 and 80ff.; the term "Thomas Theorem" was coined by Robert K. Merton, *Social Theory and Social Structure*, Glencoe, 1949, 179.

You will notice at once the emphatic though probably unintended way in which, the to-me admirable scholar, Alfred Schutz, casts Dorothy Thomas into limbo by ascribing not merely the Thomas Theorem but the book to W.I. alone. Indeed, the fateful masculine pronoun in the phrase "his book" would seem to lend grist for your mill of sexism at work in the case of the Thomases. Nevertheless, as you see from my reference to Schutz's error in attributing the book wholly to W.I., I do not impute a sexist bias that made for the error. The reason? Our now fairly extensive studies of the Matthew effect in collaborations among scholars of greatly differing standing in the field have found this to operate quite regularly among male collaborators and among female collaborators as well. (Which is not to say, of course, that sex or gender does not affect the probability of achieving recognition for one's scientific or scholarly work; the intensive studies of men and women scientists by Harriet Zuckerman and Jonathan Cole over the years being the

basis for that statement.)²⁰ In view of all this, I adopted the clinical hypothesis that Schutz's ascription of the book to W.I. alone was probably an instance of the Matthew effect rather than a sexist predilection.

Exhibit 3 [*Wherein I reiteratively ascribe the theorem to W.I. alone and absolve the theorem of total subjectivism*]

This exhibit has me [once again] emphatically ascribing the theorem, *not* the book, solely to W.I., even though it appeared in a co-authored book. This I have done regularly since its logical character and, I confess, its assessed importance first led me to describe it as "The Thomas Theorem". (This was not, as Alfred Schutz understandably cites it in his foregoing footnote, in 1949 but back in 1938. But then, there was not the least reason for this colleague at-a-distance to know that the term had appeared earlier in my article, "Science and the Social Order" [Merton 1938:331-332]).

You will note that the following passage, again photo-copied to save you confirming search, connects the theorem to other formulations but singles it out as the most succinct and memorable formulation of much the same sociological idea. But I must not digress into questions of sociological theorizing. Here, then, is a pertinent fragment [drawn] from a piece of mine titled "Social Knowledge and Public Policy," first published in 1975 and reprinted in Merton [1976]; the fragment appears on pages 174-175, 177:

The Hazards of Subjectivism

The idea of the subjective component in human action has a long history in sociology and had an even longer history before we sociologists arrived on the historical scene. It is an idea, moreover, that has been formulated in various traditions of sociological thought: in the notion of *Verstehen* (roughly: intuitive understanding) advanced by Max Weber (and many others influenced by him), Robert MacIver's "dynamic assessment," Florian Znaniecki's "humanistic coefficient," Talcott Parsons's "voluntaristic theory of action," and Schutz's "phenomenological perspective." The idea was succinctly formulated by W. I. Thomas in what is probably the single most consequential sentence ever put in print by an American sociologist:

If men define situations as real, they are real in their consequences.²⁰

Now, it is one thing to maintain, with Weber, Thomas, and the other giants of sociology, that to understand human action requires us to attend systematically to its subjective component: what people perceive, feel, believe, and want. But it is quite another thing to exaggerate this sound idea by maintaining that action is *nothing but* subjective. That extravagance leads to sociological Berkeleyanism (the allusion being, of course, to the English champion of philosophical idealism, not to an American geographic or academic place). Such total subjectivism conceives of social reality as consisting *only* in social definitions, perceptions, labels, beliefs, assumptions, or ideas, as expressed, for example, in full generality by the criminological theorist, Richard Quinney, when he writes that "We have no reason to believe in the objective existence of anything."²¹ A basic idea is distorted into error and a great injustice is visited upon W. I. Thomas whenever his theorem is thus exaggerated.

Exaggeration of a seminal truth produces its own brand of error. Total subjectivism, which maintains that only social definitions of the

²⁰Cole (1979), Cole and Zuckerman (1984), [Zuckerman, Cole and Bruer (1991), Zuckerman and Cole (1994)].

situation (or other subjective equivalents) determine the character of human action and its consequences, in effect manages to transform the Thomas Theorem into this fallacious maxim:

If men do *not* define situations as real, they are not real in their consequences.

...To correct the imbalance that comes with total subjectivism and to restore the objective components of social situations to their indispensable place, we plainly need this counterpart to the Thomas Theorem:

And if men do *not* define real situations as real, they are nevertheless real in their consequences.

You evidently consider this ascription of the theorem wholly to W.I. (with an allusion to Dorothy Thomas only in a footnoted citation to the book)²¹ as *prima facie* evidence of "sexism." In this case, however, presumably an expression of personal rather than "institutionalized sexism." But I urge you to withhold reiteration of this harsh impeachment until you have examined Exhibits yet to come.

Exhibits 4 and 5 [*Which bear renewed witness to an longtime effort to deter the ascribing of sexism to scholars who attribute the theorem solely to W.I.*]

A few prefatory remarks before I introduce these almost identical exhibits.²² Nearly six decades ago, I elected to focus on social structures, social patterns, and social processes in the domain of science and scholarship — not a subject of immense scholarly interest back then. And, as you surely have no cause to know, some thirty years ago I first tried to identify the institutionally distinctive reward system of that domain since it seemed to me to provide part of the dynamics and patterning of scientific work. That was set out in some detail in a longish paper titled "Priorities in Scientific Discovery" (1957). Part IV of *THE SOCIOLOGY OF SCIENCE* (1973), designated as "The Reward System of Science," collects a variety of my articles focussed on the workings of that system. Among other things, that 1957 piece proposed the strongly stated hypothesis that contradictions

²¹ In retrospect, I note that SSS and, for that matter, R. S. Smith in his 1993 paper, along with countless others before and after them might have obviated their continuing search for the provenance of the theorem had they happened upon Volkart's reprinting of the concluding chapter back in 1951 (Thomas 1951) or even this citation to *The Child in America* in 1975. But as George J. Stigler's (1961) seminal paper, "The Economics of Information" led us to see both in principle and in fact, even in our new age of advanced information-technology, achieving retrieval of sought-for information can exact prohibitive costs in terms of time, energy, or money.

²² This archival essay-letter, which was plainly not intended for publication, had adopted "the non-linear, advancing-by-doubling-back Shandean Method of composition" inaugurated by Laurence Sterne in his immortal eighteenth-century *Tristram Shandy* and hesitantly adapted, just two centuries later, in my own "Shandean Postscript," *On the Shoulders of Giants* (which, it may be remembered, turned up in the introductory pages of this paper as I was empathically resonating to the manifest pleasure expressed by SSS upon discovering what was taken to be the universal error of attributing the Thomas theorem to W.I.). Sterne's *Tristram Shandy* had drawn upon the technique of "stream of consciousness" long before William James had formulated that apt metaphoric concept in his monumental *Principles of Psychology* ([1890] 1950, I: 239) and longer still, before James Joyce and, to a degree, Virginia Woolf had put that technique to work in their novels.

between the reward system and the normative system of science made for such social pathologies as the occasional felonies of plagiarism and the creation of fraudulent data. (I stray from the subject in hand to mention this only because of the intense current interest, both scholarly and popular, in such pathological phenomena in science. Back in the 1950s, that effort to identify the varieties of misbehavior in science and to theorize about their systemic sources apparently seemed like little more than sociological muckraking.)²³

Back to our immediate subject, I also report that Part V of the same volume, *THE SOCIOLOGY OF SCIENCE*, is given over to an examination of "The Processes of Evaluation in Science." As one would suppose, it includes the article on the Matthew effect and other pieces devoted to theoretically derived and empirically investigated patterns of [peer] recognition in science.

I report these longstanding interests, in supremely egocentric style, for a reason. These ¶s are designed to provide a context for the pair of exhibits, 4 and 5. From that context it can be inferred that I've had more than a friendly and ad hoc interest in the peer perceptions of my old, much admired, friends, W.I. and Dorothy Thomas. And so, as [the preceding exhibit and] those [following] exhibits testify, I have gone into print, from time to time, to get the story straight about the source of the Thomas Theorem.

The essential step, it seemed to me in light of certain patterns that occasionally emerge in the world of scholarship, was to provide a kind of anticipatory prophylaxis,²⁴ in print, directed against easy misinterpretations and harsh indictments of scholars who attributed the theorem to W.I. rather than to both W.I. and Dorothy. Perhaps getting the facts in print would preclude such indictments based on skimpy *prima facie* evidence. Thus:

Exhibit 4 [Evidence that my own attribution of the Thomas Theorem to W.I. alone was neither 'sexist' nor a case of the Matthew effect]

20. What we may call the Thomas Theorem appears just once in the corpus of W. I. Thomas's writings: on page 572 of the book he wrote with Dorothy Swaine (Thomas) Thomas entitled *The Child in America* (New York: Knopf, 1928). I ascribe the theorem to W. I. Thomas alone rather than to the Thomases jointly not because of his gender or great seniority but only because Dorothy Thomas has confirmed for me what many have supposed: that the sentence and the paragraph in which it is encased were written by him. There is thus nothing in this attribution that smacks of "the Matthew Effect," which in cases of collaboration between scholars of decidedly unequal reputation has us ascribe all credit to the prominent scholar and little or none to the other collaborator(s). On the Matthew effect. see Merton, *op. cit.*, 1973, Chapter 20.

(This wouldbe prophylactic footnote is quoted from the second 'edition' of the previously cited paper, "Social Knowledge and Social Policy," as it appears on page 175 of Merton, [1975] 1976.)

As you see, this note anticipates misinterpretations of my having attributed the theorem to W.I. alone. Having been immersed all those many years in the sociology of science, I had inevitably become aware of the frequent pattern of swift mis-imputations

²³ Early scholarly studies of the reward system of science include Gaston (1971), Hagstrom (1974), and Zuckerman (1977); for an analytical overview, see Zuckerman (1988:520-26). Drawing extensively upon sociological sources, the popular volume by the science journalists, Broad and Wade (1983), soon catalyzed the attention paid by the mass media to deviant behavior in science.

²⁴ On re-reading, I find the term "anticipatory" rather redundant.

of ideological or other bias. Hence, my evidently unavailing effort to counter in advance the charge that my attribution simply expressed (witting or unwitting) "sexism" or, in a parallel construction, inverted "ageism." Or that the attribution was simply another instance of the Matthew effect.²⁵

I should pause to report that I erred in writing that "the Thomas Theorem appears just once in the corpus of W.I. Thomas's writings." The leading authority on that corpus, Edmund H. Volkart, wrote me recently to say that he had independently made the same erroneous claim. (A comparatively rare specimen of independent simultaneous error in contrast to the many known cases of independent simultaneous discovery.) Ed Volkart had learned from our longtime mutual friend, Eleanor Isbell — for so many years, the indispensable stalwart of the Social Science Research Council — that W.I. did put the theorem into print once again. This, in his essay, "The Relation of Research to the Social Process," which appeared in a symposium by The Brookings Institution in 1931 under the title, *ESSAYS ON RESEARCH IN THE SOCIAL SCIENCES*.²⁶

Upon examining that essay by W.I., I see that he largely reiterates the original ¶ from *THE CHILD IN AMERICA* in which the theorem appears, clearly making no effort to elucidate or develop it further. Still, the fact, and it is truly a fact whatever the radical subjectivists might say, that the crucial sentence [re-] appears in an essay by W.I. [alone] would seem to provide publicly accessible evidence that he knew it to be his and his alone.

Speaking of reiterations in print, I would have you turn the page to Exhibit 5. This, as you will observe at once, is another wouldbe prophylactic note that largely repeats the one published a half-dozen years before. It appears in a revised introduction to "The Self-Fulfilling Prophecy," as it appears on page 248 of Merton [1948] 1982.

Exhibit 5 [*Which reports but does not document the fact that Dorothy Thomas herself had confirmed that she had nothing to do with the concept of "defining the situation"*]

******What we have been describing as the Thomas Theorem appears on page 572 of the book he wrote with Dorothy Swaine Thomas in 1928: *The Child in America* (New York: Knopf). I ascribe the theorem to W.I. Thomas alone rather than to the Thomases jointly because Dorothy, who became Dorothy Thomas Thomas when they were married eight years after that book appeared, confirmed that the consequential sentence and the paragraph in which it was enclosed were written by him. Thus, nothing in this attribution smacks of "the Matthew Effect," which operates in cases of collaboration between scholars of decidedly unequal reputation to ascribe all credit to the eminent scholar and little or none to the collaborator(s)—supplementary note, 1982.

²⁵ In retrospect, I note here the pronounced but still undeveloped effort to avoid conflating the "partial ascription *phenomenon*" and possible hypothetical *explanations* of the phenomenon in terms of sexism, ageism, or, more generally, the Matthew effect. I trust that this will be clarified in the final section of this paper which examines the sociological and methodological import of both the phenomenon and its explanation.

²⁶ As we shall see, Thomas emphatically quoted the theorem a third and last time in Blumer (1939:85) but did not elect to apply or develop it further. That introduces a puzzle for future exploration. What are we to make of W.I.'s own sparse attention to the specific theorem in his ample writings on the governing concept of "definition of the situation"? The very question evokes Sherlock Holmes's observation on the methodological significance of the absent: "the curious incident of the dog in the night-time; the dog did not bark." (For the imperishable original, see Arthur Conan Doyle, [1894] 1953: 347; in perhaps more immediately relevant context, the methodological fragment reproduced in *Social Science Quotations* [Sills & Merton 1991:52]).

The reason for the largely reiterated footnote is by now surely clear to you as it had become to me. It was plain that a then-and-there explanation was needed whenever one attributed the theorem to W.I. alone. Else, some were bound to conclude that Dorothy was being robbed of this part of her ample intellectual contributions. This variant of the note no longer alludes to possible imputations of gender or age bias. Instead, having set forth the grounds for the attribution, it goes on to inform, or remind, readers that the collaborators had married — on 7 February, 1935 when he was 71 and she, 34 — and that Dorothy had been a Thomas before she married another Thomas.

That allusion to the post-marital “Dorothy Thomas Thomas” must seem altogether irrelevant to the subject in hand.²⁷ I agree. It is there only as an echo of Dorothy’s letter to me in which she describes her role in the writing of “*The Children [sic] in America*” and reports that “The concept of ‘defining the situation’ was strictly W.I.’s.” But readers of those prophylactic footnotes could not surmise all that. Would that I had been able to publish in full Dorothy’s charming letter to me and my reply to her. Then the story would have been writ large and plain.

But if I could not intrude that correspondence in my latter-day articles referring to the Thomas Theorem, I can surely include it here.²⁸

You have only to turn to the next page of this lengthening response to your own letter to David to find Dorothy’s letter as Exhibit 6 and then turn to the page[s] following for Exhibit 7.

²⁷ R.S. Smith (1993: 4-5) found that three of the 40 textbooks referring to the Thomas theorem “imply she [DST] was married to W.I. Thomas” at the time it appeared in print. He notes that this was mistaken and goes on to observe: “. . . even if they were married, this begs the question of why include such information? According to *The Chicago Manual of Style* (1982), it is not scholarly practice to identify the marital status of coauthors. It is assumed that each author is a contributor in his or her own right and so making such a point is irrelevant or detracts from the purpose of citation. As Reinharz implies in the title of her article on Dorothy Swaine Thomas (“Wasn’t She the Woman Married to William I.?”) citing the work in this way reinforces the patriarchal practice of subsuming a wife’s work under her husband’s authorship.” Thus led to the Reinharz article with its nicely ironic subtitle, one arrives at it only to find next to nothing there about either the personal life or the considerable worklife of DST. As this archival letter to the Skeptical Social Scientist makes plain in virtually anticipatory style, my own echoic allusion to their marriage no more exemplifies “the patriarchal practice” of subsuming “under her husband’s authorship” Dorothy’s virtual lifetime of pioneering work in demography (D.S. Thomas 1938, 1941; Kuznets & Thomas 1957-64) and her pioneering studies of the Japanese detention camps during World War II (D.S. Thomas & Nishimoto 1946; D.S. Thomas, Kikuchi & Sakoda 1952) than it exemplifies a tacitly “matriarchal” practice of subsuming under his wife’s authorship W.I.’s virtual lifetime of work on his concept of “the definition of the situation.” It is only that even meticulous scholars of Thomasiana, such as Janowitz (in Thomas 1966:xvii) and Tate (1974), unaware that DST had been “an ardent Lucy Stoner” — an American colloquialism for a married woman who insists on retaining her birthname — have assumed that Dorothy Swaine became Dorothy Swaine Thomas only after marriage.

²⁸ Though persuaded then as now that discursive footnotes providing correlatives and contexts serve a useful function, I hadn’t the temerity to include Dorothy’s letter as a rather extended footnote in papers that, unlike this one, were not focussed on the matter of attributions of the theorem to W.I. being taken as a (witting or unwitting) expression of sexism.

The Thomas Theorem and the Matthew Effect / 401

Exhibit 6 [In which Dorothy Swaine Thomas supplies the archival smoking gun]



GEORGETOWN UNIVERSITY
WASHINGTON, D. C. 20007

CENTER FOR
POPULATION RESEARCH

September 10, 1973

Professor Robert K. Merton
Department of Sociology
Columbia University
New York City, New York 10027

Dear Bob,

Many thanks for your nice letter and the copy of your paper on the Matthew Effect in Science. I have always enjoyed reading the things both you and Harriet Zuckerman have written. There is just one point in this article that puzzles me. I assume the underlinings refer to some index. If so, you apparently have me under the Swains. I assure you I was born a Thomas and then married a Thomas who was no relation. I was an ardent Lucy Stoner and also swore I would never change my maiden name which I didn't.

In regard to The Children in America W. I. Thomas employed me as an assistant since he had been told by the Rockefeller group to get himself a statistician. The statistical portions were mine and I am sending you under separate cover Volkart's book which makes this clear. The concept of "defining the situation" was strictly W. I.'s. With cordial regards,

Sincerely,

A handwritten signature in cursive script that reads "Dorothy".

Dorothy Swaine Thomas
Professorial Lecturer

Exhibit 7 [Reply to the smoking-gun letter by DST]

CENTER FOR ADVANCED STUDY IN THE BEHAVIORAL SCIENCES

302 Junipero Serra Boulevard - Stanford, California 94305

Telephone (415) 321-2052

28 September 1973

Dear Dorothy,

I treasure your sentence and, unless you say no, I shall quote it on every possible occasion as a lovely piece of sociological history. The sentence:

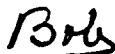
"I was an ardent Lucy Stoner and also swore I would never change my maiden name which I didn't."

As for the underlining that puzzled you, that is pure and, in this case, meaningless chance. I happened to xerox the version of the paper which appears in the page proofs of my forthcoming collection of papers, *THE SOCIOLOGY OF SCIENCE*. All the proper names in the book had been underlined for purposes of indexing (and I assure you that Dorothy Swaine Thomas appears in the Index as such and not as a Swaine).

During the almost forty years (!) since I first met W. I. and you, I have retained a happy image of the two of you together, in your every joint aspect. Evidently, that was more than a casual imprint.

As for the possible Matthew effect involving W. I. and you, I had only this in mind. True, you were very much the junior assistant but W. I., in his generous way, saw to it that you were identified as co-author on the title page. It is therefore of some interest that repeatedly *THE CHILD IN AMERICA* is cited as being by W. I. alone. Of course, that has nothing at all to do with W. I.'s concept of "defining the situation." That was a basic sociological idea for many when I was a freshman first becoming excited by this oddly-shaped field known as sociology.

Yours ever,



Robert K. Merton

RKM:ja

Dorothy Swaine Thomas
Professorial Lecturer
Center for Population Research
Georgetown University
Washington, D.C. 20007

[But before concluding this long response to SSS, still another intervention is needed by way of context: For lengthy though it is, this now archival document nevertheless did not include an essential part of Dorothy's and my correspondence; namely, my note signaling the pertinent passage in the "Matthew Effect" paper which led to her altogether unexpected singling out of W.I.'s and her own distinctive roles in writing *The Child in America*. Here, then, is that note as the only-now interpolated

Exhibit 7A [which, along with Exhibit 1, had evoked Dorothy's smoking-gun reply that was reproduced as Exhibit 6 in the 1988 letter to SSS]

31 August 1973

Professor Dorothy S. Thomas
Center for Population Research
Georgetown University
Washington, D.C. 20007

Dear Dorothy:

I had hoped to see you at the meetings and that is why I hadn't written you before now. And how wise you were not to come: 98° in the shade all through the sessions.

I am flattered to have you ask for a photograph of me but I don't have one at hand of me back in the days when I was president. But I'll see if I can dig one up and will happily send it on to you.

In the meantime, I thought you might have some interest in the enclosed paper if only because of what I say about you, W.I., and The Child in America, on pp. 446-7. [Italics have been added to underscore the relevant sentence that evidently evoked the unsolicited smoking-gun reply].

Yours,

BB

It is of prime evidentiary importance that neither this note nor the indicated passage in the accompanying copy of "The Matthew Effect" (which appears as Exhibit 1 in the letter to SSS) refers to the partial citation of *the Thomas theorem*. As can be seen, the passage refers only to the partial citation of *the book*. It then proceeds to account for this instance of the partial citation phenomenon in terms of the Matthew effect, which is said to be all the more probable since the less-known collaborator is "subject to the double jeopardy of being a woman of sociological science and still in her twenties."²⁹ Yet, it will be noticed that *on her own initiative*, Dorothy Thomas takes occasion to partition their distinctive contributions to the book to emphasize that as W.I.'s statistical assistant "The statistical portions were mine and . . . [t]he concept of 'defining the situation' was strictly W.I.'s." The concluding portion of this retrospective article will collate the many statements, both public and private, to the same effect by both Dorothy and W.I. But first the conclusion of the long letter of response to SSS back in 1988.]

And there you have the essential documentation. These seven Exhibits could surely be extended in my old and new Thomasian files.* But perhaps this documentation is enough to indicate that SOCIAL SCIENCE QUOTATIONS will not be perpetuating any "institutionalized sexism" by attributing the Thomas Theorem to W.I. Thomas.

Yours, truly, from an era not quite so new,

BB

Robert K. Merton

²⁹ Readers may want to refresh their memory by glancing back at Exhibit 1.

* . . . I append a few other Exhibits which might have been incorporated in the letter proper were this being put together on a word-processor rather than an old-fashioned Selectric II typewriter.

- Exhibit 8: Cynthia [Fuchs Epstein's] note of 21 May, 1981
Exhibit 9: R.K.M. reply to C.F.E., 26 May 1981. [C.F.E. managed to put the gist of this exchange into her book then in press: *Women in Law* (Basic Books, 1981), 362n., thus providing another still-rare precise citation to the original source of the theorem.
Exhibit 10: Title page and antecedent page of my copy of the first edition of *THE CHILD IN AMERICA* bought at the grand Leary's bookstore in Philadelphia on the 23d of June 1939

Exhibit 8

Columbia University in the City of New York

CENTER FOR THE SOCIAL SCIENCES

1200 UNIVERSITY AVENUE
NEW YORK, N.Y. 10027

21 May, 1981

Dear Bob:

Checking through hundreds of copy-editor's queries on my book I had occasion to check ST & SS for the Thomas Theorem. To my surprise I find no footnote to the original "If men define things as real..."

I am convinced that if you chose to present it without footnote then you were applying some rule of common knowledge that makes the footnote unnecessary - indeed, perhaps vulgar.

So - I ask, even implore - for a spelling out of the rule (as I lay choked in dusty tomes pursuing thankless searches for forgotten footnotes).

Yours,

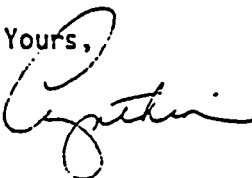


Exhibit 9

Columbia University in the City of New York | New York, N.Y. 10027

UNIVERSITY PROFESSOR

Fayerweather Hall

26 May 1981

Dear Cynthia:

Having a specific page reference* for the Thomas Theorem will in truth make your book quite distinctive. As you may have noticed, there are precious few cases - in fact, I don't recall many - referring to the famous sentence which do accurately pinpoint its source. This gives the impression that ST&SS may indeed have served as a conduit over the past thirty years for the Thomas Theorem. At any rate, I enclose the page reference.

I should explain that I attribute it to W.I. Thomas, rather than to both Dorothy Thomas and him because I once asked Dorothy about it. She was emphatic that both idea and formulation were entirely W.I.'s. Incidentally, she once told me also that part of the reason -- perhaps, only a very small part -- for her marrying W.I. is that it allowed her (as a Lucy Stoner) to retain both her maiden name and to take on her husband's name as well.

I write this just hours before Harriet and I take off on our much-awaited holiday in Italy and London.

With much love,

Yours,



Robert K. Merton

Professor Cynthia Epstein
Center for Social Sciences
817 S.I.A.

* Encl. xerox of p. 175 in rkm, SOCIOLOGICAL AMBIVALENCE
Enc.

Exhibit 10

572 - The Thomas Theorem

Robert A. Merton
3906:23
Philadelphia
[the blue markings
of price testify that
this was bought at
the grand bookstore,
Leary's]

E. Libris
May S. Habis

THE
CHILD IN AMERICA

BEHAVIOR PROBLEMS AND PROGRAMS

WILLIAM I. THOMAS
AND
DOROTHY SWAINE THOMAS



NEW YORK · ALFRED · A · KNOFF · MCMXXXVIII

Social Mechanisms Generating the Partial Citation Phenomenon

As indicated at the outset, this article is not primarily concerned with adjudicating claims to the origin of the Thomas theorem, and surely not with doing so on behalf of W.I. Thomas or Dorothy Swaine Thomas. Both simply took that origin for granted. We shall be examining further crucial evidence, from both a private archive and from publications, bearing on the recently disputed origin of the theorem, but our primary objective remains to understand the partial citation phenomenon and its place in the reward-system of science by analyzing this particular instance of that phenomenon as a strategic research site. The case of the Thomas theorem provides a strategic site if only because I happen to have first-hand and fine-grained archival information about the origin of the theorem, its early citations and subsequent citational history, the latter having been

usefully amplified by the Smith (1993) survey of the theorem in textbooks.³⁰ And though some of that archival material appears in the foregoing documentary letter to SSS, it leaves a variety of specific historical puzzles and generic sociological problems still to be specified and solved if we are to understand the specific case of partial citation and, through it, the general phenomenon. We begin with specific historical puzzles — how did it happen that the Thomas theorem was singled out for attention and how did it happen that its book source was not cited from the start? — and then attempt to account for the continuation of this pattern of citation in terms of a generic social mechanism in the cultural transmission of knowledge, namely, obliteration by incorporation.

Obliteration by Incorporation

To begin with, how did this one sentence come to be selected for incorporation in canonical knowledge from some 12,000± sentences comprising that book of 583 pages? After all, the Thomas theorem was neither the core subject nor the main theme of *The Child in America*. But if it was not central to the book, it was central — indeed it was a climactic formulation — for those social scientists in W.I. Thomas's invisible college³¹ who for some time had been drawing upon his concept of *definition of the situation*. It crystallized a new phase of that evolving concept by adopting a pragmatic position to say much in little about the subjective component of action being truly consequential. And so members of that invisible college promptly fastened onto this new focus on consequences of definitions of the situation.

As was briefly noted in reviewing the early diffusion of the theorem, an integral member of that invisible college was the sociologist and social psychologist Kimball Young and, to the best of my knowledge, it was he who first isolated the sentence for conspicuous attention. This, it may be remembered, he did soon after publication of *The Child in America* by adopting it as an epigraph twice: the first time for Part Four of his textbook *Social Psychology* (1930: 397) and the next year for his chapter in an edited anthology, *Social Attitudes* (Young 1931:100). The first epigraph ascribes the quotation simply to "Thomas" sans given name or initials (just as the two other epigraphs on that same page are ascribed to [the tentatively inferred Ernest W.] Hobson and [the surely inferred

³⁰ It turns out that R.S. Smith has expanded his 1993 presentation to the Eastern Sociological Society and that this enlarged paper is scheduled for publication in *The American Sociologist* under the title, "Giving Credit Where Credit Is Due: Dorothy Swaine Thomas and the 'Thomas Theorem.'"

³¹ In a felicitous stroke of terminological recoinage, Derek de Solla Price ([1963] 1986, *passim*; see Index) adapted Robert Boyle's seventeenth-century term "invisible college" to designate past and present informal collectives of closely interacting scientists limited to a size "that can be handled by inter-personal relationships." See also Diana Crane, *Invisible Colleges* (1972).

John] Wesley). The second book, which the dedicated Young³² had dedicated to his master, W.I., ascribes the quotation more definitely to "W.I. Thomas." But as is commonly the case with epigraphs, neither of these gave a bibliographic reference to its source. Thus began the unpremeditated practice of quoting the Thomas sentence *sans* the full scholarly citation.

In examining its early diffusion, we also noted that the first descriptions of the sentence as "the Thomas theorem" likewise provided no bibliographical citation. And this for reasons as happenstantial as Young's having first quoted the sentence in epigraphs. The first such description of the quoted sentence as "W.I. Thomas's sociological theorem" (Merton 1938:333) was merely a passing allusion that clearly required no citation while the first detailed reference to the truncated "Thomas theorem" (Merton 1948) appeared in *The Antioch Review*, a journal for the common reader which did not look kindly on footnotes in general and on bibliographical citations in particular.³³ (The one citational footnote in this article was not to the theorem but referred to a publication that appeared while proofs were being corrected and was barely negotiated into being.) And when the article was reprinted, as it often was, the citation remained absent.

Thus it was owing to peripheral and surely unplanned circumstances that these early appearances of the theorem in print did not include the usual academic citations of its source. This chanced feature of its primary diffusion from members of the invisible college to the larger community of sociologists became serially reproduced in the course of secondary diffusion through textbooks and correlative writings. Thus there developed a special eponymous variant of the social mechanism known in the sociology of science as "obliteration by incorporation" or by the ultimate brevity, OBI, an acronym that stands for Obliteration of the source of ideas By Incorporation in currently canonical knowledge (Merton 1968: 27-28, 35-37; Garfield [1975] 1977).

This is described as a "special eponymous variant" inasmuch as OBI ordinarily involves obliteration of *both* the author(s) *and* the original source. This unplanned social mechanism consists in "users and consequently transmitters of the particular bit of knowledge [having] become so thoroughly familiar with its origins that they assume this to be true of their readers as well. Preferring not to insult their readers' knowledgeability, they no longer refer to the original

³² At the time Young was seizing upon the theorem for his epigraphs, he also wanted to do a biographical piece on W.I. who emphatically refused to give him leave. Characteristically, he responded to Young's urgent request in this vigorous fashion: "I don't regard myself as important. I don't want to be noticed. I don't care whether a word appears about me in print, living or dead." Unhappily, Thomas's wish remains fulfilled: there is still no full-scale biography of this founding American sociologist. Manuscript letters by Kimball Young (30 April, 1930) and by W.I. Thomas (4 May, 1930). I am indebted to David L. Sills for making these letters available to me. Although Kimball Young's newly published oral memoir (1995) is at times fallible when unchecked by supporting documents, this deftly edited account provides much detail about the W.I. and the Dorothy Swaine Thomas sociocognitive network.

³³ None of the other five articles in that June 1948 issue of *The Antioch Review* contained a citational footnote; there were five discursive footnotes all told. The next (September) issue consisted of 17 articles, with a total of six citational footnotes.

source" (Merton 1993:218-20) as is the case, for example, with such diverse knowledge-units as the theory of games, secondary analysis, revealed preference, opportunity costs, or latent structure analysis.

At the tail end of the OBI mechanism, many concepts-and-phrasings — such as charisma, stereotype, lifestyle, significant others, double-bind, and role-model among countless others — enter the vernacular, with rare if any awareness of their sources in the social sciences (Merton 1982:100-106). Obliteration by incorporation in the general culture set in long before for much-quoted dicta and concepts such as Francis Bacon's "knowledge is power" (1597), Joseph Glanvill's "climate of opinion" (1661), and John Adams's "government of laws and not of men" (1774). But plainly, in those cases where a scientific contribution has been eponymized, as with Boyle's Law, Halley's comet, Le Chatelier's principle, the Rorschach test, Gini coefficient, or Thomas theorem, only its original bibliographic source and not its author or authors becomes obliterated. I hazard the hypothesis that when the new idea is not eponymized, its source is more probably, more rapidly, and more extensively, deleted.

Thus, in his fine account of "the Chicago School of Sociology," Lester Kurtz (1984:34) in effect exemplifies both types of obliteration — of publication only and of author too — as he reports the differing fates of Thomas's uneponymized and eponymized concepts:

The most persistent of [W.I.] Thomas's specific contributions is his emphasis on interaction and situations in the study of the subjective side of social life. His concept of the 'definition of the situation' has become one of those concepts so widely used in sociological analysis that it is often not explicitly attributed to Thomas. His situation analysis is a result of the influence of pragmatism, and much of his later work can be encapsulated in his phrase 'If men define situations as real, they are real in their consequences' (Janowitz 1966, p. xl). Much has been made of the formulation, called the 'Thomas theorem' by Merton (1968, pp. 475ff.), including efforts to link it with dramaturgical and ethnomethodological perspectives . . .³⁴

To be necessarily obvious about it, when authors fail to provide a citation to the original source of a concept or quotation, this cannot directly lead their

³⁴ Along with providing apt examples of the two degrees of obliteration — complete obliteration of the source of the generic *concept* (definition of the situation) and inevitably only partial obliteration of the source of the *eponymous theorem* — this brief passage provides a singular array of well-identified patterns in the transmission of knowledge. Thus, the thoroughly knowledgeable scholar Kurtz elects to cite a secondary rather than primary source of the theorem, taking care to abide by an only slightly institutionalized norm of citation by citing that mediating source in precise detail. Degrees of obliteration in the transmission of knowledge are also exemplified as Kurtz draws upon Janowitz's observation that "much of this later work [by W.I. Thomas on what 'he called situational analysis'] was encapsulated in his [n.b.] phrase, 'If men define situations as real, they are real in their consequences,' as stated in *The Child in America*." (Janowitz 1966:xl). But then we find that authoritative scholar of the Thomas corpus, Morris Janowitz, not pausing to give a full citation indicating where the Thomas sentence is to be found in that expansive 583-page volume. And as a final irony in Kurtz's meticulous passage, we note that though he cites only a mediating source for the consequential sentence itself, he carefully cites the exact primary source of its eponym, "the Thomas theorem."

readers to that source. Such omissions make for the type of serial diffusion that merely reproduces the pattern of an uncited concept or quotation. Failure to cite a source need not, of course, result only from chance circumstances such as those at work in the early history of the Thomas theorem. It may also result from a conflict between diverse social and cognitive functions of citation. As the reward system of science evolved, paying peer respect by citing one's predecessors became essential to it, but plainly it would be highly inefficient were scholars required to specify the origins of every bit of incorporated knowledge every time it was put to use. As Kaplan (1965) and Garfield (1995) have in effect shown, the norms governing citation practice are still neither sufficiently detailed nor standardized to solve this problem of conflicting functions of citation.

At any rate, the Thomas theorem suffered a deficit rather than such excess of precise citation. This, owing to the chance of its first quotations by members of the Thomas invisible college having appeared in the form of epigraphs and eponyms that failed to signal its precise source. That omission was reproduced through later serial diffusion among authors who had themselves evidently not come upon the original source in *The Child in America*. Despite the later precise citations of the theorem by members of the Thomas invisible college (starting with the Volkart anthology of W.I. Thomas in 1951), that outcome of obliteration except for the eponym is, to judge from the Smith (1993) survey, still typical of textbooks introducing students to sociology. Obliteration by incorporation in the transmission of knowledge remains a largely intact process until subjected to exogenous historical or sociological examination.

But if these social mechanisms of OBI and serial diffusion account for the widespread failure to cite the book source of the theorem at all, they plainly do not account for this double case of the partial citation phenomenon which has W.I. Thomas being solely credited not only with the theorem but also with the book in which it appeared. Each of these types of partial citation derived from distinct though mutually reinforcing social mechanisms in the transmission of knowledge and so requires separate analysis.

Primary Group Ascription of the Theorem to W.I.

There was nothing problematical about the origin of the theorem among members of the Thomas sociocognitive network and particularly among those who at the time the theorem appeared or soon afterwards were in close touch with the central figures of that network, W.I. Thomas and Dorothy Swaine Thomas.³⁵ Members of the network who have entered this account as early

³⁵ Much tacit and explicit knowledge was exchanged in such networks then as now. Those networks were, of course, less numerous and less specialized back in the 1920s and 1930s when the membership of the American Sociological Society numbered some 1200, less than a tenth as many as the membership of the ASA in the 1970s and 1980s. (I am indebted to Valerie Pines of the ASA for this information.) One-time members of the Thomas networks are of course in increasingly short supply; my own relatively youthful engagement with the Thomases did not begin until W.I. came to Harvard as a visiting professor in the mid-1930s, the year I became a newmade instructor.

disseminators of the theorem — Kimball Young, Howard P. Becker, Willard Waller, and myself — had ample cause to regard the theorem simply as a memorable formulation of a new aspect of W.I.'s longstanding paradigmatic idea of definition of the situation. Which we know was also the case with Dorothy Thomas herself since, without any prompting on my part, she had volunteered as much in her smoking-gun letter (cf. Exhibit 6).

However, what was transparently obvious at the time to Thomas colleagues close-by and at-a-distance has evidently become problematic in this time of political correctitude — at least for those who define the sole ascription of the theorem to W.I. Thomas not as a matter of historical fact but simply as an expression of sexism. It may therefore be useful to collate a few more bits of evidence from both public print and private archive that bear upon this current definition of this particular situation as further prelude to an analysis of the widely diffused partial citation of the book and the theorem.

DST'S RETROSPECTIVE ON *The Child in America*

Some twenty years before Dorothy Swaine Thomas had crisply and emphatically described W.I.'s and her own distinctive contributions to the book in the smoking-gun letter, she had taken the occasion of her Presidential Address to the American Sociological Society to do so in much greater detail. An incomplete private archive yields an almost instant response to the Address that impatiently aimed to spread the word just a bit more quickly in a way typical of sociocognitive networks.

26 September 1952

Dear Dorothy:

Thinking back, I find that I'm glad to be a member of the Council. I am sure I would have seen nothing of you at the Atlantic City meetings if I hadn't been among those fortunate few who spent almost three whole days in your private suite. I've told Paul Lazarsfeld about your presidential address and if you have a spare copy of it, could you send it on for him to read so that he will not have to wait for publication? . . .

The response follows soon:

October 3, 1952

Dear Bob,

I too enjoyed the three days of Council meetings. Thanks for your kind remarks. I do not have an extra copy of the Presidential Address, but it will be published in the December issue of the Review. Under separate cover, I will send you, within a few days, a copy of a very good picture of W.I. . . .

What, then, does Dorothy Thomas (1952: 665) have to say about our subject in that Address by the first woman to become president of the then ASS? Herewith, a few snippets from this autobiographical piece on the life of the mind (that still bears re-reading):

The framework of *The Child in America* was W.I. Thomas's famous situational approach . . . which defined the 'total situation' as always containing more or less of the subjective. . . It is always dangerous to try to reconstruct the separate contributions of

collaborators, but I am reasonably sure that the designation of subjective, documentary materials as the 'as-yet unmeasured' and the emphasis on 'transmuting' more and more factors 'into quantitative form' were mine and that the very positive evaluation of the behavior document *per se* was W.I. Thomas'. For when I joined the staff of the Child Development Institute at Teachers College in 1927, I was still somewhat distrustful of the subjective and the 'as-yet unmeasured' as materials for scientific investigations. I still preferred to work with the objective, defined in almost mechanistic terms and to count, measure, sample, fit curves, correlate, test for reliability, validity and the significance of quantitative differences, rather than to utilize descriptive materials or life histories, case records, and other types of personal documents. I hoped, indeed, that the series of observational studies of social behavior which I directed there and continued during the 1930's at the Yale Institute of Human Relations might yield 'data as objective as the best of those with which the statistical economists' were dealing. And although I gave verbal recognition to the value of case histories, diary records, and what I called 'merely descriptive' accounts of behavior as 'hypothesis-forming material for further studies' I made slight use of these materials, on the ground that they 'obviously [would] not yield data appropriate for statistical analysis' (D.S. Thomas 1952: 665 citing D.S. Thomas 1929: 19-30, *passim*).

This public avowal with its emphasis on Dorothy Swaine Thomas's commitment to 'objective' statistical analysis inevitably brings to mind her statement in the 1973 smoking-gun letter that "the statistical portions [of *The Child in America*] were mine." That specialized role was in effect reaffirmed by W.I. (who insisted on declaring his technical ignorance of statistics) when he concluded one of the only two papers in which he reproduces the theorem by stating that "Dorothy Swaine Thomas, of Yale University, is responsible for the items relating to statistical procedure in this article."

DST'S TACIT APPROVAL OF VOLKART'S 1951 ASCRIPTION TO W.I.

At almost the same time, Dorothy Thomas is providing behavioral testimony to the division of scientific labor in the book *and* to virtual ascription of the theorem to W.I. Four years after W.I.'s death in 1947, she is first among many who are troubled by the lack of access to his works "in the field of social behavior" that were out of print or had never been published (Thomas 1951:xi). She draws upon three colleagues, near and far, in her own sociocognitive network — Donald Young, Thorsten Sellin, and Herbert Blumer — to serve with her as a committee of the Social Science Research Council to oversee the collection of W.I.'s writings that was to be brought together by Edmund Volkart (Thomas 1951). Volkart of course elects to reprint the consequential final chapter of *The Child in America* (duly cited as written by the two Thomases) and observes in his introduction to it that "the importance of subjective experience to a science of behavior is still emphasized." That continuing emphasis on the subjective is manifestly being ascribed to W.I. and surely not to Dorothy Swaine Thomas for, as we know, she is just then reporting in her presidential address her (since relaxed) "distrust of the subjective" at the time the book was being

written.³⁶ Volkart goes on to note, as a matter of course, that "In this connection Thomas' [*n.b.*, not "the Thomases'"] discussion of the life history as a source of research material should prove especially useful to students of culture and personality." As a member of the committee supervising the volume, Dorothy Thomas evidently did not object to this reading of the chapter containing the paragraph on the value "of the highly subjective record . . . for behavior study" which culminates in the theorem. Once again, we are put in mind of her smoking-gun letter which resonates with that reading of the chapter when she writes that "the statistical portions were mine and I am sending you under separate [sic] cover Volkart's book which makes this clear. The concept of 'defining the situation' was strictly W.I.'s."

WIT'S SMOKING-GUN ASCRIPTION OF THE THEOREM TO HIMSELF

W.I. evidently agreed. For long before, he had anticipated Dorothy Swaine Thomas's private smoking-gun letter in a public smoking-gun ascription to himself while addressing a panel of social scientists appraising Blumer's critique of *The Polish Peasant*; this, in the course of yet again stating his methodological case for "the behavior document, whether autobiography, case record, or psychoanalytic exploration."³⁷ In a matter-of-fact vein (here italicized for emphasis, no doubt needlessly), he remarks that "I quote what I said in this connection" and then proceeds to quote the passage from *The Child in America* we have come to know so well, the one that closes with the now symbolically historic sentence: "If men define situations as real, they are real in their consequences" (W.I. Thomas in Blumer 1939:85).

DOCUMENTARY CONFIRMATION OF THE DST AND WIT SMOKING-GUN ASCRIPTIONS

Even in the absence of these archival and published documents by both Thomases, intellectual historians would have little difficulty in ferreting out the

³⁶ I write "since relaxed distrust of the subjective" inasmuch as the presidential address concludes, with typically Thomasian candor: "On the behavioral side, I have not found it profitable to proceed as if all behavior must be or even can be 'transmuted' into quantitative terms. And whereas I still push the statistical aspect of all studies to the limit, I no longer relegate the subjective and the descriptive to secondary positions" (Thomas 1952: 669). It was that kind of candid public retrospective that elicited this fan letter drawn from my own private archive: "I salute our out-going President — this being said as a sociologist and referring therefore to the Chief Executive of the A.S.S rather than the U.S.A. The particular occasion for my drinking to your good health is the appearance, in print, of your salty, meaty and otherwise nourishing presidential address. It stands up on the printed page as it did before the collected audience. Most of us never try to make sense of the life of the mind we have led, and of the few who do try fewer still succeed. Yours was a complete success, all the more solid for being wholly unpretentious" (RKM to DST, 27 December 1952).

³⁷ This, it should be noted, is a virtual quotation from a comparable passage in *The Child in America* which reads: "The behavior document (case study, life-record, psychoanalytical confession. . ." (571)

highly probable authorship of the theorem. For neither before nor after publication of *The Child in America* did Dorothy Thomas make sustained use of the theorem or the more inclusive concept of definition of the situation whereas W.I. Thomas devoted much of his twentieth-century worklife to what he described as "situational analysis." In 1917 — Dorothy Swaine Thomas was then 17 and about to enter Barnard College — his influential paper on "The Persistence of Primary-group Norms in Present-day Society"³⁸ observes that "this defining of the situation is begun by the parents. . ." and a few years later, *The Unadjusted Girl* (Thomas 1923) is "mainly concerned with situational analysis and the definition of the situation" (Janowitz in Thomas 1966:xxvii). But rightly enough, it is his presidential address to the American Sociological Society, a year before publication of the for-us landmark book, *The Child in America*, that almost wholly anticipates the formulation of the theorem:

A document prepared by one compensating for a feeling of inferiority or elaborating a delusion of persecution is certainly as far as possible from objective reality. On the other hand, this definition of the situation is from one standpoint quite as good as if it were true. It is a representation of the situation as appreciated by the subject, "as if" it were so, and this is for behavior study a most important phase of reality (Thomas 1927:7).

There it is: the essential idea, down to the detail of including the Hans Vaihinger ([1911] 1924) phrasing of "as if" as this appears in the canonical version of the theorem. This anticipatory version lacks only the pragmatic element of consequences made explicit and the felicitous formulation that made the theorem memorable.

In light of this cumulation of private and public evidence, it does not seem extravagant to conclude that Dorothy Thomas and W.I. Thomas were probably speaking truth about the origin of the theorem.

ZNANIECKI'S SUMMARY OF THE WIT AND FZ DIVISION OF SOCIOLOGICAL LABOR

This accumulation of evidence would also seem to bear upon the suggestion by Howard P. Becker that the theorem was "in content at least . . . probably Znaniecki's." Beyond this evidence is Znaniecki's statement to that panel of social scientists engaged in appraising Blumer's appraisal of *The Polish Peasant*. There he summarizes Thomas's and his own "previous results of comparative analysis and generalization," thus:

Thomas had at the time already formulated several well known and original theories in social psychology and sociology, based upon an exceptionally great mass and variety of significant data carefully chosen from many different cultures; and in starting to collect materials concerning European peasants he meant to apply his theories to this new mass of data. I had published several works in general theory of culture and in epistemology which eventually proved to have some bearing, however abstract and indirect; the former

³⁸ Thus, in an article anatomizing textbooks in social pathology, C. Wright Mills (1943: 171) notes that "About the time W.I. Thomas stated the vocabulary of the situational approach, a social worker was finding it congenial and useful. In M.E. Richmond's influential *Social Diagnosis* (1917) we gain a clue as to why pathologists tend to slip past structure to focus on isolated situations. . ."

upon the data of Polish peasant culture, the latter on the method of handling them. (Blumer 1939:87,90)

Thus, typical of both, Thomas takes the occasion to focus anew on his concept of "defining the situation" in general and on his theorem in particular while Znaniecki has nary a word to say about concept or theorem. Instead, he straightforwardly distinguishes "Thomas's well known and original theories in *social psychology and sociology*" (which, of course, were centered on his idea of "definition of the situation) from his own "*theory of culture and epistemology*." In this way, Znaniecki is also being forthright for, like Dorothy Swaine Thomas, he too made no sustained use of the idea either before or after the great collaboration.³⁹

So much, then, about how it was that members of the Thomas socio-cognitive network ascribed the theorem solely to W.I. Given their first-hand knowledge of its origin, no alternative could possibly have occurred to them. But, as I have emphasized from the start, this article is primarily concerned with examining the Case of the Thomas Theorem in an effort to understand the generic partial-citation phenomenon, not with the specific matter of adjudicating its origin. And though early obliteration by incorporation and serial diffusion may explain the partial citation of the *theorem* by the authors of textbooks and others who had no direct access to this first-hand information, those social mechanisms cannot, of course, explain the practice of ascribing the *book* solely to W.I., since that was not a practice appearing often in the early diffusion of the theorem.

However, it may be remembered that documentation supplied in the archival letter to SSS briefly proposed that this specific case of partial citation of the book may have resulted from the Matthew effect operating as a generic social mechanism in the transmission of knowledge. That proposal warrants further theoretical and methodological scrutiny in light of the concern voiced by SSS that ascribing the theorem to W.I. was sexist and the renewed interpretation by Smith (1993) that this practice "can also be explained in terms of a structural issue — the genderization⁴⁰ of the discipline as part of the process of professionalization. By not citing Dorothy Swaine Thomas these authors help sustain a view of sociology as historically a male domain."

³⁹ In striking contrast to Thomas who, in his last, massive, work, *Primitive Behavior* (1937), draws upon the favored mode of situational analysis from its first page to its last. The very first sentence in the book announces that every aspect of culture "can best be approached in terms of the *definition of the situation*" while the index lists 28 pages which explicitly deploy that concept.

⁴⁰ The "genderization" of scientific disciplines has been described by Evelyn Fox Keller (1985) as involving the domination of the sciences by men scientists at the expense of recognition of women scientists. Keller (1991) has gone on to put her argument thus: "the exclusion of the feminine from science has pertained to a particular definition of science: science as incontrovertibly objective, universal, impersonal — and also masculine" (235).

The Partial Citation Phenomenon and The Matthew Effect

As the terms imply, *partial citation phenomenon* designates a fact while the *Matthew effect* designates a theory. There is no reasonable question that incomplete citations of authors occur but it remains to be shown whether and to what extent and under which conditions they are cases of the Matthew effect. This is not the place to attempt a further systematic explanation of the effect but, as noted earlier, there has been a tendency to conflate the fact and the theory, the phenomenon and its proposed explanation.

In cases of collaboration between scholars of notably unequal reputation, the Matthew effect confers excessive credit on the better-known scholar(s) and little or none on the other collaborator(s). Thus, the biologists R.C. Lewontin and J.L. Hubby instructively describe the far larger numbers of citations accorded one of a pair of their joint papers as apparently

a clearcut case of [the] 'Matthew Effect' . . . In 1966, Lewontin had been a professional for a dozen years and was well known among population geneticists, to whom the paper was addressed, while Hubby's career had been much shorter and was known chiefly to biochemical geneticists. As a result, population geneticists have consistently regarded Lewontin as the senior member of the team and given him undue credit for what was a completely collaborative work that would have been impossible for either of them alone. (Lewontin & Hubby 1985:16)

This report holds immediate interest for us here since in this case, as in countless others, the Matthew effect cannot be easily attributed to a difference of gender. After all, their fellow scientists know that both Lewontin and Hubby are males. The fact that partial or other forms of skewed citation most often refer to author-sets of the same gender is enough to raise the interesting theoretical question why, in the case of the Thomas theorem, failures to include Dorothy Thomas in citations of the theorem or the book have been promptly attributed to her being a woman and his being a man. Both W.I. and D.S. Thomas occupied complex status sets.⁴¹ He was not merely another male sociologist nor she merely another female sociologist. They had many other differing statuses and distinctive social attributes. For example, the attribute of their comparative standing in the discipline and in the field of social psychology (in which Dorothy Swaine Thomas had not worked at all). At the time that one memorable sentence appeared in the coauthored *Child in America* and diffused as the Thomas theorem, W.I. was widely recognized as one of the most consequential of American sociologists. (A quick and, for historians of sociology, redundant indicator of his standing was provided by a study of the comparative amount of space devoted to founders of the discipline in historical textbooks that found him ranked first among living sociologists and sixth among the likes of Durkheim, Comte, Spencer, Ward, and Max Weber [Palmore (1962) 1971].)

⁴¹ On the structural concept of status-set as the set of distinct socially defined positions occupied by individuals at a given time, see Merton (1968:434-38); for its application to the phenomena of "sex typing" and structural obstacles confronting women in American society, see Epstein (1970:86-101; 1988:101-28).

Thomas was esteemed in particular for his theoretical development and application of situational analysis. At the age of 64, just a year before publication of *The Child in America*, he had finally been elected President of the American Sociological Society (presumably because enough members had abandoned their prudish attitudes toward his alleged notorious adultery that had led to his dismissal from the University of Chicago ten years before). Along with his exalted place in the social stratification of American sociology and other statuses in his status set, such as his age, race, religion, ethnicity, university affiliation, W.I. Thomas also happened to be a man.

In contrast to W.I. Thomas's worldwide fame, Dorothy Swaine Thomas had yet to achieve her fame. And, as was noted a quarter-century ago (see Exhibit 1), she was also "subject to the double jeopardy of being a woman of sociological science and still in her twenties."

With such enormous differences in the extent of obviously age-related accomplishment and reputation between the two coauthors, why should we fasten onto the one status difference of gender to explain this case of partial citation? On what grounds should we assume that this one status determined both the amply warranted ascription of the theorem and the wholly mistaken ascription of the book to W.I. Thomas alone? To the extent that gender-, race-, age-, ethnic-, or other status-influenced ascriptions do enter into particular cases of the partial citation phenomenon that plainly involve the Matthew effect, they involve overdetermination (in the methodological, not the psychoanalytic, sense of having more determining factors than the minimum necessary to bring about the outcome). All this raises a series of theoretical and methodological questions.⁴² How do we go about discovering whether and to what extent cognitively irrelevant statuses of authors and of peer ascribers make for the partial citation phenomenon? Do scientists tend to attribute the prime role in collaborative work by men and women to those of their own gender? If so, does this practice differ by gender? Does it obtain irrespective of the comparative standing of the collaborators generally and in their special fields of investigation? In short, there is still much to be done by way of systematic empirical investigation of the diverse workings of the Matthew effect in relation to such functionally irrelevant statuses.⁴³

⁴² These generic theoretical and methodological questions also hold specific personal interest. For, as Eugene Garfield (1994:13) has recently reported, my colleague Harriet Zuckerman and I have long been subjected to a pattern of mis-citation reminiscent of the Lewontin-Hubby experience with the skewed distribution of citations to their two joint papers. Papers written jointly by "Zuckerman and Merton" (1971, 1972) are often cited with the order of the authors reversed. This, of course, carries its own irony, since the author who Garfield notes "had identified, named, and harshly criticized" the Matthew effect thus becomes its dubious "beneficiary." The irony becomes all the greater in light of a statement inserted in a reprinting of the 1968 paper, "The Matthew Effect in Science": "It is now [1973] belatedly evident to me [RKM] that I drew upon the interview and other materials of the Zuckerman study to such an extent that, clearly, the paper should have appeared under joint authorship" (Merton [and Zuckerman] [1968] 1973:439).

⁴³ For inquiries into the workings of the Matthew effect, though without reference to this matter of gender- or other status-influenced attributions, see Stephen Cole (1970; 1992: chap. 6).

In their normative aspect, the partial citation phenomenon and Matthew effect make for injustices. They violate the basic norm of giving peer recognition of contributors to the common wealth of science and scholarship. And, as we have seen, such normative violations evoke deep-seated responses. To extend the normative problem in the case of collaboration among status unequals, the tendency toward this type of injustice is systemic. That systemic inequity derives in no small part from there seldom being public evidence of the respective parts taken by collaborators in a particular research since the standard format of the scientific paper "presents an immaculate appearance that reproduces little or nothing of the intuitive leaps, false starts, mistakes, loose ends, and happy accidents that actually cluttered up the inquiry. *The public record of science therefore fails to provide many of the source materials needed to reconstruct the actual course of scientific developments*" (Merton 1968:4; italics inserted).⁴⁴

Absent such detailed information, fellow scientists and scholars are evidently inclined to think it "reasonable" that the more accomplished collaborator with a history of major contributions to the field — i.e., the one with the far better "track record" as it is often put — has probably originated a joint work or contributed more to it, — unless there is compelling evidence to the contrary. This, even though such a probabilistic inference of course tells us next to nothing about the particular case with certainty.

However, in the case of the Thomas theorem, the compelling evidence is there and this time it is not to the contrary.

References

- Bartlett, John. [1882] 1992. *Familiar Quotations*, edited by Justin Kaplan. 16th ed. Little, Brown.
- Blumer, Herbert. 1939. *An Appraisal of Thomas and Znaniecki's 'The Polish Peasant in Europe and America.'* Social Science Research Council.
- Broad, William, and Nicholas Wade. 1983. *Betrayers of the Truth*. Simon & Schuster.
- Burchell, Howard B. 1985. "Thoughts on Eponyms." *International Journal of Cardiology* 8: 229-34.
- Cole, Jonathan R. 1979. *Fair Science: Women in the Scientific Community*. Free Press.
- Cole, Jonathan R., and Harriet Zuckerman. 1984. "The Productivity Puzzle: Persistence and Change in Patterns of Publication of Men and Women Scientists." Pp. 217-58 in *Advances in Motivation and Achievement*, edited by P. Maehr and M.W. Steinkamp. JAI Press.
- Cole, Stephen. 1970. "Professional Standing and the Reception of Scientific Discoveries." *American Journal of Sociology* 76:286-306.
- _____. 1992. *Making Science: Between Nature and Society*. Harvard University Press.
- Coleman, James S. 1990. *Foundations of Social Theory*. Harvard University Press.
- Coleman, James S., Elihu Katz, and Herbert Menzel. 1966. *Medical Innovation*. Bobbs-Merrill.
- Crane, Diana. 1972. *Invisible Colleges*. University of Chicago Press.

⁴⁴ It therefore seems only appropriate that a paper based on private as well as public knowledge of the respective roles of the distinguished pair of collaborators in this case should depart from the rigid pieties of the standard format.

- Cronin, Blaise. 1984. *The Citation Process*. Taylor Graham.
- Doyle, Arthur Conan [1894] 1953. "Silver Blaze" in *The Complete Sherlock Holmes*. Doubleday.
- Epictetus, [c. 110] 1926-1928. *The Discourses and the Encheiridion*. Translated by W.A. Oldfeather. 2 vols. Putnam.
- Epstein, Cynthia Fuchs. 1970. *Woman's Place: Options and Limits in Professional Careers*. University of California Press.
- _____. 1988. *Deceptive Distinctions: Sex, Gender, and the Social Order*. Yale University Press & Russell Sage Foundation.
- Garfield, Eugene. [1975] 1977. "The 'Obliteration Phenomenon' in Science — and the Advantage of Bring Obliterated." Pp. 396-98 in Garfield, *Essays of an Information Scientist*. Vol. 2. ISI Press.
- _____. 1982. "More on the Ethics of Scientific Publication: Abuses of Authorship Attribution and Citation Amnesia Undermine the Reward System of Science." Pp. 621-26 in Garfield, *Essays of an Information Scientist*. Vol. 5. ISI Press.
- _____. 1994. "Commentary." *The Scientist*. 17 Oct., 1994.
- _____. 1995. "When to Cite." *Library Journal*. In press.
- Garfield, Eugene, Irving R. Sher, and Richard J. Torpie. 1964. *The Use of Citation Data in Writing the History of Science*. ISI Monographs. Institute for Scientific Information.
- Gaston, Jerry. 1973. *Originality and Competition in Science: A Study of the British High Energy Physics Community*. University of Chicago Press.
- Hagstrom, Warren. 1974. "Competition in Science." *American Sociological Review* 39:1-18.
- James, William. [1890] 1950. *The Principles of Psychology*. Dover.
- Kaplan, Norman. 1965. *Science and Society*. Rand McNally.
- Keller, Evelyn Fox. 1985. *Reflections on Gender and Science*. Yale University Press.
- _____. 1991. "The Wo/Man Scientist: Issues of Sex and Gender in the Pursuit of Science." Pp. 227-36 in *The Outer Circle: Women in the Scientific Community*, edited by Harriet Zuckerman, Jonathan R. Cole, and John T. Bruer. W.W. Norton.
- Kurtz, Lester. 1984. *Evaluating Chicago Sociology: A Guide to the Literature with an Annotated Bibliography*. University of Chicago Press.
- Kuznets, Simon, and Dorothy S. Thomas (eds.). 1959-64. *Population Redistribution and Economic Growth: United States, 1870-1950*. 3 vols. American Philosophical Society.
- Lewontin, R.C., and J.L. Hubby. 1985. "Citation Classic." *Current Contents/Life Sciences* 43:16.
- Mead, George H. 1936. *Movements of Thought in the Nineteenth Century*. University of Chicago Press.
- Merton, Robert K. [1938] 1970. *Science, Technology, and Society in Seventeenth-Century England*. Howard Fertig.
- _____. [1938] 1973. "Science and the Social Order." Pp. 254-66 in Merton 1973. University of Chicago Press.
- _____. [1942] 1973. "The Normative Structure of Science." Pp. 267-78 in Merton 1973. University of Chicago Press.
- _____. [1948] 1982. "The Self-Fulfilling Prophecy." Pp. 248-67 in Merton 1982, edited by Aaron Rosenblatt and Thomas F. Gieryn. Abt Books.
- _____. 1948a. "Discrimination and the American Creed." Pp. 99-126 in *Discrimination and National Welfare*, edited by R.M. MacIver. Harper & Brothers.
- _____. [1961] 1973. "Singletons and Multiples in Scientific Discovery." Pp. 342-70 in Merton 1973. University of Chicago Press.
- _____. [1961a] 1973. "Social Conflict over Styles of Sociological Work." Pp. 47-69 in Merton 1973. University of Chicago Press.
- _____. [1963] 1973. "Multiple Discoveries as Strategic Research Site." Pp. 371-82 in Merton 1973. University of Chicago Press.
- _____. [1949, 1957] 1968. *Social Theory and Social Structure*. Free Press.

- _____. 1973. *The Sociology of Science*. University of Chicago Press.
- _____. 1976. "Social Knowledge and Public Policy." Pp. 156-79 in *Sociological Ambivalence*. Free Press.
- _____. 1980. "On the Oral Transmission of Knowledge." Pp. 1-25 in *Sociological Traditions from Generation to Generation*, edited by Robert K. Merton and Matilda White Riley. Ablex Publishing Corporation.
- _____. 1981. "Our Sociological Vernacular." Pp. 100-106 in Merton 1982. Abt Books.
- _____. 1982. *Social Research and the Practicing Professions*. Edited by Aaron Rosenblatt and Thomas F. Fieryn. Abt Books.
- _____. 1983. "Florian Znaniecki: A Short Reminiscence." *Journal of the History of the Behavioral Sciences* 10:123-26.
- _____. 1984. "Socially Expected Durations: A Case Study of Concept Formation in Sociology." Pp. 262-83 in *Conflict and Consensus: In Honor of Lewis A. Coser*. Edited by Walter W. Powell and Richard Robbins. Free Press.
- _____. 1987. "Three Fragments from a Sociologist's Notebooks: Establishing the Phenomenon, Specified Ignorance, and Strategic Research Materials." *Annual Review of Sociology* 13, 1-28.
- _____. 1988. "The Matthew Effect in Science, II: Cumulative Advantage and the Symbolism of Intellectual Property." *Isis* 79:606-23.
- _____. 1989. "Le molteplici origini e il carattere epiceno del termine inglese *Scientist*." Pp. 279-93 in *Scientia: L'immagine e il mondo*. Scientia.
- _____. [1965] 1993. *On the Shoulders of Giants: A Shandean Postscript*. University of Chicago Press.
- _____. 1995. "Opportunity Structure: The Emergence, Diffusion, and Differentiation of a Sociological Concept, 1930s-1950s." Pp. 3-78 in *The Legacy of Anomie Theory*. Vol. 6 of *Advances in Criminological Theory*, edited by Freda Adler & William S. Laufer. Transaction Publishers.
- _____. 1996. "De-Gendering 'Man of Science': The Genesis and Epicene Character of the Word *Scientist*." In *Sociological Visions*, edited by Kai Erikson. Yale University Press. In press.
- Merton, Robert K. [and Harriet Zuckerman]. [1968] 1973. "The Matthew Effect in Science." Pp. 439-59 in Merton 1973. University of Chicago Press.
- Mills, C. Wright. 1943. "The Professional Ideology of Social Pathologists." *American Journal of Sociology* 49:165-80.
- Ogburn, William F. 1922. *Social Change*. B.W. Huebsch.
- Ogburn, William F., and Dorothy Thomas. 1922. "Are Inventions Inevitable?: A Note on Social Evolution." *Political Science Quarterly* 37:83-98.
- Palmore, Erdman. [1962] 1971. "Sociologists' Class Origins and Political Ideologies." Pp. 238-43 in *The Phenomenon of Sociology*, edited by Edward A. Tiryakian. Meredith Corporation.
- Price, Derek J. de Solla. [1963] 1986. *Big Science, Little Science . . . and Beyond*. Columbia University Press.
- Reinharz, Shulamit. 1989. "Teaching the History of Women in Sociology: Or Dorothy Swaine Thomas, Wasn't She the Woman Married to William I.?" *The American Sociologist*, Spring 1989:87-94.
- Rogers, Everett M. [1962, 1971, 1983] 1995. *Diffusion of Innovations*. The Free Press.
- Sarton, George. 1931. *Introduction to the History of Science*. Vol. 2 in Two Parts. Carnegie Institution of Washington.
- Schopenhauer, Arthur. [1851] 1974 *Parerga and Paralipomena*. Translated by E.F.J. Payne. Clarendon Press, Oxford.
- Schutz, Alfred. 1962. *Collected Papers*. Edited by Maurice Natanson. 2 vols. Martinus Nijhoff.
- Science Watch. 1995. "Really Big Science: Multiauthor Papers Multiplying in the 1990s." *Science Watch* 6:1-2.

- Sills, David L., and Robert K. Merton (eds.). 1991. *Social Science Quotations: Who Said What, When, and Where*. Macmillan.
- Smith, R.S. 1993. "Dorothy Swaine Thomas and the 'Thomas Theorem'." Paper presented to the Eastern Sociological Society.
- _____. 1995. "Giving Credit Where Credit Is Due: Dorothy Swaine Thomas and the 'Thomas Theorem'." *The American Sociologist*. In press.
- Stigler, George J. 1961. "The Economics of Information." *Journal of Political Economy* 69: 213-25.
- Stigler, Stephen M. 1980. "Stigler's Law of Eponymy." Pp. 147-57 in *Science and Social Structure*, edited by Thomas F. Gieryn. *Transactions of the New York Academy of Sciences*, series II, Vol. 39.
- Tate, Leland. B. 1974. "W.I. Thomas: Pioneer Sociologist and His Kin." In *Historical Sketches of Southwest Virginia*. Southwest Virginia Historical Society.
- Thomas, Dorothy Swaine. 1938. *Research Memorandum on Migration Differentials*. Social Science Research Council.
- _____. 1952. "Experiences in Interdisciplinary Research." *American Sociological Review* 17:663-69.
- Thomas, Dorothy Swaine and Associates. 1929. *Some New Techniques for Studying Social Behavior*. Teachers College, Columbia University.
- Thomas, Dorothy Swaine, and Richard S. Nishimoto. 1946. *Japanese-American Evacuation and Resettlement: The Spoilage*. University of California Press.
- Thomas, Dorothy Swaine, Charles Kikuchi, and James Sakoda. 1952. *Japanese-American Evacuation and Resettlement: The Salvage*. University of California Press.
- Thomas, W.I. 1917. "The Persistence of Primary-group Norms in Present-day Society and Their Influence in Our Educational System." Pp. 159-97 in *Suggestions of Modern Science Concerning Education*, by Herbert S. Jennings, John B. Watson, Adolf Meyer, and W.I. Thomas. Macmillan
- _____. 1923. *The Unadjusted Girl*. Little, Brown.
- _____. 1927 "Situational Analysis: The Behavior Pattern and the Situation." *Publications of the American Sociological Society* 22:1-13.
- _____. 1931. "The Relation of Research to the Social Process." Pp. 175-94 in *Essays on Research in the Social Sciences*. The Brookings Institution.
- _____. 1937. *Primitive Behavior*. McGraw-Hill.
- _____. 1951. *Social Behavior and Personality: Contributions of W.I. Thomas to Theory and Social Research*. Edited by Edmund H. Volkart. Social Science Research Council.
- _____. 1966. *On Social Organization and Social Personality: Selected Papers*. Edited and with an introduction by Morris Janowitz. University of Chicago Press
- Thomas, W.I., and Dorothy Swaine Thomas. 1928. *The Child in America: Behavior Problems and Programs*. Knopf.
- Thomas, W.I., and Florian Znaniecki. [1918-20] 1927. *The Polish Peasant in Europe and America*. Five volumes in two. Knopf.
- Vaihinger, Hans. [1911] 1924. *The Philosophy of 'As If'*. Routledge-Kegan Paul.
- von Wiese, Leopold. 1932. *Systematic Sociology, On the Basis of the Beziehungslehre und Gebildethehre*. Adapted and amplified by Howard Becker. Wiley.
- Waller, Willard W. 1932. *The Sociology of Teaching*. Wiley.
- _____. 1938. *The Family: A Dynamic Interpretation*. Cordon.
- Young, Kimball. 1930. *Social Psychology: An Analysis of Social Behavior*. Crofts.
- _____. 1931. *Social Attitudes*. Henry Holt.
- _____. 1995. *On Sociology in Transition, 1912-1968: An Oral Account by the Thirty-fifth President of the ASA*, edited by Fred B. Lindstrom, Ronald A. Hardert, and Laura L. Johnson. University Press of America.

- Zuckerman, Harriet. 1968. "Patterns of Name-Ordering Among Authors of Scientific Papers: A Study of Social Symbolism and its Ambiguity." *American Journal of Sociology* 74:276-91.
- _____. 1977. "Deviant Behavior and Social Control in Science." Pp. 87-137 in *Deviance and Social Change*, edited by E.A. Sagarin. Sage Publications.
- _____. 1978. "Theory Choice and Problem Choice in Science." *Sociological Inquiry* 48:65-95.
- _____. 1988a. "The Sociology of Science." Pp. 511-74 in *Handbook of Sociology*, edited by Neil Smelser. Sage Publications.
- _____. 1988b. "Intellectual Property and Diverse Rights of Ownership in Science." *Science, Technology, and Human Values*. Vol. 13, nos. 1 & 2:7-16.
- _____. 1989. "Accumulation of Advantage and Disadvantage: The Theory and Its Intellectual Biography." Pp. 153-76 in *L'Opera di R.K. Merton e la sociologia contemporanea*, edited by Carlo Mongardini and Simonetta Tabboni. Edizioni Culturali Internazionali.
- _____. Jonathan R. Cole, and John T. Bruer (eds.). 1991. *The Outer Circle: Women in the Scientific Community*. W.W. Norton.
- Zuckerman, Harriet, and Jonathan R. Cole. 1994. "Research Strategies in Science," *Creativity Research Journal* 7:391-405.
- Zuckerman, Harriet, and Robert K. Merton. 1971. "Patterns of Evaluation in Science: Institutionalization, Structure and Functions of the Referee System." *Minerva* 9:66-100.
- _____. 1972. "Age, Aging, and Age Structure in Science." Pp. 292-356 in *A Sociology of Age Stratification*, edited by Matilda White Riley, Marilyn Johnson, and Anne Foner. Russell Sage Foundation.