Before

> It might be told that I made the voyage and saw with my eyes the things hereafter written, and that I might win a famous name with posterity.
>
> Antonio Pigafetta (1969[1524?], p. 37)

> For myself, the book is a sort of termination, a last employment of the past concept-formations. I am now changing sails and seeking an untrod land. To be sure, the voyage will probably find its end *before* [reaching] the coast. At least, what happens to so many of my colleagues shall not happen to me: To settle down comfortably in the ship itself so that eventually they think that the ship itself is the new land.
>
> Georg Simmel (1959[1912], pp. 241–2)

The Ant and the Cicada

> One day the ant said to the cicada, 'I am tired of this life of mine. I run around all day; always working hard, never a moment of rest. I look at you and you really seem to enjoy life, singing away to your heart's content, day after day. Could I do that?' 'Sure,' was the cicada's prompt reply. 'Why don't you just become a cicada?' Some time later, the ant and the cicada met again. 'Fancy seeing you,' said the ant. 'I have tried very hard to follow your advice and turn into a cicada, but I have had no luck. Just how would I do that?' 'Well,' replied the cicada. 'That's for you to find out. I just gave you the general idea. You will have to work out the details for yourself.'[1]

The general idea at the core of the research project behind this book – that of story grammars – came to me in a flash one night in 1985. Within two days I had

fully developed the grammar that I subsequently used in my data collection projects. But the design of the computer program that would allow me to practically implement the grammar, the involvement in the collection of a large body of historical data, the refinement of the technique and a clear understanding of its limitations and power, the development of the tools of data analysis, and the pursuit of the epistemological implications of the new technique, were a different story. Working out the details took years of hard work, across several disciplines and subdisciplines – from sociology to linguistics, literary criticism, history, cognitive psychology, philosophy, computer science, and statistics. The quest is still ongoing and far from finished.

Surely, having the good sense to recognize the "doability" of a problem should be part of a scientist's intuition. Perhaps, I failed. Durkheim warned us a long time ago that there are problems that sociology can successfully tackle and problems that it cannot realistically approach with a glimmer of hope of providing a solution "in the foreseeable future." Although those problems may become doable at one time or another, "that time … is so distant that it is not worth it to tackle those problems" (Durkheim, 1898, pp. v, vi). Wittgenstein, in his lapidary style, thus prefaced his *Tractatus Logico-Philosophicus*: "What we cannot talk about we must pass over in silence" (Wittgenstein, 1961, p. 3).[2]

Only one problem. Whether a problem is "doable" or "undoable" we may only find out at the end of a long struggle. In a letter to Professor Black dated October 24, 1796, James Watt, the inventor of the steam engine, wrote:

> I did not invent this method piece meal but all at once in a few hours in 1765 I believe. The first step was the idea from the elastic nature of steam of condensing in a separate vessel, 2d the getting out the water by a long pipe and the air by a pump, 3d that the pump would extract the water also 4th that grease might be used in place of water to keep the piston tight, 5th that steam might be employed to press upon the piston in place of air 6 to keep the cylinder warm. The next day I set about it.[3]

And the next day, and the next day, and the next day … Watt's biographer, Samuel Smiles (1865, p. 130) tells us: "[T]hough the invention was complete in Watt's mind [in 1765], it took him many long and laborious years to work out the details of the engine." Even those "few hours in 1765" must be read in context. "There is no question here of any precocious or sudden inspiration," warns French historian Paul Mantoux (1983, p. 319). Watt was well familiar with "fire engines." He had started steam experiments in 1761 (or 1762) and had thoroughly studied Newcomen's engine a couple of years later (Mantoux, 1983, pp. 319–20). My own "night of 1985" had been preceded by years of work spent searching for alternative ways of studying historical processes. The story of those years sheds light on the concerns that have motivated this project.

"It Takes Two to Tango": In Search of the Actor

In the early 1980s, by the end of my dissertation work – an econometric analysis of official strike statistics in the Italian postwar period – I had come to a depressing conclusion. Quantitative strike research had produced an abundant literature in its one hundred or so years of history (Franzosi, 1989a). But that literature was remarkably repetitive and uninspiring (Merton's pathology of science number two, in Diesing's rendering: "Repeated publication of trivial work and academic recognition for sheer quantity of publication"; Diesing, 1991, p. 156). For decades, it had focused narrowly on the statistical relationship between the number of strikes and one measure or another of economic activity – price index, unemployment rate, import figures, production figures, and the like. Occasionally, there would be forays into studying other measures of strike activity (for example, number of workers involved in strikes). But pinning down statistically the determinants of the temporal ups and downs of these other strike indicators proved to be less tractable. As a consequence, that task was seldom embarked upon. Scores of scholars continued to pour their energies into producing countless studies on the empirical relationship between the number of strikes and economic activity – incidentally, this is how scientists proceed: They focus on relationships they can positively support, even to the point of boredom, and ignore what proves to be recalcitrant to their efforts.

The general lack of innovation was not the only problem with the quantitative strike literature. More damagingly, that literature simply missed the point. The exclusive emphasis on what workers do – strike – and at a very aggregate level at that, ignored a basic fact: Strikes represent only one aspect of the broader relationship between workers and employers in a legal/political framework set and guaranteed by the state. To understand what workers do, we must understand what employers and the state do. In other words, "if it takes two to tango, it takes at least two to fight" (Franzosi, 1995, p. 16). Strikes are a multiple-actor, multiple-action phenomenon. Alas, official strike statistics – originally collected to monitor the "moods" of the laboring classes to the benefit of worried elites – do not allow us to say anything about any of that. But, what if you do want to say something about that? What are the empirical prescriptions of that view of history? Which kind of research design? Which kind of data, of method?

Michael Shalev once put it to me very cogently in the course of a conversation we had in Washington, D.C., at the Fourth International Conference of Europeanists in October 1983:

> Roberto – he more or less said – your econometric and spectral analyses of Italian strike data have squeezed official strike statistics for their last drop. Perhaps, it's time to move on. You see, if you have a lemon, you can squeeze it by hand to get some juice out of it. If you

squeeze it with a juicer you get more juice. If you put the lemon in a centrifuge you'll get all the juice in the lemon. But if you need more juice, you'd better get yourself a grapefruit.

The Lemon and the Grapefruit

My work as a "science grocer" had already started during the academic year 1981–82 at the Center for Research on Social Organization (CRSO) at the University of Michigan. At CRSO, Charles Tilly, William Gamson, Jeffery Paige, and their graduate students raised the level of dignity of newspapers as sources of sociohistorical data. Indeed, the "thick" descriptions of newspaper articles on social conflict (strikes, demonstrations, riots, and so on) seemed to provide the key to my search for the actor.

The technique traditionally used in the social sciences to extract a set of characteristics from a text is known as *content analysis*. In content analysis each characteristic of a text of interest to an investigator is formalized as a "coding category" – the set of all coding categories known as "coding scheme." The scheme is then systematically applied to a text to extract uniform and standardized information: If a text contains information on any of the coding categories of the coding scheme, the relevant coding category is "ticked off" (a process known as "coding" in content analysis and carried out by a "coder"). Content analysis then turns words into numbers by counting each tick for each category to obtain basic frequency distributions of the occurrence of certain types of information in the texts. Thus, a coding scheme works like a survey questionnaire administered to a sample of texts rather than to a sample of human respondents. Coder and interviewer play similar roles. In neither case are these figures simple transcribing devices. But in content analysis, the coder plays a greater role in the production of "data" through the interpretation of texts.

Upon my return to Rome, I put into practice the idea of using content analysis on newspaper data for a project on industrial conflict in postwar Italy (1945–80). Nothing substantive came out of that work, only a methodological innovation: A paper-based coding scheme that pushed one step further toward a more fully relational design the scheme adopted by Tilly in his project on popular protest in Great Britain.[4] A year later, at the University of Wisconsin-Madison, I used that scheme as the springboard for the development of a more general computer-assisted and linguistics-based approach to the collection of narrative data.[5] By 1986, at the dawn of the PC era, I had succeeded in developing a first version of a computer-assisted, fully relational coding scheme. With that tool – not to mention several research grants and teams of coders – between 1986 and 1990 in Genoa, Italy, I collected newspaper data on Italian social conflict for the years 1919–22 (over 15,000 articles coded from *Il Lavoro*) and 1986–87 (almost 14,000 articles coded from *L'Unità*).

The approach to text coding that I took differed from traditional content analysis not simply because it was based on direct computer data entry (hardly a claim to innovation given that computers were not around in the 1940s and 1950s when content analysis was first developed). The real difference was my grounding of the coding scheme to underlying structural, linguistic properties of a text, rather than to an investigator's theoretical framework. What I eventually adopted is known as a "semantic grammar" or "text grammar" (as opposed to a "syntax grammar") or "story grammar" (because it works particularly well – if not "only" well – when applied to stories or narrative texts). Basically, a story grammar is nothing but the simple linguistic structure subject-action-object or actor-action-actor with their respective modifiers (for example, number of actors involved, type of actor, time and space of action, reason, outcome).

A story grammar was the ideal tool for my "search for the actor," given the grammar's focus on actors, their actions, and their attributes. And during data analysis (carried out at the University of Oxford between 1996 and 1999) the grammar had more surprises in store for me. The relational properties of the grammar allowed me to use powerful new tools of analysis that promised to get sociology closer to history in its concern with social actors: network models.

Over a twenty-year period (and through many of Watt's sleepless nights), I had succeeded in getting myself a grapefruit, a magic grapefruit that would turn words into numbers and deliver the actor and more.

Of Journeys and Alchemies

From words *to* numbers. This is a journey – the book, a fair account of what I saw during this twenty-year voyage from words to numbers across continents and countries and several academic disciplines – a journey often exhausting, occasionally humiliating, but always exhilarating.

The metaphor of the journey runs through the book providing the imageries that hold the plot together. There is a rich literary tradition built around this metaphor: Life as a journey, as embraced by Christian eschatology; death as a journey, as held by the many ancient cultures that buried the dead with a boat and enough food to undertake the last journey to the other world. You even find that imagery in the unlikely world of science (as in a scientist's journey *to* a discovery). In Claude Lévi-Strauss's *Tristes Tropiques*, the physical journey (to the Brazilian Amazon), the personal, and the scientific journeys fuse together in one of the most beautiful social science books of the twentieth century.

I set off on this journey in search of the actor and to find an answer to a simple substantive sociological question: If "it takes two to tango," how can I document the role of the social actors involved in conflict situations? From sociology, I was forced to march across the territory of linguistics, computer science, and statistics in order to get to the numbers. Occasionally, I would make rapid

incursions into the fields of cognitive psychology, literary criticism, political science, anthropology, and philosophy. And the territory of the historian – to insist on Le Roy Ladurie's image (1979b) – provides the very background of the journey. And this is not only because in the book I entertain a constant dialogue with history, but because I look at the many problems we encounter in this journey through the lenses of time: How other travelers, close and distant, saw those same problems and the solutions they adopted is a fundamental part of the way I write my travel book.

I entertained a constant dialogue with the close and distant travelers I met along the road. My *per agere* – the pilgrimage, the voyage – an academic *per agere*, a traversing of fields, and a *per agere* across time. After all, Descartes (1960, p. 42), who spent a great deal of his life traveling, tells us that "to hold converse with those of other ages and to travel are almost the same thing." I took to heart Giordano Bruno's reproach that I am an "ass," that I am modern out of ignorance of the past. I traced the development of arguments in time, I chased after long-dead authors and precursors in this archeology of knowledge. As French historian Lucien Febvre (1932, p. 9) put it:

> We have lingered, and not without reason, over these distant precursors. There is nothing more essential in the study of any scientific question than to consider the manner in which the first investigators stated the terms of the problem before them, and seldom do we fail to find therein the deep-seated reason for many delays and difficulties.

True. I read countless medieval accounts of *peregrinationes maiores*, fifteenth- and sixteenth-century voyages of discovery, medieval alchemic tracts, and Renaissance treatises on the art of memory. But the past catapulted me into the future. Myself a late twentieth-century reader of Egeria and Saewulf, of Albertus Magnus and Columbus, in writing this book I increasingly started taking the point of view of a reader in the year 2520. Why should you, 2520 reader, be interested in my writing? What's in it for you?

It is the potential for innovation that attracted me to the metaphor of the journey. After all, metaphors are figures of speech that, by definition, link different worlds together (as in "Nancy is a gem," or "time is money"). "*The essence of metaphor is understanding and experiencing one kind of thing in terms of another.*"[6] "The metaphor doubles or multiplies an idea," wrote Giacomo Leopardi,[7] one of the great poets of the early nineteenth century; "it represents more than one idea at the same time." By multiplying images, metaphors provide opportunities for imaginative creativity. For Leopardi, metaphors are a true sign of a poet's "inventive and creative faculty."[8] Lakoff and Johnson (1980, p. 193) go one step further:

> metaphor … unites reason and imagination. Reason, at the very least, involves categorization, entailment, and inference. Imagination …

> involves seeing one kind of thing in terms of another kind of thing. … Metaphor is thus *imaginative rationality*.

And that "imaginative rationality" should be all the more imaginative for the metaphor of the journey. Even by itself, the concept of the journey conjures up complex imageries.

> A journey occurs simultaneously in space, in time and in the social hierarchy. Each impression can be defined only by being jointly related to these three axes, and since space is itself three-dimensional, five axes are necessary if we are to have an adequate representation of any journey. (Lévi-Strauss, 1992, p. 85)

But what did the "imaginative rationality" of the metaphor of the journey help me to see that I could perhaps not have seen without it? Basically, the metaphor exposed me to different types of journeys – religious, military, scientific, and journeys of geographic exploration – and to the accounts left behind by these different travelers. There is a "fundamental link," writes Tucker (1996, p. 29), "between the phenomenon or the idea of travel and the process of reading or writing." The metaphor highlighted different ways of seeing among these different travelers. But it also brought out fundamentally similar linguistic mechanisms across very different types of travel diaries, in particular, the systematic emphasis on certain aspects of the journey and the silence on others. The accounts of the early explorers and conquistadores of the new world tell us very little of the brutality with which they treated local populations in the name of God and of the kings. They tell us very little about the encounters between local women and the European newcomers. But they do tell us a great deal about the riches to expect from further geographical explorations and expeditions. If they could only have more money, more ships, more men … (does this remind anyone of the modern scientific research proposal?) (Ife, 1992, p. 18). Similarly, early Christian pilgrims to the Holy Land only had eyes and ears for what is Christian. They tell us nothing of the dangerous mixture of sacred and profane that such long journeys entail (particularly on ships; particularly for women), of the liminal and liminoid aspects of these experiences.[9] Surprisingly, they are even silent about their emotional experience. The autobiographic and personal element is almost entirely absent in the genre, particularly in the earlier period (Richard, 1981, p. 21). These same mechanisms of silence and emphasis are at work in the media production of news, of those accounts that serve as the basis (as data sources) for the many studies that go "from words to numbers" in the social movement literature. Even our scientific texts – those accounts of our own journeys – present that same odd mixture of silence and emphasis.

While the metaphor of the journey allowed me to see new things, the metaphor also gave me a powerful tool to recount what I saw in new ways – the metaphor as both "ways of seeing" and "ways of telling." The metaphor offered the illusion of artistic creativity: Of enlivening an otherwise dry methodological

text, of drawing parallels and connecting distant worlds, of forging new things (beautiful things) on top of and above the scientific creativity expressed in the sociological imagination, in the development of new tools for answering historical and sociological questions (from words to numbers). The metaphor promised to annul the difference between art and science not only in terms of their common creative spirit – "the motivations, desires, rhythms, and itches which lie behind creativeness in any realm" – but also in terms of the very mode of expressing in writing the scientific products of the sociological imagination. I pursued that promise, treading the common terrain (of aesthetics and problems of knowledge) between artistic and scientific inquiry (Nisbet, 1976, pp. 4, 10).

ALCHIMISTA MEDIEVALIS. *From* words *to* numbers. A journey, you say. But it seems to me more like an alchemy, an alchemic transformation of words *into* numbers.

AUTHOR. Why would I need yet another metaphor for the book, yet another way of reading the text? Don't I have enough as is?

ALCHIMISTA MEDIEVALIS. A book is not interesting unless it is complex. One of your contemporaries, certain Pierre Boulez, wrote:

> A work of which you can discover all its paths once and for all in one go is a flat work, lacking in mystery. The mystery of a work consists, rightly, in this polysemy of levels of reading. Be it a book, a painting or a piece of music.[10]

AUTHOR. This is a scientific text, not a work of art! And even for a work of art, neither Hegel nor Croce (1923) were too fond of allegory and hermeneutic readings, which they regarded as a killer of artistic inspiration.

ALCHIMISTA MEDIEVALIS. Suit yourself. But I don't believe either Croce or Hegel are remembered for their poetry. They have the one-sided view of art as creative illumination, typical of those who are not artists themselves. In any case alchemy would allow you to understand some of your own social science twentieth-century work as alchemy. You do have much to learn from us!

"The Law of Genre"[11]

Genres have their laws – and laws are always constraining.[12] Thus, the content of medieval pilgrims' travel books quickly became ritualized. Was the display of Christian pity that we find in these diaries part of the genre? Was the silence on the nonreligious aspects of one's journey – those aspects you find in Chaucer's *Canterbury Tales* – also part of the genre? What was real and what was fictional in these narratives? With different pilgrims often copying full handedly from other pilgrims' diaries, the line between these two worlds often blurred, a characteristic that was true even for the diaries of the early Renaissance transoceanic explorers.

Scientific texts are particularly subservient to the "law of genre." Having rejected a view of social science as art in our quest for scientific status, we have worked hard at suppressing the stylistic freedom that comes with a view of social science as art.[13] The cost of nonconformity to the "canons" are high. No one knew this better than Georg Simmel (1858–1918), who got his first permanent academic appointment at the age of fifty six in the peripheral University of Strasbourg. Even the warmest of Simmel's supporters were dismayed by his "personal … disorganized, even irritating" writing style (Wolff, 1950, p. xix). With no explanatory footnotes or endnotes, no references to any of his contemporaries' or predecessors' work, Simmel "speaks for himself, along with the immortal dead" (Levine, 1971, p. x). He broke the norm of academic specialization, publishing widely across a range of topics in literature, art, philosophy, psychology, and sociology. He broke the norm of academic jargon, largely addressing his work to a nonacademic audience, and increasingly so in his life (Coser, 1965, pp. 34–6).

In an attempt to unravel the riddle of Simmel's work and life Wolff asked: "Is there a relation between a man's biography and his work?" (Wolff, 1950, p. xvii). Coser provided a brilliant sociological answer to that question. Relying on Merton's work on science and on Merton's concept of *role set* – "the differing expectations as to the behavior of a person occupying a particular status" (Coser, 1965, p. 32) – Coser teased out the close connection between the personal and the professional in Simmel's life. "Simmel's very quest for originality stemmed in part from his self-image as a scholar. … Simmel conformed to the goals of the academy, but he rejected the norms governing the ways and means for their attainment" (Coser, 1965, p. 37). Not surprisingly, Simmel increasingly put his energies where he found rewards. With a continued low status in the German academy in the face of a growing international reputation as a scholar and of a vast following as a histrionic and brilliant lecturer, Simmel increasingly wrote in the same style in which he lectured, addressing in print that same public that faithfully followed his lectures in the Berlin classrooms.

But if the relationship between life and work may be an appropriate subject of social scientific investigation – particularly when this involves the lives of others and when we can bring to bear sociological concepts to the interpretation – the investigation of the relationship between *our* personal and professional lives is out of the question. Science demanded (and obtained) the head of the personal. And in the name of science, the personal has been publicly and repeatedly executed. No differently from the Bordeaux Pilgrim, who traveled to the Holy Land in 333 A.D. and who left behind the first extant account of a pilgrim's journey, we have no eyes or ears for the personal. Few voices have risen to its defense. Among them, C. Wright Mills was a passionate advocate of a social science based on "the interplay of man and society, of biography and history, of self and world."[14] A few years later, Peter Berger revisited the connection between biography, sociology, and history. "Sociological consciousness … is

... a live option for the individual seeking to order the events of his own life in some meaningful fashion" (Berger, 1963, p. 68). In a perhaps overly optimistic view of the "debunking and relativizing" power of sociology, for Berger, sociological consciousness provides the individual with the insight that every world view is "*socially grounded,*" that "every *weltanschauung* is a conspiracy" perpetrated by those "who construct a social situation in which the particular world view is taken for granted" and the basic assumptions are shared unconsciously (Berger, 1963, p. 78). Understanding one's biography as a continuous process of reinvention of the self in light of forever changing social relations, of selection of personal events to fit the current construction of the self, is equivalent to the historian's constant selection and reselection of past events in light of the present's point of view (Berger, 1963, pp. 68–80). Coming from a different discipline, Claude Lévi-Strauss (1992, pp. 58–9) had put it in remarkably similar words: "Anthropology affords me intellectual satisfaction: As a form of history, linking up at opposite ends with world history and my own history, it thus reveals the rationale common to both. ... It allows me to reconcile my character with my life."

C. Wright Mills made the following recommendation to the young scholar: To read widely here and there, to take good notes, to keep open files on many simultaneously ongoing projects, and, more to the point, to "not split their work from their lives" (Mills, 1959, pp. 195–9). In Mills's view (1959, pp. 5, 6, 13), the "sociological imagination" is the key instrument that

> enables its possessor to understand the larger historical scene in terms of its meaning for the inner life ... to grasp history and biography and the relations between the two within society. That is its task and its promise. ... our most needed quality of mind.

Not a popular view of social science, Mills painfully acknowledged. "Of late the conception of social science I hold," he wrote, "has not been ascendant" (Mills, 1959, p. 20). Rather, ascendant is a view of social science that takes a detached view of the scientific process, "value-free social science." The personal, the biographical has no place in science. Durkheim (1938, pp. 32, 34) had no doubts on the issue:

> Our political and scientific beliefs and our moral standards carry with them an emotional tone that is not characteristic of our attitude toward physical objects; consequently, this emotional character infects our manner of conceiving and explaining them. ... Sentiment is a subject for scientific study, not the criterion of scientific truth.

And yet, for all our concerted efforts to keep the personal out of our texts, to situate ourselves *outside* the text can we *really* escape the personal? Can we *really* step outside the play, as in Brecht's theatrical innovation? Do not our texts often emplot our deeply personal world views in unconscious ways – a metahistory in the writing of history, a metascience in the writing of science: