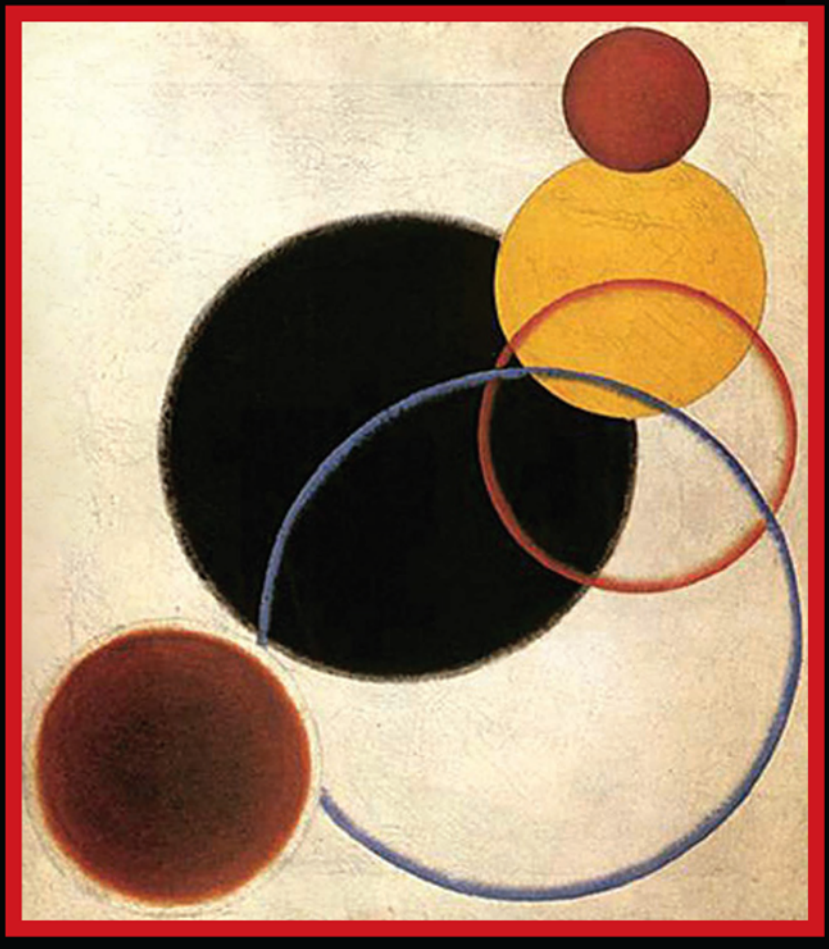
Knowledge and Networking

On Communication in the Social Sciences



Anton Oleinik

Knowledge *and* Networking

Taylor & Francis
Taylor & Francis Group
http://taylorandfrancis.com

Knowledge *and* Networking

On Communication in the Social Sciences

Anton Oleinik

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2014 by Transaction Publishers

Published 2017 by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN
711 Third Avenue, New York, NY 10017, USA

Routledge is an imprint of the Taylor & Francis Group, an informa business

Library of Congress Catalog Number: 2013029953

Library of Congress Cataloging-in-Publication Data

Oleinik, Anton N.
Knowledge and networking : on communication in the social sciences / Anton Oleinik.
pages cm
ISBN 978-1-4128-5301-9
1. Social networks. 2. Social scientists. I. Title.
HM741.O44 2014
302.3--dc23

2013029953

ISBN-13: 978-1-41-285301-9 (hbk)
ISBN-13: 978-1-41-286407-7 (pbk)

Contents

Introduction		1
1	Inquiring into Communication in Science	19
2	From Face-to-Face to Depersonalized Transactions in Science	37
3	Scientific Neighborhoods and Beyond: On Conflicts of Interest	67
4	Replicating Best Practices in Science: Can We Do It?	107
5	To Change or Not to Change: A Case Study	129
6	Interacting with the Generalized Other: On Reading in Science	163
7	Communicating with Students: On Grade Inflation	197
References		215
Index		235

Taylor & Francis
Taylor & Francis Group
http://taylorandfrancis.com

Introduction

"That's how it is in the academic world these days."
—David Lodge, *Small World: An Academic Romance*

Academics have three major obligations: to conduct research (the generation of new knowledge), to be involved in teaching (the transmission of existing knowledge), and to render services to the scholarly community. They are offered jobs; get salary increases, tenure, and promotion; and gain recognition, based on their performance as academic writers, instructors, and members of various committees. Most universities have formal requirements in this respect. When considering applications for an academic appointment, the "candidates' degrees and their records of, and potential for, teaching, research and other scholarly, creative or professional work" must be taken into account (Memorial University of Newfoundland 2010, Article 7.20). The criteria for tenure are similar in nature: they refer to the applicant's "documented effectiveness and scholarly competence as a teacher," "demonstrated record, since the date of appointment, of research, scholarship, or creative and professional activities appropriate to the rank," and "demonstrated record of academic service" (Ibid., Article 11.26).

The scholar's curriculum vitae (CV) summarizes the various achievements. Academics do not miss an opportunity for duly recording new achievements by adding a line or two to their CVs. A paper has been published in a scholarly journal. A new course was designed and taught to undergraduate or graduate students. A talk was given at a scholarly conference. A duty was discharged as a member of a committee.

Nevertheless, it is difficult to see the true outcomes of the scholar's activities behind the impressive-looking lines in one's CV. Was the paper actually read and if so, how was it perceived by the readers? What did the students actually learn from the new course? Was the talk at the conference attended and if so, how did the audience receive it? Did the committee member manage to improve at least some aspects

of the scholarly community's operation? These and similar questions often remain unanswered as a result of the underlying shift of emphasis from the scholar's individual intentions and efforts to the reactions of colleagues and students to them. At the end of the day, what counts is less about publishing a paper, giving a talk, or designing a course than about delivering a message—to fellow researchers and to students.

The scholar's efforts and intentions, however well meaning, do not guarantee the desired outcomes. The outcomes of the scholar's endeavors depend as much, if not more, on the scholar's interactions with other academics. Are they willing and able to receive the scholar's message while adjusting their own plans as a result? One's communicative skills thus necessarily complement other important assets, such as analytical capacities, research experience, and so on.

The scholar communicates both with individuals at arm's reach (colleagues sitting on the same committee or attending the same conference or students taking the scholar's course) and those who are separated in terms of space or time (readers of the scholar's texts). The communicative skills underpinning interactions in these two cases tend to be different. On the one hand, face-to-face interactions involve a great deal of emotions and idiosyncratic factors specific to particular individuals. Scholar X may have particular habits, preferences, values, and personal beliefs that must be accounted for in the interactions. On the other hand, in depersonalized interactions, the focus of attention shifts to the reliability and validity of one's arguments and the data produced in their support.

The transition from one modality of scientific interactions to the other can be compared to a child's learning how to interact with its parents and family members before eventually expanding the scope of the social connections to include friends, classmates, and at the very end, personally unknown people. Arguably, this metaphor also depicts the scholar's evolution. The young scholar first communicates with physically present people: when submitting a term paper to a particular instructor, when making a presentation at a seminar, or when interacting with the academic supervisor. At the next stage, the scholar starts to present papers at national and international conferences and publish papers in journals with a wide circulation. The transition from personalized to depersonalized interactions in science should never be taken for granted, however. It represents numerous challenges that make the prospects uncertain.

At a macro-level, a parallel can be drawn with a problematic conversion of personalized trust into depersonalized trust. Trust represents a foundation of interactions; it allows the interacting parties to form expectations with respect to the behavior of one another.[1] Personalized trust refers to trust in personally known people: family members, friends, acquaintances, classmates and workmates, and so on. Depersonalized or generalized trust refers to trust in personally unknown people, the generalized Other. It is conventionally measured with the help of the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"

The extension of the radius of trust is never automatic; a high level of personalized trust appears to be a necessary but not sufficient condition for a high level of generalized trust. The outcomes of the *World Values Surveys* suggest that there are three groups of societies (Figure I.1).[2] People living in the first group of countries (this includes mainly Latin American and African countries) trust neither socially close individuals nor the generalized Other. They rely solely on themselves in order to solve everyday problems. The second group (this includes mostly North American and Western European countries) represents an example of a successful conversion of a higher than average level of personalized trust into a higher than average level of generalized trust. Finally, the third group (mostly composed of postsocialist countries) can be labeled as "familialistic societies." A higher than average level of personalized trust coexists in their case with a lower than average level of generalized trust. Francis Fukuyama (1995, 49, 86) considers several implications of this arrangement: "Societies that have very strong families but relatively weak bonds of trust among people unrelated to one another will tend to be dominated by small, family-owned and managed business . . . [They are characterized by] the priority of the family over the state, indeed over any other relationship outside the family." The need for cultivating personal relationships takes particularly acute forms in the "familialistic" societies.

Returning to interactions in science, there are several strategies for extending the scope of communication and for reaching out beyond a narrow circle of interlocutors. One strategy involves networking. The scholar can try to extend the scope of the network of personal contacts by making and maintaining connections with as many academics affiliated with various universities, departments, and research centers

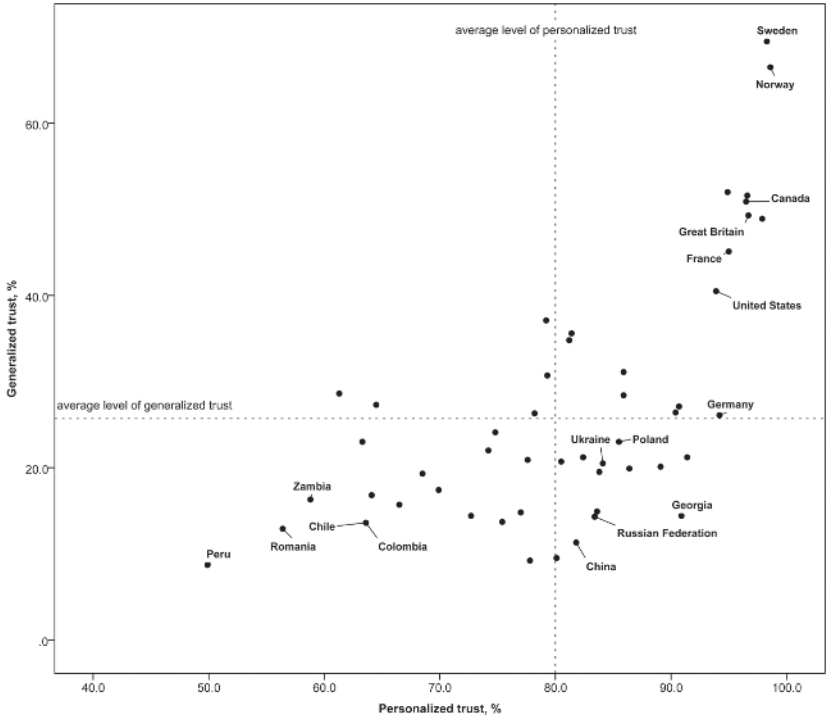


Figure 1.1. The level of personalized trust and the level of generalized trust in 51 selected countries, the World Values Survey, 2005–2007.

Source: worldvaluessurvey.org; percentage of answers "trust completely" and "trust a little" to the questions: "I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much, or not at all? (V127) People you know personally, (V128) People you meet for the first time."

as possible. When the need arises (for instance, there is a job opening at the home department of the scholar's connection), the scholar's network would be of a great help.

The other strategy necessitates investments in securing the citizenship of the Republic of Letters. The Republic of Letters can be thought an ideal type of scientific community built on depersonalized connections among the scholars.[3] In this community, the scholar's idiosyncratic characteristics, such as place of residence and personal sympathies/antipathies, are less important than the comparative strength of arguments and counterarguments and the validity and reliability of the data produced in their support.

I. Enabling and Constraining Effects of Networking

The choice of a particular strategy requires placing oneself on a continuum of priorities, going from networking to advancing knowledge, without regard for personalities. The scholar attempts to find some middle ground between the two extremes. One needs both interpersonal and research skills to address key issues related to the scientific career. The and/both solution, namely, applies to the choice of panelists by organizers of a scholarly meeting, to the selection of contributors of a collective volume, to the selection of the sources cited in a scholar's contributions, and to an academic job search.

The networking factor has an impact on the choice of panelists by organizers of a major scholarly meeting. A paper proposal submitted by a virtually unknown scholar not affiliated with the major networks and academic departments in the disciplinary field has fewer chances of being accepted than a paper of a comparable quality written by a better-connected (and institutionally positioned) peer.

The choice of contributors to a collective volume or encyclopedia is usually based on a similar logic. The editors tend to involve personally known scholars or at least individuals personally known to their friends and acquaintances. If scientists remain outside of the editors' network, they have fewer chances of contributing, no matter how important their scholarship is. In this case, as in the previous one, research and writing skills need to be complemented by networking skills.

Networking has an impact on the selection of the sources cited in a scholar's contributions as well. The number of scholarly journals continues to increase in each field and subfield of knowledge. This flood of information of various kinds makes the task of tracking the contributions that deserve attention extremely difficult, especially taking into consideration the limited cognitive resources. One of the solutions to this problem involves relying on members of the scholar's network; their opinions and expertise then guide the selection of references and sources. As a result, a number of potentially relevant and important contributions remain beneath one's radar as long as these contributions are not made by members of the same network.

Nevertheless, probably the most manifest expression of the importance of networking pertains to an academic job search. Jobs, especially secure (tenured or tenure-tracked) jobs, are becoming increasingly scarce. In Canada, the percentage of PhD graduates who get an academic position—generally their chief aim—has been declining and

is now estimated to be less than 20 percent (Charbonneau 2011). The universities produce too many PhD graduates, as their growing number is not matched by a similar increase in research and teaching positions. For instance, the number of doctorates awarded in Canada in 2009–2010 represents 13 percent of the total number of full-time university teachers—enough to totally renew the Canadian academe every six to seven years.[4] In some disciplines, namely physical and life sciences, and technologies, the ratio of PhD graduates is even higher (25.6 percent). Only a handful of teaching and research positions are opened every year at Canadian universities, which results in long lists of applicants that include from several dozen to hundreds of individuals. Most of them manage to accumulate impressive research and teaching credentials by the time they apply.

Given this overproduction of PhD graduates, good research and teaching credentials do not guarantee a job offer. Personal advocates (lobbyists) make a difference. Whether such advocates exist or not, as well as their number and location depends on the scope and structure of the young scholars' connections. Their networks and the networks of their scientific advisors complement the other assets relevant in science: teaching and publication record, research skills, and so forth.[5] Thus, when choosing a graduate school and a scientific advisor, the scientist in the making should care (if one really wants to get an academic position) as much about opportunities for networking as about acquiring knowledge and research skills.

Given the scarcity of resources available to particular scholars, they are simply unable to simultaneously prioritize both networking and "doing science as such." Both these tasks are time-consuming. They also require continuous attention, which itself is a scarce resource. Thus, scholars have to make difficult choices with respect to the and/both continuum extending from networking to advancing knowledge. The former means being personally introduced to major figures in the discipline and being nice and likable to them and to other scholars. The latter refers to researching a topic, collecting, analyzing or interpreting the data, and writing up a resulting contribution.

As shown before, networking has multiple enabling effects; for instance, it helps get a potentially valuable contribution accepted by the organizers of a prestigious scholarly meeting or editors of a collective volume and ensures that the scholar's message is heard by a wider community. In other words, networking provides scientists with an additional degree of freedom in their academic endeavors.

However, like any other element of the institutional structure, networking also constrains the scientist's choices. "Structure is always both enabling and constraining" (Giddens 1984, 169). Personal and group loyalties—an inevitable by-product of networking—undermine the impartiality of scientists' efforts to generate new knowledge in the endless quest for truth. Networking also produces a permanent drift into conflict of interest in judgments about the value of scholarly works.

If a majority of scholars end up prioritizing networking, science reproduces features of a "small world." Personal connections prevail over depersonalized ones. Who knows who matters more than who knows what. One's status in science derives more from one's affiliation with a specific group of scholars or a particular university than from contributing to advancing knowledge.

This book should not be interpreted as a critique of networking. It would be a mistake to consider networking as the main source of evils in science. This book provides a critique of the existing practices for finding a middle ground between networking and advancing knowledge and for managing conflicts between these priorities.

Tensions between networking and advancing knowledge do not have a discipline-specific character. Although they might take the most manifest forms in the social sciences and humanities, the natural sciences are not immune either to the challenges that eventually facilitate the drift into networking as the main priority of scientific enterprise. A "flood" of scientific information caused by the proliferation of scholarly publications and the fierce competition for increasingly scarce research funds explain its growing relevance. The other contributing factor consists in the institutional organization of the academic market and how the rules for finding jobs in academia—also more and more scarce—are allocated.

The particularities of a discipline probably determine the exact ratio of the effort to be spent on networking and advancing knowledge, however. In this case, the parameters of the equilibrium between the two priorities in scientific enterprise will vary across disciplines. For instance, the need for networking may be relatively more acute in the social sciences than in the natural sciences. Yet in both cases, one can hardly succeed without investing heavily in networking.

This book focuses mainly on the particularities of tensions between networking and advancing knowledge in the social sciences. Most of the examples and illustrations refer to the economic sciences and sociology. The case of economic sciences is particularly revealing. It shows that

the application of the natural-science model to the social sciences is not sufficient. Recent developments in the economic sciences help highlight limitations in bridging communication gaps using only the natural-science model.

The manifestations of these tensions in the natural sciences require a separate study. A comparative study of the situation in academic disciplines seen through its lens would be especially illuminating.

II. Transactional Approach in Science Studies and Sociology of Science

In this book, scientific activities are considered as a particular form of social action. Scientists interact in various contexts—face-to-face and at a distance. They also interact with students (either face-to-face or at a distance by writing textbooks). Networking refers mostly to face-to-face interactions. Advancing knowledge does not involve any geographical or temporal limitations. In fact, it excludes them.

Most scientists are involved in both networking and advancing knowledge, which creates numerous conflicts and tensions. Namely, an uneasy relationship between networking and advancing of knowledge lies at the origin of conflicts of interest in science. A conflict of interest is understood here as the mutually incompatible requirements between the scholar's various roles (as a member of a network versus as a citizen of the transversal Republic of Letters).

Tensions between networking and advancing knowledge arguably have a universal character. However, the institutional environment of science—it determines particular rules of the game in science—varies across countries and periods. The contents of the "toolbox" for addressing challenges in scientific interactions differ accordingly. For instance, the availability of policies for managing conflicts of interest enables one to change the modalities of interactions at will without being excessively attached to only one role.

The fact that the institutional environment varies across countries allows some scholars to outperform (for example, in terms of the number of peer-reviewed publications and the number of references to them in other scholars' work) their fellows working in less fortunate conditions. Attempts to replicate "the best practices" with respect to the organization of science rarely lead to the desired outcomes, however.

The main building block of the analytical construction presented in this book refers to a transactional approach toward studying science. The image of science as a solitary enterprise is hardly in touch with reality.

Even when scientists sit in their offices with their doors closed, there is no escape, from colleagues in either close proximity or ones that are more distant. This copresence, occasionally similar to the presence of an annoying neighbor, sets the stage for competition and rivalry at times, while helping to achieve individually unattainable goals through the joining of forces at other times. In a sense, it may well be more difficult to protect privacy in academic offices than at home, in relationships with family members or neighbors.[6]

If life in science appears so embedded in various relationships and connections, then scientific activities involve a particular case of social action as opposed to individual action. According to Max Weber's classical definition, "action is 'social' insofar as its subjective meaning takes account of the behavior of others and is thereby oriented in its course" (Weber 1968, 4). Human activities in various contexts—political, economic, intimate, to cite just a few—have a social dimension and science is no exception in this regard.

Social action in science takes a specific form, however. Interaction in the marketplace requires that the participants speak the language of utility and get what they want by using money to satisfy the needs of the others. Publications of research findings are a coordination medium in science, namely its "currency." Here, "adjustment takes place by taking note of the published results of other scientists; while in the case of the market, mutual adjustment is mediated by a system of prices" (Polanyi 2000, 4). In order to be heard in science, one must read and write and listen to colleagues and interact with them. Social action in science takes the form of communication. Some scholars even go so far as to equate science to communication (Secord 2004). For instance, the popular concept of the "invisible college" means nothing other than a web of communications among scientists working in the same field of knowledge (Crane 1972).

Scientific communication has several rationales. Any of them or any combination of them can account for the high value placed on communication in science. Scientific enterprise is often described in terms of the search for truth. Truth has an objective and singular character only according to simplistic accounts (Yore, Hand and Florence [2004, 342] attribute them to a "traditional view of science," implying a combination of realist ontology and absolutist epistemology). Even in such "hard" sciences as physics, "truth" tends to result from an agreement among scholars about the relative merits of often-conflicting claims and approaches instead of being "objectively" and "externally" given

(Shapin 1994). The embeddedness of truth in an "agreement reality" takes forms that are even more obvious in other disciplines. An introductory textbook on research methods in sociology, for instance, openly invites readers to consider objectivity as "a matter of communication, as we attempt to find common ground in our subjective experiences. Whenever we succeed in our search, we say we are dealing with . . . the *agreement reality*" (Babbie and Benaquisto 2002, 40, emphasis in the original). If truth has indeed to be agreed upon, then it can be found only through communication.

Science also places a high value on originality. References to this quality prevail in judgments about the merits of a particular discovery or a particular scientist. "In this world . . . beings are appreciated in function of their singularity and . . . the most original turns to be the most worthwhile" (Boltanski and Thévenot 1991, 201; see also Merton 1973d, 294; Hagstrom 1972, 106–110). Restlessly comparing one's achievements with those of other scholars requires regular communications. Nevertheless, the lack of absolute criteria for truth and reference points makes claims of originality and priority pertinent only in a relative and not an absolute sense. As a result, communication often turns into invidious comparisons. "The invidious comparison can never become so favourable to the individual making it that he would not gladly rate himself still higher relatively to his competitors" (Veblen 1934, 31).

The other rationale for scientific communication consists in the need for joint efforts in order to produce cutting-edge research. The collection of large amounts of data, the use of sophisticated technical tools, and advantages associated with the division of scientific labor undermine the capacity of an individual scholar to produce original outcomes. The proportion of single-authored articles is declining in most disciplines (Merton 1973c, 409). An article in cell biology published in *Science* may have as many as eighty-seven coauthors (Dehval et al. 2002). This indicates that large-scale collaboration pays; as of February 1, 2010, Web of Knowledge contains 697 references to this source.

Scientific inquiry implies communication at a deeper, cognitive level as well. Cognition, thinking, involves at least two actors; an opinion must always be compared to and confronted with another one. Dialogues serve to sharpen the initial arguments and incorporate new elements into them. One obtains valuable insights as a result of

adapting a dialogic mode of thinking in place of a monologue. The fact that several theories eventually lead to the same conclusion makes it an element of the agreement reality and hence increases our confidence in it. Their list includes interactionism in sociology, stating that "thinking is . . . internalized conversation" (Collins 1998, 49), semiotics (Bibler 1991, 168; Lotman 1990, 2; Bakhtin 1974, 100), and versions of nonorthodox Marxist dialectics (Batishchev 1997) and activity theory (Shchedrovitsky 2005b, 452; Ratz 2004, 23).

The interpretation of communication as the form of being in science suggests a need to find a new unit of analysis in epistemological studies. Instead of considering science as composed of individual thinkers or theories, greater emphasis shall be placed on transactions between scientists as an elementary form of communication. The *transaction* itself becomes the principal unit of analysis, laying the groundwork for a transactional approach in studies of science.[7] It is argued that a scientific transaction, not an idea (theory, epistemological approach) or a particular individual (scholar) or a group of individuals (network), represents the proper unit of analysis in science studies.

III. Book Outline

The book includes seven chapters, along with this introduction. Chapter 1 focuses on the problematic character of communication in science. Two solutions are compared: paradigm-based science (the natural science model and its extension to the social sciences as represented by economics) and the semiotic solution developed in the arts and social sciences. There are several parallels between the latter approach and Marxist dialectics. A third, original take on communication problems is proposed; it can be labeled "transactional." It represents a version of the semiotic approach with particular emphasis on interactions, both face-to-face and depersonalized, and the imperative of negotiating and finding compromises.

The first chapter is probably the most difficult to read because it develops arguments at a rather abstract level (as shown in chapter 6, an attentive reading of scholarly manuscripts is a time- and resource-consuming activity indeed). However, the investment that its reading requires pays off: chapter 1 provides an abstract solution to the challenges of communication in science. This chapter lays the groundwork for developing the central line of reasoning of the entire book, suggesting, namely, that the outcomes of communication in science depend

on the manner in which scientific transactions are organized, both substantially and formally.

Chapter 2 discusses modalities of communication in science. Scientific communication takes place at two registers: first, interactions with colleagues in close proximity—members of a network, school of thought or circle; second, depersonalized transactions among a potentially unlimited number of scholars (e.g., author and readers). Freedom is interpreted as the scholar's capacity to change the registers at will.

An in-depth case study of the Coase theorem in economic sciences and legal studies illustrates key points in the analysis offered in the first two chapters of the book. The popularity of law and economics (a vibrant and influential academic field within the New Institutional Economics) can be explained in terms of its adherents' ability to act at both registers of scientific communication: face-to-face and depersonalized.

Chapter 2 continues the discussion of a transactional solution to the communication problems, highlighting the often neglected potential of dialectics. Dialectics facilitates the process of reaching a compromise in competing interpretations of the same phenomenon. In other words, dialectics represents a possible substance of scientific transactions.

The interference between the two registers in the peer review process produces a drift toward a conflict of interest, which is the subject of chapter 3. Three particular cases of peer review are differentiated: journal submissions, grant applications, and applications for tenure. Conflicts of interest could be managed more efficiently if several elements and rules of the judicial process were accepted in science. In other words, this chapter discusses some practical solutions to the challenges of communication in science. The analysis relies on both primary and secondary data, with a particular focus on Canada.

The use of some principles of the judicial process in peer review certainly has its own limits. Namely, it would further increase the level of bureaucratization of scientific interactions. It does not exclude an eventual drift into bypassing additional regulations and policies either—studies of the extra-legal sector in the developing countries provides ample examples of how creative individuals may become when searching for loopholes in the excessively constraining legal framework (De Soto 2005). Nevertheless, the existing situation with respect to the management of conflicts of interest in science is not sustainable, which calls for the discussion of potential solutions, including the ones

proposed in this book. These practical solutions suggest exactly how scientific transactions shall be structured in order to facilitate scientists' movement back and forth between the first and second registers. They refer to the formal, procedural side of the organization of scientific transactions (as opposed to their substance).

Chapter 4 discusses the institutional environment of science and argues that the organization of scientific transactions varies across countries. Particularities of the institutional environment have an impact on productivity of scientific enterprise in terms of both research and teaching. They also influence the parameters of the balance between networking and advancing knowledge. For instance, the institutional environment of science shapes the academic job market and thus determines the relative importance of networking for advancing academic careers. The particularities of the institutional environment in North America (taking Canada and the United States as the prime examples) and the former Soviet Union are outlined and compared in this chapter.

Chapter 5 focuses on attempts to replicate Western institutional arrangements and organizational designs in this area that have been undertaken in Russia since the outset of the economic and political reforms of the 1990s. (A reform of the higher-education system occupies an important place in catch-up modernization programs.) The chapter considers a particular transplant, the Higher School of Economics (HSE), established in 1992, and its subsequent evolution. A quantitative analysis of publications prepared by HSE academic staff members and graduate students and included in two major databases, eLibrary (national) and Web of Knowledge (international), serves to shed some light on rules regulating the core activity of the research university; namely, the generation of new knowledge through scientific communication.

A structural analysis of the scientific organization complements the content analysis of publications. The HSE case is placed in comparative context by referring in the analysis to several "representative" Western universities as well as other Russian universities. The structural analysis shows a divergence of the HSE from the organizational patterns that served as a model.

When explaining divergent patterns between the HSE and its Western counterparts, special attention is paid to the issue of power relationships and their role in the functioning of the scientific organization. The emphasis on the issues of power suggests that the university

is not only an organization intended to accumulate human—and eventually, social—capital. It is also a place where individuals, especially young people, should be able to experience democratic interactions, as argued by Robert Dahl (1990).

Chapter 6 discusses modalities of the organization—ideally and in practice—of depersonalized scientific transactions. It explores how scholars read and make sense of the written contributions of their peers who are not members of their immediate entourage. This chapter starts with a discussion of the Republic of Letters, an ideal of scientific communication at a distance, not limited by geographical and temporal boundaries.

Chapter 6 draws on the outcomes of the content analysis of scholarly publications performed by three established Russian social scientists and one junior fellow. They read and content-analyzed each other's works, and then ideas "mined" by the readers were compared with those of the authors of these particular contributions. This chapter shows that the texts have multiple interpretations. Depending on the reading context, either the author's or the reader's perspective prevails. In addition, both the author and the reader may read the text in either a deep or perfunctory manner. Deep reading requires significant time and cognitive resources, which undermines the rule of "the smallest processing effort." This chapter also provides some practical insights into how to improve the organization of depersonalized scientific transactions. They refer to the choice of the genre of scholarly contributions and their reading ease.

Chapter 7 discusses communication between the professor and the student (as opposed to communications between peers) as a particular type of communication in science. They communicate through a number of channels, including textbooks (Hyland 2004, chapter 6). However, this chapter focuses on the grade as a communication medium. The priority given to networking in relations between the professor and the student can cause a drift into grade inflation. Several theories of grade inflation are compared. It is argued that grade inflation results from the substitution of criteria specific to the search for truth by criteria of quality control generated outside academia. The particular mechanisms of the grade inflation that occurs when a university is transformed into a commercial enterprise, an industrial workshop, or an extended family (Alma Mater) are discussed in detail.

* * *

The author would like to thank Dr. Alexandre Métraux (University of Mannheim, Germany), Prof. Volker Meja, Dr. Judith Adler, Prof. Ronald Schwartz (all—Memorial University of Newfoundland, Canada), Prof. Michel Callon (Ecole Nationale Supérieure des Mines, Paris), Prof. Wladimir Andreff (Université de Paris I Panthèon Sorbonne, Paris), Prof. Glen Atkinson (University of Nevada at Reno, USA), Prof. Bohdan Harasymiw (University of Calgary, Canada), Dr. Anton E. Oleinik (Florida Atlantic University, USA), Prof. Howard Schneiderman (Lafayette College, USA, and the *Transaction* editorial consultant) and an anonymous *Transaction* reviewer for their helpful comments and suggestions. Sheryl Curtis of *Commnication WriteTouch* and Hannah Jones of *Transaction* did a great job of editing. However, all remaining inaccuracies are the author's own.

* * *

Earlier versions of some sections of chapters 1 and 2 were published in *Science in Context*, vol. 22, no. 4 (2009), pp. 613–646 (doi: 10.1017/S0269889709990184). A significantly abridged version of chapter 3 (and of a chapter 2 section) previously appeared in *Science and Engineering Ethics*, vol. 19 (2013) (doi: 10.1007/s11948-012-9426-z). Some sections of chapter 5 were included in two stand-alone articles published in *Scientometrics*, vol. 93, issue 2 (2012), pp. 533–551 (doi: 10.1007/s11192-012-0698-5) and the *Journal of Economic Issues*, vol. 46, no. 4 (2012), pp. 881–908 (doi: 10.2753/JEI0021-3624460403). An earlier version of chapter 7 was published in *Educational Research Review*, vol. 4, no. 2 (2009), pp. 156–164 (doi: 10.1016/j.edurev.2009.03.001). Previously published material is reprinted by permission of the copyright holders: Cambridge University Press (publishes *Science in Context*), Springer (*Science and Engineering Ethics* and *Scientometrics*), M.E. Sharpe (the *Journal of Economic Issues*) and Elsevier (*Educational Research Review*).

Notes

1. A more comprehensive discussion of trust and its definitions will be proposed in subsection I.1 of chapter 4.
2. An application of the analysis of various configurations of personalized and generalized trust to organizational studies can be found in Oleinik 2003a, 112–116.
3. The origins and historical evolution of this concept will be discussed in detail in section I of chapter 6.

4. Number of doctorates awarded and full-time university teachers by major discipline, Canada, 2009–2011.

	Full-time University Teachers by Major Discipline, 2010–2011	Doctorates Awarded by Field of Study, 2009–2010	% Doctorates Awarded to Full-time University Teachers
Agriculture, Natural Resources, and Conservation	891	195	21.89
Architecture, Engineering, and Related Technologies	3783	1077	28.47
Business, Management, and Public Administration	3867	204	5.28
Education	2112	372	17.61
Health, Parks, Recreation, and Fitness	7458	450	6.03
Humanities	5580	468	8.39
Mathematics, Computer, and Information Sciences	2823	399	14.13
Personal, Protective, and Transportation Services	51	6	11.76
Physical and Life Sciences, and Technologies	5709	1461	25.59
Social and Behavioral Sciences, and Law	8208	969	11.81
Visual and Performing Arts, and Communication Technologies	2031	96	4.73
Other	507	39	7.69
Not applicable/not reported	408	–	–
Total	43428	5736	13.21

Source: CAUT 2012, 22-29, 48

5. When discussing the idea of this book with a natural scientist, the author was told his story of searching and finding a tenured position. As in the case of many holders of a recently awarded PhD degree, this natural scientist sent his CV, publication samples, and supporting letters to several prospective employers—geoscience departments. His CV, academic background, and research skills looked impressive by any account, allowing that

colleague to hope that the job search would not be problematic. However, he got just one job offer. It came from a department in which some of his personal acquaintances worked. Personal connections played a role in the department's decision to short-list the colleague in question, to interview him, and finally to offer him a tenure-track position. Yet the networking factor does not explain the entire story (a success story, as a matter of fact, in this particular case). When being interviewed, the natural scientist was invited to see a private collection of minerals created by a senior member of the department. No names were attached to the minerals and stones—only identifying numbers. The senior scholar was really impressed by the applicant's capacity to name particular specimens based solely on a visual and manual inspection. In the final account, the senior scholar joined the ranks of the department members who lobbied for the applicant's bid. The individual's networks helped him. Yet without his excellent mastery of the subject matter—minerals and related objects—he would not have been offered the position he sought.

6. Various arrangements serve to keep a part of one's personal life closed to other family members, even a spouse (their absence is immediately felt; see Shlapentokh 1989, 182). Furthermore, the system of lifetime employment in academia (tenure) makes the task of reconfiguring immediate professional contacts more difficult than getting a divorce and starting a new family. As for neighbors, economists suggest that even the nastiest of them could be persuaded by rational arguments. For instance, a noisy neighbor could be offered a monetary compensation, if the added value of the activities requiring silence exceeds the profits and pleasures associated with the noise (Coase 1988). Yet science does not necessarily imply a pecuniary motivation, which makes such deals less appropriate.
7. In economic sciences, John Commons (1931, 652) advocates a similar change in perspective when proposing the "shift from commodities and individuals to transactions" as the unit of analysis.

Taylor & Francis
Taylor & Francis Group
http://taylorandfrancis.com