

2015

Complex Business Contracts: Lessons from Mining Agreements

Erich Schanze

Bluebook Citation

Erich Schanze, *Complex Business Contracts: Lessons from Mining Agreements*, 12 U. St. Thomas L.J. 77 (2015).

This Article is brought to you for free and open access by UST Research Online and the University of St. Thomas Law Journal. For more information, please contact lawjournal@stthomas.edu.

ARTICLE

COMPLEX BUSINESS CONTRACTS: LESSONS FROM MINING AGREEMENTS

ERICH SCHANZE*

INTRODUCTION

Christian Kirchner was an unusual scholar and teacher in many ways. He started his career with two unconventional topics that would normally be chosen much later. For his legal dissertations at Harvard and Frankfurt he chose *international cartels*.¹ For his economic dissertation he selected *international accounting*.² In a sense, he “inherited” these two topics from another unusual teacher, Heinrich Kronstein. But he was Christian Kirchner, and hence he treated them in a distinct “Kirchnerian” way, a specific and unique mix of functional legal and economic analysis.

Christian was working on these two problems when I met him again in Frankfurt after his return from Cambridge, Massachusetts, in 1973. I had been there a couple of years before him and had been involved mainly in problems of contracting and corporate law. These were much more conventional topics for an academic interested in comparative law. In this situation we were both looking for further topics, and we decided to explore jointly law and economics,³ and particularly, the law and policy of *international*

* Professor emeritus and former managing director, Institute for Comparative Law, Philipps Universität Marburg, Germany; permanent guest professor for law and economics, Faculty of Law, Universitetet i Bergen, Norway.

This lecture was given in memory of Christian Kirchner at the University of St. Thomas School of Law, Minneapolis, Minnesota, on September 6, 2014. The lecture form has been maintained. Footnotes have been added parsimoniously. My thanks to Wulf Kaal and the members of the University of St. Thomas Law Journal who kindly organized the memorial symposium and provided diligent editorial assistance.

1. CHRISTIAN KIRCHNER, INTERNATIONALE MARKTAUFTEILUNGEN [INTERNATIONAL MARKET SHARING] (1975). The unpublished Harvard thesis of 1972 was written under the supervision of Donald Turner and Richard Caves.

2. CHRISTIAN KIRCHNER, WELTBILANZEN [GLOBALLY CONSOLIDATED FINANCIAL STATEMENTS] (1978).

3. CHRISTIAN KIRCHNER, ERICH SCHANZE & HEINZ-DIETER ASSMANN, ÖKONOMISCHE ANALYSE DES RECHTS [ECONOMIC ANALYSIS OF LAW] (2nd ed. 1993).

mining agreements. We cooperated very closely for more than ten years and co-published six books, supervising another handful.⁴

It is clear that mining agreements were, and indeed still are, operating in a world of cartelization. But that was not the main aspect emphasized by Christian. He stressed the importance of information and proper accounting in these complex arrangements. At the symposium, Christine Windbichler talked about the central role of accounting in *corporate governance*. I will start here by emphasizing the vital role of accounting in *contracting*. Normal contract law seems to have nothing to do with accounting. In the sale of a widget, accounting is a discreet matter, as irrelevant as the motivations of the parties who sell and buy.

Things change dramatically once we investigate long-term relationships between commercial parties. When I studied in the US in the late sixties it looked as if the structure of production was dominated by large companies, or rather groups of companies under common direction. You may remember John Kenneth Galbraith (who lived up our street at Cambridge) and who talked about “the technostructure,”⁵ or Alfred Chandler who would picture production in terms of “managerial hierarchies.”⁶ If you look at the production of our day, say of an automobile, a robot, advanced computer hard- or software, or banking or law services, you will notice that we produce complex goods and services in contractual networks between legally independent firms. I understand the underlying legal structure as a “symbiotic arrangement,” distinct from classical contract and corporate law.⁷ In this class of intense long-term contractual relationships that dominate current business interactions, trust, motivation, innovation, and, of course, constant information flows and accounting are at the very core.

I. LESSONS FROM MINING AGREEMENTS

Why did we choose mining contracts in 1974? In late 1973, the Arab members of the Organization of the Petroleum Exporting Countries (OPEC) proclaimed an oil embargo, and the price of a barrel of oil rose from three

4. See, e.g., CHRISTIAN KIRCHNER, ERICH SCHANZE ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES, PART 1: INTERESTS, BARGAINING PROCESS, LEGAL CONCEPTS* (Kluwer, Studies in Transnational Law of Natural Resources Ser. No. 1, 1979); ERICH SCHANZE, CHRISTIAN KIRCHNER ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES, PART 2: ANALYSIS OF PROJECT AGREEMENTS* (Kluwer, Studies in Transnational Law of Natural Resources Ser. No. 2, 1981). A summary of issues is found in the final volume, GÜNTHER JAENICKE ET AL., *INTERNATIONAL MINING INVESTMENT: LEGAL AND ECONOMIC PERSPECTIVES*, (Kluwer, Studies in Transnational Law of Natural Resources Ser. No. 11, 1988); see also Erich Schanze, *Regulation by Consensus: The Practice of International Investment Agreements*, 144 J. INST. & THEORETICAL ECON. 152 (1988).

5. JOHN KENNETH GALBRAITH, *THE NEW INDUSTRIAL STATE* (1967).

6. ALFRED D. CHANDLER, JR., *THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS* (1977).

7. Erich Schanze, *Symbiotic Arrangements*, in 3 *THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW* 554–59 (Peter Newman ed. 1998).

dollars to nearly twelve dollars.⁸ The Western economies were severely affected. Everybody talked about oil. Studies of oil contracts mushroomed. Our institute at Frankfurt had contact with Metallgesellschaft, at that time the most important German metal trading house. We also were in touch with David Smith and Louis Wells at Harvard who were consulting in the area of third-world mining.⁹ It was clear that the supply of many metal ores and related semi-finished products was of critical importance for the German industry. Instead of looking at oil, we decided to do an industry study of hard mineral mining in developing countries. We collected data about the industry, specifically master agreements of mining projects and related documents. Financed by the German Academic Research Council, we formed a working group and in a period of five years were able to obtain a fairly comprehensive global picture of the existing projects and practices.¹⁰

Open-pit metal mining projects are among the largest and most controversial industrial projects. The investments are immense. In many cases a complete infrastructure has to be built from scratch. The related legal documents need many shelves. The Frankfurt group published eleven volumes containing our analyses. In the *Festschrift*, a collection of writings in memory of Christian Kirchner, I have reviewed some of our findings, evaluating them from a *research* perspective after thirty years.¹¹ Here, I will turn to the question of what we could learn from the study of mining agreements for *teaching*. The Frankfurt project on “Mining Agreements in Developing Countries” is not just an icon in empirical legal research of the past.¹² For the present, it is a most stimulating base for understanding and especially teaching complex contracting in an international setting.

It is by historical coincidence that the modern neo-institutional theory of long-term contracting—associated in the US with the names of Lester Telser,¹³ Oliver Hart,¹⁴ Oliver Williamson,¹⁵ Ron Gilson,¹⁶ Victor

8. 1973 Oil Crisis, WIKIPEDIA, https://en.m.wikipedia.org/wiki/1973_oil_crisis (last visited Nov. 30, 2015).

9. DAVID N. SMITH & LOUIS T. WELLS JR., *NEGOTIATING THIRD WORLD MINERAL AGREEMENTS: PROMISES AS PROLOGUE* (1975).

10. Hans-Joachim Mertens & Gerald Spindler, *Internationales Rohstoffrecht: Bericht über ein DFG-Forschungsprojekt* [International Mineral Law: Report on a DFG research project], 53 *RABELS ZEITSCHRIFT FÜR AUSLÄNDISCHES UND INTERNATIONALES PRIVATRECHT* [RABEL JOURNAL OF COMPARATIVE AND INTERNATIONAL PRIVATE LAW] 526–50 (1989).

11. Erich Schanze, *Internationales Rohstoffrecht* [International Mineral Law], in *FESTSCHRIFT ZU EHREN VON CHRISTIAN KIRCHNER* [Writings in Honor of Christian Kirchner] 253–67 (Wulf A. Kaal, Matthias Schmidt & Andreas Schwartz eds. 2014).

12. See Richard M. Buxbaum, *International Mining Projects as a Research Paradigm of Transnational Economic Law*, in JAENICKE ET AL., *supra* note 4, at 101–24.

13. Lester G. Telser, *A Theory of Self-enforcing Agreements*, 53 *J. BUS.* 27, 27–44 (1980).

14. See OLIVER E. HART, *FIRMS, CONTRACT, AND FINANCIAL STRUCTURE* (1995).

15. OLIVER E. WILLIAMSON, *MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS*, ch. 5 (1975).

16. Ronald J. Gilson, *Value Creation by Business Lawyers: Legal Skills and Asset Pricing*, 94 *YALE L.J.* 239–313 (1984).

Goldberg,¹⁷ Charles Goetz and Bob Scott,¹⁸ Alan Schwartz,¹⁹ and many more—was developed during the time of our project.

II. SHIFTING THE PERSPECTIVE: LAW AS REMEDY OR LAW AS PREVENTION OF CONFLICT

How would we merge the findings of an empirical study of “big deals” with modern neo-institutional contract theory? This has been my research and teaching agenda for twenty-five years.²⁰ It resulted, among others, in a course called “Complex Business Contracts.”²¹ It is not just a course on sizable international business transactions that assembles the knowledge of comparative law in that field. The course tries to *shift* the basic perspective of contract law.

Standard contract law looks at contracting from a “remedial” perspective. A judge determines in a contract dispute whether there is a contract at all, what is meant by the parties (content), or whether there was a failure of performances. Remedies are granted, sometimes by resorting to “gap filling” and “default rules.”²² Rules and case law have been developed over the centuries.

Complex contracting in business environments tries to operate by *avoiding* court litigation. The example of mineral agreements is most instructive. These arrangements between host states and investors frequently operate without, or with very limited access to, normal forms of litigation. Hence, there is a need for changing the perspective. Lawyers are required to *make* the law for the parties. They have to engage in a shift to a “cautionary” or “constructive” perspective—to dispute prevention by drafting *incentive-compatible contracts*.

The theory of drafting workable arrangements starts with the notion that conflict avoidance requires the *planning* of conflict channeling devices.²³ We will never live in a conflict-free world. But we can reduce con-

17. Victor P. Goldberg, *Regulation and Administered Contracts*, 7 BELL J. ECON. 426–48 (1976).

18. Charles Goetz & Robert E. Scott, *Enforcing Promises: An Examination of the Basis of Contract*, 89 YALE L.J. 1261 (1980).

19. Alan Schwartz, *The Case for Specific Performance*, 89 YALE L.J. 271 (1979).

20. After teaching a short German drafting course at Oldenburg from 1988 until 1995, I taught the English course at the University of Virginia in 2000; at Bond University in 2001; at the University of St. Gallen in 2009; and at the University of Bergen regularly from 2006 until today.

21. I have prepared a couple of readers for the course, including *Complex Business Contracts* (Erich Schanze ed. 2007) (course book, printed on demand, for Univ. of Bergen); and *Structuring International Business Transactions – Law and Economics* (Erich Schanze ed. 2009) (course book, printed on demand, for Univ. St. Gallen).

22. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989).

23. On the problem and the styles of managing tensions, see ROBERT H. MNOOKIN, SCOTT R. PEPPEP & ANDREW S. TULUMELLO, *BEYOND WINNING: NEGOTIATING TO CREATE VALUE IN DEALS AND DISPUTES* 51–68 (2000).

flict by employing matching institutions. The use of institutions is not costless, but generally it is less costly than living in constant dispute. The deeper problem is that human beings cannot predict the future. Our future is uncertain. But we are able to transform a major portion of uncertainty, more precisely “Knightian uncertainty” to “Knightian risk,” if we know the odds.²⁴ The required statistical analysis not only requires accumulated knowledge of past events, but it is only feasible in a state of *continuity*, or in other words, in a world of stable institutions such as property rights, reliable contracting, compensation schemes, and their enforcement. Stable property rights and reliable expectations from contracting enable us to make private or business plans. Indeed, the wealth of our societies does not only depend on the Smithean division of labor but even more on the possibility of tackling the future by planning within a framework of stable institutions. The key idea is: “He who sows must also be able to harvest.”

III. PLANNING TASKS

Drafting a complex business contract involves four planning tasks: performance planning, risk planning, revision planning, and litigation planning.

A. Performance Planning

The specification of performances requires an exchange of information about the characteristics of the goods and services involved. In complex agreements this is not merely a descriptive task of existing contractual objects. Think of a large industrial project like a mine, which also involves the integration into the environment.²⁵ A blueprint of the project has to be developed. The staging of tasks has to be arranged. The relationship between potential contractors and subcontractors is to be considered. Drafting a mining agreement like the Bougainville master agreement reflects not only the standard phases of mining, like prospecting, exploration, and assessing and building a project for exploitation, but also reflects a complete infrastructure including housing for workers and their families, a harbor, complicated environmental concerns with roads and tailings reservoirs, and especially the clearing of numerous anthropological questions in the broadest sense.²⁶ Information and documentation is not just a matter of *preparing* the con-

24. FRANK KNIGHT, *RISK, UNCERTAINTY AND PROFIT* (1921).

25. Linkages are a puzzling problem in mining investment in developing countries. The host country may have classical state objectives like road building, education of skilled workers, and health care, which may be side effects of a large industrial project like an iron ore mine. The private project objectives, however, have to be aligned with the public interest in an optimal allocation of infrastructural resources. For the localization of the workforce, see Martin Bartels, *Localization of Labor*, in SCHANZE ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES*, PART 2, *supra* note 4, at 198–211.

26. See Schanze, *Regulation by Consensus*, *supra* note 4, at 153–55.

tract. An *ongoing information process* has to be organized. I will come back to this shortly in the context of remembering Christian Kirchner's key chapter to the second volume of our study, under the heading of "Information Disclosure."²⁷

B. Risk Planning

I have already mentioned the fundamental relevance of risk in contract, and specifically its relation to Frank Knight's insights on insurable risk and the relevant institutional setting. In contract planning we are obviously concerned with *performance programs* for the future, and performances are contingent on many risks. True, there are risks in standard one-shot contracting, mainly non-performance and quality risks. Once we move on to complex long-term arrangements we are typically confronted with a changing environment over time. The legal rule of *pacta sunt servanda* does not fully cope with this problem. In terms of risk analysis, it is a simple scheme in that it leaves all contract risks where they lie. There is no doubt about the expedience of such rules in simple one-shot transactions; however, long futures also require the drafting of *revision programs*.²⁸ I do not want to be misunderstood at this point; I am not arguing against the rule of binding contracts, and for allowing a manipulation of contracts by ad-hoc judicial intervention. Rather, I am emphasizing taking future changes seriously by treating them explicitly in a state-of-the art agreement.

C. Revision Planning

Mining agreements present a rich empirical background for understanding failures of drafting, but also for spotting viable mechanisms for revision. One of the many lessons we learned was that it might be prudent to include a "General Investment Plan" in the agreement.²⁹ This part of the contract would specify projections on the feasibility of the mining project, including realistic scenarios based on discounted cash-flow analysis. The explicit projections could then be used in a future adjustment of the terms of the contract. There are numerous options for contract adaptation in practice. There are mechanisms of stabilization, automatic adaptation, most-favored clauses, and stipulations of procedures for adaptation and change which I

27. Christian Kirchner, *Information Disclosure*, in SCHANZE ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES*, PART 2, *supra* note 4, at 69–106.

28. SMITH & WELLS, *supra* note 9, at 3, 121. A detailed study on contractual adaptation mechanisms within our study project was provided in MARTIN BARTELS, *CONTRACTUAL ADAPTATION AND CONFLICT RESOLUTION BASED ON VENTURE CONTRACTS FOR MINING PROJECTS IN DEVELOPING COUNTRIES* (Kluwer, Studies in Transnational Law of Natural Resources Ser. No. 8, 1985).

29. I have developed this idea in detail in ERICH SCHANZE, *INVESTITIONSVERTRÄGE IM INTERNATIONALEN WIRTSCHAFTSRECHT* [Investment Treaties in International Business Law] 161–83 (1986).

cannot treat here in detail. Revision planning in mining contracts is treated in a separate volume of our study.³⁰

D. *Litigation Planning and Conflict Screening*

Revision planning is closely related to litigation planning. Let me turn now to this last central planning aspect, coping with potential disputes between the parties. The standard approach would be to specify a court, be it a national court or an arbitration panel, and to specify an applicable law.

In mining agreements there is a severe problem with selecting either a host-state court or home-state court of the investor. The host state is typically a party to the contract, but the home-state court may be prejudiced toward the investor. Given the fact that some of the applicable law governing the mining operation will be *ius cogens* of the host state, there will be an unavoidable split of applicable law. The famous or infamous resort to international arbitration employing a *lex mercatoria*³¹ of mining may be a shot in the dark.

This means that litigation planning has to look for non-standard solutions. During the analysis of mining agreements we developed an institutional mechanism, which we termed “conflict screening.”³²

Instead of formulating conditions of direct recourse to a classical court, we suggested the use of “screens” or filters for settling disputes. We distinguished between “internal” and “external” screens. A first screen might be an internal dispute resolution body within the board of directors or supervisory board. Construction contracts contain routine clauses requiring the employment of an independent engineer if a dispute arises about technical problems.³³ We divided between accounting issues and technical matters and devised a further screen of either in-house ad-hoc professional working groups or external independent engineers or accountants for settling disputes in their area of competence. We also installed a screen of conciliation before, for example, a final board of arbitration would be employed. An important aspect of conflict screening is, of course, the requirement of a fixed and strictly enforceable timeline for each step. Otherwise the scheme would be an invitation for strategic action by one of the parties. Moreover, it should be clear that a complicated machinery of screens only makes sense

30. See BARTELS, CONTRACTUAL ADAPTATION, *supra* note 28.

31. Affirmative on the relevance of using a *lex mercatoria*, see KLAUS PETER BERGER, THE CREEPING CODIFICATION OF THE NEW LEX MERCATORIA (2nd ed. 2010).

32. Our first explicit use was in the context of drafting a hypothetical joint venture contract for deep seabed mining. See GÜNTER JAENICKE, ERICH SCHANZE, & WOLFGANG HAUSER, A JOINT VENTURE AGREEMENT FOR SEABED MINING, 22 (Kluwer, Studies in Transnational Law of Natural Resources Ser. No. 5, 1981).

33. An important current application of the concept of conflict screening is found in the ICC Model Turnkey Contract for Major Projects, articles 66 and 67, where disputes are initially referred to a “Combined Dispute Board.” See Int’l Chamber of Commerce [ICC], *ICC Model Turnkey Contract for Major Projects*, ICC Doc. 460-16/56rev18 (2007 ed.).

for very sizeable investment projects. I should mention at this point that nobody was talking about Alternative Dispute Resolution (ADR) when we developed these new concepts of dispute settlement.

IV. SELF-ENFORCING AGREEMENTS

In my view, one of the most enlightening theories in the field of complex long-term contracting is Lester Telser's concept of self-enforcing agreements.³⁴ His 1980 paper contains a neo-classical model that may be shocking at first blush for neo-institutional economists, and for lawyers in particular, because the paper contains algorithms galore and assumptions that are far from reality.

The concept is simple. Assume two contracting parties who plan a co-operation. There is no third party intervention, say by a court or equivalent. The parties set the terms. There are no rules on violation. Both parties may terminate the co-operation at will at any time in the future. The critical point is a long time horizon. Even in the standard economic model, information about the future is lacking. The calculation of the net present value of the relationship for each party at every point in time leading to a breach is incomplete, even in this fictitious world. The key question of the actors in this model is contained in The Beatles' line, "*Will you still need me, will you still feed me, when I'm sixty-four?*"³⁵ Assessing gains and losses in an environment of uncertainty, risk-averse parties will avoid breaching, and instead stay in their current relationship.

V. HOSTAGES, SEQUENCING, AND OTHER MECHANISMS OF EXTRA-LEGAL ENFORCEMENT

The idea of self-enforcing agreements gets closer to reality if additional mechanisms are considered that play, in my view, a fundamental role in practice. At the same time when we inspected the practice of mining agreements and found mechanisms of self-enforcement, Oliver Williamson developed the notion of *hostages to secure exchange*.³⁶

Mining agreements and the related financial instruments are full of *bonding* ideas and clauses. I remember the Liberian case where the German development bank seized the crusher as their property.³⁷ The crusher is literally the central machinery on a mine where the ore will be crushed for getting on to the ball mills, and from there to the concentrator. In another case, workbenches, the key machinery for production frequently remains in

34. Telser, *supra* note 13.

35. THE BEATLES, *When I'm Sixty-Four*, on SGT. PEPPER'S LONELY HEARTS CLUB BAND (EMI Records, Ltd. 1967).

36. Oliver E. Williamson, *Credible Commitments: Using Hostages to Secure Exchange*, 73 AM. ECON. REV. 519-40 (1983).

37. Interview with Dr. Heinrich Harries, Board Member, Kreditanstalt für Wiederaufbau [German Bank for Reconstruction & Development], Frankfurt am Main (March 28, 1979).

the hands of the central agent. One-sided default clauses may work as hostages. But there are also human hostages taken. We see numerous cases where key personnel are exchanged between the parties, like princes and princesses in medieval times.

A mechanism related to hostages is *sequencing*.³⁸ It is a variation of diversification in a timeline. Investors dissect the investment into stages or phases. They promise to enter the next stage if, and only if, the host country complies with the contractual terms. This serves as a counter measure to the so-called “obsolescing bargain,”³⁹ the typical trap built by the host state, once the investment is being made.

Hostages and sequencing are mechanisms that operate completely outside third-party enforcement. Important mechanisms that still work without court intervention are reputational sanctions, and particularly, open naming, blaming, and shaming⁴⁰ of breaching parties. A further mechanism to secure ongoing exchange is the introduction of outside monitors, such as financial institutions and international or national investment insurance schemes⁴¹ that might be relevant for the international standing and creditworthiness of a state, or for the next investment. A closer look into the complete set of contracts documenting large modern investments shows the building of international alliances as security networks for bonding complex transactions.⁴²

Teaching a course about Complex Business Contracts would be incomplete without resorting to these mechanisms derived from practice. Additionally, I stress the relevance of creating value by observing state-of-the-negotiation theory as exposed, for example, in the text of Bob Mnookin and his Harvard project,⁴³ plus some newer insights from behavioral economics.⁴⁴ But my main source of inspiration remains the study of mining agreements and my later interest in the practice and theory of franchising.

VI. ACCOUNTING FOR CO-OPERATION

My final remarks return to Christian Kirchner’s contribution in our contract study in the seventies and eighties, and its relation to research and teaching today. Whereas I was concerned with “Forms of Agreement and

38. See Schanze, *INVESTITIONSVERTRÄGE*, *supra* note 29, at 175 for detail.

39. THEODORE H. MORAN, *MULTINATIONAL CORPORATIONS AND THE POLITICS OF DEPENDENCE: COPPER IN CHILE* (1975).

40. The concept was first presented by William L.F. Felstiner, Richard L. Abel & Austin Sarat, *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming . . .*, 15 *L. & SOC’Y REV.* 631–54 (1980).

41. See Schanze, *Regulation by Consensus*, *supra* note 4, at 163–66.

42. *Id.* at 166–68.

43. MNOOKIN ET AL., *BEYOND WINNING*, *supra* note 23.

44. *MORAL SENTIMENTS AND MATERIAL INTERESTS: THE FOUNDATIONS OF COOPERATION IN ECONOMIC LIFE* (Ernst Fehr et al. eds., 2005).

the Joint Venture Practice,”⁴⁵ Christian chose the mesmerizing topic of “Information Disclosure” in mining agreements.⁴⁶ The choice of topic alone was a stroke of genius. It implied a deeper and, indeed, unexplored idea about the functioning of economic long-term arrangements. As I understand it today, when I teach Complex Business Contracts, Christian had an early hunch that the daily practice of accounting for corporations or corporate groups contained an *elementary mechanism* that would also be relevant for complex long-term contracts between independent partners in economic collaborations.

As one would expect from Christian, he engages in his chapter in a highly structured and original analysis of the topic. He does not remain within the accountant perspective, which basically offers a rule-based statement of historical transactions assembled in the balance sheet and associated documents. Instead, he looks at the comprehensive information process in our actor model.⁴⁷ His approach not only includes the principal participants to the contract, investor and state, but also international organizations, producers’ associations, and many other actors who are relevant to the deal. For every single relationship, he first discusses the characteristics of the relevant information instruments. Then he goes on to aspects of time, quantity, and quality of the relevant information.⁴⁸ This seemingly abstract and almost repetitive discourse is illuminated by constant quotes of clauses used in our large collection of mining contracts.

Christian’s analysis demonstrates that *information sharing* is fundamental for defining a fair claim to the proceeds of *any* business project, be it an incorporated venture with risk bonding by shareholders, or be it joint venture or another symbiotic relationship between independent business partners.

The functioning of the global structure of production of our time depends crucially on what I would term today, “accounting for co-operation.” Let us heed this lesson from the strange field of mining agreements in developing countries. Accounting for co-operation offers a formidable program for research and teaching, inspired by law and economics.

May I end here, confessing a secret? The best way to memorialize and to pay tribute to the unusual scholar and teacher Christian Kirchner is *to read him closely*. I strongly recommend reading the third chapter of *Mining Ventures in Developing Countries, Part 2: Analysis of Project Agreements*.⁴⁹

45. Erich Schanze, *Forms of Agreement and the Joint Venture Practice*, in SCHANZE ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES, Part 2*, *supra* note 4, at 20–67.

46. Christian Kirchner, *Information Disclosure*, in SCHANZE ET AL., *MINING VENTURES IN DEVELOPING COUNTRIES, Part 2*, *supra* note 4, at 68–107.

47. *Id.* at 71–73.

48. *Id.* at 73–74.

49. *Id.* at 68–107.