

Social Rules

Origin;

Character;

Logic;

Change

edited by

DAVID BRAYBROOKE

Social Rules



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Social Rules

Origin; Character; Logic; Change

EDITED BY
David Braybrooke

 **Routledge**
Taylor & Francis Group
New York London

Transitions: Asia and Asian America

First published 1998 by Westview Press

Published 2018 by Routledge
711 Third Avenue, New York, NY 10017, USA
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

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

Copyright © 1996 Taylor & Francis

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Notice:

Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

A CIP catalog record for this book is available from the Library of Congress.

This book was typeset by Letra Libre, 1705 14th St., Suite 391, Boulder, Colorado 80302

ISBN 13: 978-0-8133-9103-8 (pbk)

Contents

<i>Preface</i>	vii
<i>Acknowledgments</i>	xii
<i>Contributors</i>	xiii

PART ONE THE LOGICIANS' AND PHILOSOPHERS' APPROACH TO RULES

1 The Representation of Rules in Logic and Their Definition, <i>David Braybrooke</i>	3
2 Hyperdeontic Logic: An Overview, <i>Peter K. Schotch</i>	21
3 Normative Explanations, <i>Geoffrey Sayre-McCord</i>	35
4 Rules and the Rationality of Scientific Cultures, <i>Bryson Brown</i>	53
5 Changes of Rules, Issue-Circumscription, and Issue-Processing, <i>David Braybrooke</i>	75
6 The Nature of Customary Law in the Manor Courts of Medieval England, <i>Lloyd Bonfield</i>	85
7 Worries About Quandaries, <i>Richard W. Miller</i>	105
8 Rules and Resources: The Legitimation of Political Parties in France and the United States, <i>Ronald Aminzade</i>	115
9 Synoptic Comment on Applications of the Logical Theory of Rules, <i>David Braybrooke</i>	131

PART TWO TRANSITION

10 Do We Know Enough About Legal Norms? <i>Charles Silver</i>	141
11 Notes on the Logic of Legal Change, <i>Lewis A. Kornhauser</i>	169

PART THREE THE ECONOMISTS' APPROACH TO THE ORIGIN OF RULES AND TO CHANGES IN THEM

Comment on Reconciling the Philosophers' Approach with the Economists', <i>David Braybrooke</i>	185
--	-----

12	Institutional Change: A Framework of Analysis, <i>Douglass C. North</i>	189
13	Conceptions of Social Rule, <i>Lewis A. Kornhauser</i>	203
14	The Origin of Rules in Uncertainty, <i>Ronald A. Heiner</i>	217
15	Rules, Equilibrium, Beliefs, and Social Mathematics, <i>Norman Schofield</i>	233

EPILOGUE

SCHEMATIC SYNTHESIS

By Way of Summary: A Schematic Synthesis of the Discussion, <i>David Braybrooke</i>	251
--	-----

APPENDICES

1	Proofs Relating to Chapter 11, <i>Lewis A. Kornhauser</i>	261
2	Deliberation and Rational Choice (Nicholas Baigent) and Comment (Lewis A. Kornhauser)	269
	<i>About the Book</i>	287
	<i>Index</i>	289

Preface

Rules have never ceased to be a subject of interest in social science and philosophy. Lately, however, they have been getting especially vigorous attention in several quarters: For example, among political scientists James March and Johannes Olsen are leading the way in the “new institutionalism,” which treats the state and other institutions as systems of rules.¹ Among historians some (like Christopher Lloyd) are calling for more attention to structures of rules as conceived by anthropologists like Clifford Geertz.² Though not committed to Geertz’s perspective, the economic historian Douglass North has for some time been focusing upon social rules and changes in rules.³ Along with their emphasis on rules, March and Olsen have, furthermore, proposed a distinction between “the logic of consequentiality,” under which rational choice theory in its many forms falls, and “the logic of appropriateness,” where people argue to actions from social rules.⁴ They have urged more attention to the latter.

So far, however, for these purposes little has been made of philosophical studies in the logic of rules (deontic logic), though Elinor Ostrom is making a start among political scientists.⁵ Little or nothing has been done to relate these studies, and the approach characteristic of them to defining and formulating rules, to the approaches that economists take to the study of rules, including the approach characteristic of game theory. A substantial number of philosophers have taken up game theory in studies of rules, but they have not been philosophers working in the perspective of deontic logic.⁶ Nor have they been concerned with other things that economists have found to say about rules, treating them, for example, as straightforward least cost solutions to problems about transaction costs (North) or as devices for reducing uncertainty (Ronald Heiner, Norman Schofield⁷).

This book embodies a pioneer effort to bring philosophical developments in the logic of rules, and indeed the legal (and socio-anthropological) perspective in which the logic naturally arises, into an intelligible relation with the leading ideas of economists about rules. At this stage, the relation must be more one of mutual challenge than of easy harmonization, but the prospects of benefits from mutual learning are already striking.

To appreciate these prospects, different readers will probably do best to follow different paths through the book. Readers coming from economics could begin with Part Three; some readers coming from the law could be-

gin with Part Two. Both these sets of readers might then read the Epilogue, which is the nearest thing in the book to a general synthesis, before deciding which chapters to read next. Before deciding, they might also read the running commentary to be found at the beginnings of the several chapters.

Readers coming from philosophy or anthropology or history, and some readers coming from the law, might find it most congenial to read the chapters in the order in which the chapters are presented. Even these readers might, except for the philosophers, find it best to reserve Chapters 2 and 3 for last. Reading them carefully and sympathetically is essential to getting the full benefits of the book. In topics and in sorts of questions, however, they operate (as does Chapter 1, to some extent) a disconcertingly great distance away, it seems, from the preoccupations of non-philosophers.

A convenient device for explaining the organization of the book consists in taking as a point of departure a simple distinction of three conceptions of "rules" set forth by Lewis Kornhauser in a contribution that on other grounds has been placed late in the book.

Kornhauser's three conceptions include

- (1) social rule as a regularity of behavior;
- (2) social rule as convention;
- (3) social rule as a norm (or as a special type of authoritative reason for action).

This book is preoccupied throughout almost exclusively with the second and third of these conceptions. It begins in Part One with extensive treatment of the third conception, which may be identified with the sense of "rule" at work in the perspective that the logic of rules shares with anthropology, sociology, and legal scholarship. (There is, unfortunately, no anthropologist in our present company, but there is a sociologist, and a substantial delegation of legal scholars.) The second conception is given incidental attention in Part One, and there are a number of references there to game theory and the economists' perspective on rules. However, the game-theoretical approach to convention, taken as an approach belonging, with other ways of bringing in the costs of coordination, to economists, is left to Kornhauser himself and Part Three of the book, where further ideas about rules that economists have been working with also come up. Those ideas may be connected with game theory; but to connect them with Kornhauser's third conception and the logic of rules is equally inviting.

The picture of rules given in the logic of rules is taken in Part One first from G. H. von Wright's logic of rules, with an application to a thesis from Marxist theory. Then, treated much more amply, the logic of rules developed since von Wright by a team of philosophers working at Dalhousie University becomes the vehicle of illustration. Applications of the Dalhousie

logic are drawn from the team's book *Logic on the Track of Social Change*.⁸ They include rules for appropriating the social surplus, rules demanding the use in industry of up-to-date mechanization, and rules requiring peasants to submit to their own displacement from the land and yet forbidding them to remain idle. Besides this picture of rules and many illustrations of application, including those just mentioned, the Dalhousie team has arrived in their book at a non-circular definition of rules in terms of the blocking operations first used in teaching rules. This definition is set forth in the chapter; and the chapter ends with an argument for the use in history and the social sciences of the logic. The chapter leaves the deeper aspects of the logic that require attention in logical theory to the chapter following, where Peter Schotch, the logician on the Dalhousie team, takes up a number of these aspects.

Geoffrey Sayre-McCord comes next in Part One with an argument that highlights the explanatory uses first of rules in Kornhauser's third sense and then of what Sayre-McCord calls "transconventional" rules. A number of contributions from other hands follow, with real illustrations, some contemporary, some historical, of explanatory uses, and with (in one way or another) a special concern with changes in rules, that is to say, in settled social rules. The two contributions that come first among this number come from the Dalhousie team and illustrate the Dalhousie logic, at once in characterizing rules and in treating change in them. Bryson Brown's gives the logic application in the history and philosophy of science to changes early in this century in the rules that physicists followed during the early stages of coping with difficulties in quantum theory. Braybrooke's examines an application in politics, broadly conceived, to "issue-processing," sometimes deliberated, often not. Here the conception of rules offered in the Dalhousie logic joins a conception of issues (issues about policies, taking policies to be rules) that reflects the logic of questions developed by the Pittsburgh logician Nuel D. Belnap, Jr.⁹

The contributions that follow hard upon these raise various objections and questions about the room for a logic of rules like the Dalhousie logic in accounts of historical change. Lloyd Bonfield pictures the manorial courts of medieval England as reaching their decisions with little or no concern for rules that later law would make indispensable in such matters. Were the manorial courts following any rules at all? Richard Miller welcomes the Dalhousie project, but wonders whether it embraces too many different things under the heading of social rules and wonders besides whether rules play as much part in Marxist accounts of historical change as the Dalhousie team holds. Ronald Aminzade gives a comparative account of the legitimization of political parties in France and the United States after their respective Revolutions, and gives rules and changes of rules prominence in this account. He questions, however, whether quandaries, of the

sort that the Dalhousie team specifies with its logic, play as important a part, compared with matters of interest and power, in changes of rules as the team suggests. Braybrooke brings Part One to a close by replying to the questions raised by these contributions, seeking to give them due weight, but not (he thinks) needing to concede anything essential to the Dalhousie project.

Part Two is transitional. It consists of a contribution by Charles Silver that has to do with changes of rules, and in particular with rules of law that may be conceived as Part One conceives them, but focuses less upon rules or changes in rules than on an economic analysis of the diffusion of information about such changes. In a comment on Silver's article, Kornhauser compares Silver's approach to rules with Bonfield's and points out that with its use of economic ideas, Silver is shifting away from the perspective adopted by Bonfield (and, I add, by the other contributors to Part One).

The stage is thus set for the final four contributions, coming in Part Three, which apply economic ideas not just to explaining diffusion of information about them, but to explaining the very origin of rules, their function, and what in the economists' view are the fundamental causes of changes in them. After a brief preface by Braybrooke—a larger than usual segment of the running commentary, but still brief—sketching the possibility of reconciling the economists' approach, however far carried, with the approach taken in the perspective of Part One, come contributions by Douglass North, Kornhauser again, Heiner, and Schofield.

North sets forth a general perspective on changes in social rules, in which some get treatment in economists' terms, though characteristically in terms emphasizing transaction costs rather than ideal market considerations, and some are assigned for treatment under the heading of "ideology." (Under that heading there would be a place for issue-processing in which rules are invoked, sometimes without any calculation of costs, to select less basic rules; and hence a place for matters suited to illumination by the logic of rules.) Kornhauser, Heiner, and Schofield, in the contributions that follow North's, push the question, "What difference to social phenomena does having rules make?," to successively greater theoretical depths. Kornhauser emphasizes how rules seize opportunities for game-theoretical solutions of coordination problems. Heiner shows how rules reduce the overall, long-run costs of acting on imperfect information in a succession of choice-situations; and hence produce regularities of behavior in the face of uncertainty (where conventional ideas would expect uncertainty to defeat such regularities utterly). Schofield understands rules, not just as the basis for dealing with uncertainty in one or another connection or for seizing opportunities here and there for social coordination, but as the basis of the common knowledge without which chaos would have its way instead of any social order at all, but he shows that coordination is still fragile, liable

to break down rapidly in the case of rules for collective decision if certain trains of small events get underway. This, from a deep mathematical perspective in chaos theory, is perhaps the most dramatic observation about rules to be found among the contribution. The alarm that it might awaken is mitigated to some extent, Schofield contends, if the rules crucial to collective decision are understood as rules for aggregating beliefs rather than aggregating preferences.

The final chapter of the book is an epilogue—a tentative, schematic synthesis of the discussion—offered by Braybrooke as a further device for relating the points and points of views expressed in the book to one another.

David Braybrooke

Notes

1. March and Olsen, *Rediscovering Institutions* (New York: The Free Press, 1989).
2. See Lloyd's *The Structures of History* (Oxford: Blackwell, 1993), in which pp. 103–116 hold up Geertz's work as exemplary.
3. See, for example, his *Structure and Change in Economic History* (New York: W. W. Norton & Co., 1981), and North's contribution in Part Three to the present book.
4. *Rediscovering Institutions*, pp. 160–162.
5. Ostrom, *Governing the Commons* (Cambridge: Cambridge University Press, 1990) especially pp. 51–52, 139–142 (where, joining up on these points with March and Olsen, she insists that institutions are to be treated as systems of rules and changes in them as changes in the rules); and her paper (with Sue Crawford), "A Grammar of Institutions," forthcoming. Notably, Ostrom has read and benefited from G. H. von Wright's *Norm and Action* (London: Routledge, 1963), a great resource for the analysis of rules that, having been classified as logic or philosophy, has almost entirely escaped the attention of social scientists.
6. The journal *Ethics* a few years ago devoted a whole issue (Vol. 100, No. 4 [July 1990]) to the study of rules. Game theory got a great deal of play in the issue, and a variety of insights were achieved by this means and others, but the learned gathering completely missed the boat as regards the logic of rules. There was not, for example, a single citation of von Wright's landmark work.
7. See Heiner's and Schofield's contributions to Part Three of the present book.
8. Oxford: Clarendon Press [The Clarendon Library of Logic and Philosophy], 1995. (This will be referred to as *Track* in the body of the present book.)
9. In a monograph of 1968 that was subsequently incorporated in a book by Belnap and Thomas B. Steel, Jr., *The Logic of Questions* (New Haven: Yale University Press, 1976).

Acknowledgments

Professor Judith Schafer of the Murphy Institute for Political Economy at Tulane University and Carroll S. Zehner, the secretary at the Institute at the time, worked with Richard Teichgraeber, the director of the Institute, and me to organize the conference sponsored by the Institute from which this book derives. At later stages in its gestation, Judith Fox and Margaret Odell, secretaries in the Dalhousie philosophy department, Elizabeth Harper and Cynthia Botteron, my research assistants at the University of Texas, James Endersby, the computer whiz of the Department of Government there, Joanna Lee of the computer staff of the university, Allison Sole and Cindy Rinehart of Westview Press, and Jon Brooks and Andrew Davis of Letra Libre all put in substantial amounts of time and effort to advance the project. Cynthia Botteron's effort was especially committed and invaluable. I override Peter K. Schotch's attempt at self-effacement to mention long hours of word processing on his part. Nearer the time of production, James G. March supplied useful comments, which I have responded to in the Preface. I am very grateful to all of these memorably kind and helpful people.

D.B.

Contributors

Ronald Aminzade, professor of sociology, University of Minnesota–Twin Cities.

Nicholas Baigent, director of Institute of Public Economics, University of Graz, Austria.

Lloyd Bonfield, professor of law, Tulane University.

David Braybrooke, Centennial Commission Chair in the Liberal Arts [Government and Philosophy], The University of Texas at Austin.

Bryson Brown, associate professor of philosophy, The University of Lethbridge.

Ronald A. Heiner, professor of economics, George Mason University.

Lewis A. Kornhauser, professor of law, New York University.

Richard W. Miller, professor of philosophy, Cornell University.

Douglass C. North, Henry R. Luce Professor of Law and Liberty and Distinguished University Professor (Department of Economics), Washington University at Saint Louis.

Geoffrey Sayre-McCord, professor of philosophy, The University of North Carolina at Chapel Hill.

Norman Schofield, William Taussig Professor of Political Economy and director of the Center in Political Economy, Washington University at Saint Louis.

Peter K. Schotch, professor of philosophy, Dalhousie University.

Charles Silver, W. James Kronzer Chair in Trial and Appellate Advocacy, School of Law, The University of Texas at Austin.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

PART ONE

**The Logicians' and Philosophers'
Approach to Rules**



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

1

The Representation of Rules in Logic and Their Definition

David Braybrooke

We begin with a chapter outlining work that has been done in the logic of rules. From the work done specifically by the Dalhousie team the chapter draws a new definition of rules (in the third sense distinguished by Kornhauser), which avoids the circularity of definitions currently in circulation. The definition reduces to near a vanishing point the difference between rules in the third sense and conventions, though it enables us to do justice to the intentional features of both, and also to the tendency of rules to be accompanied by systematic provisions for sanctions. The chapter ends with an argument for giving a place in the work of historians to the logic of rules. (The argument extends to giving it a place in the work of social scientists as well.)

For the time being, in this chapter and in a number of chapters following, we shall be occupied with rules in Kornhauser's third sense—rules that have authority and give reasons for acting. These may or may not be settled social rules. They may be new proposals; or old counsels of perfection, honored more often in the breach than in the observance. If they are settled social rules, however, they do imply regularities of conformity and are often accompanied by regularities of enforcement in deviant cases (even if the regularities are not perfect in either case). Paying one's taxes or refraining from incest are not settled social rules if most people most of the time do neither.

Starting up closer to the concerns that ethnographers have with settled social rules than to the concerns of economists or decision-theorists, some philosophers have asked what distinguishes rules from other social phenomena, in particular, from other phenomena that involve expressions in language. Though this will not do in the end as an accurate picture of rules, we may go some distance toward the distinction demanded—most if not all the distance to a logic of rules—by thinking of a rule as standing to its

linguistic expressions in a relation parallel to that in which a statement stands to the sentences that express it. We would thus make no more in either case of rule or statement than a device for talking about a variety of linguistic expressions and their instances. How do rules differ from statements (singular, existentially quantified, or universally quantified), value-judgments, optatives ("Would that x were the case !")?

Work on this question has been overshadowed lately by discussions of rules as solutions to game-theoretical problems of coordination, relating to rules in Kornhauser's second perspective. A recent issue of *Ethics* specially devoted to the discussion of rules (norms) is typical in having contributors preoccupied mainly by such considerations.¹ Work has also been deflected year after year by a preoccupation, inspired by Wittgenstein, with what following a rule amounts to, taken up as a problem in the philosophy of mind. How does the person following a rule know "how to go on"? How do we tell that he knows? There is perhaps some consensus on Wittgenstein's position that the problem cannot be resolved without invoking, for use in every case, public criteria for identifying any rule in question, even an idiosyncratic personal one.² But this still leaves open the questions about how rules differ from other phenomena in which language and behavior intersect.

More in keeping with the aim of answering these questions than Wittgenstein's preoccupation has been the general project of deontic logic, which consists in trying to specify the features of rules crucial to their directive aims and effects on the one hand and to making visible their logical relations on the other. The chief contributor to deontic logic—several times over, producing a variety of analyses and logical formulations—has been G. H. von Wright.³ It is remarkable that in the special issue of *Ethics* mentioned earlier there is no reference to his work. That, however, is rather evidence of the shift of fashion in the direction of game-theoretical considerations than of the work's having been superseded in the line of thought to which it contributed. There it remains the richest contribution so far.

The Logic of Rules (Deontic Logic)

von Wright's Version (in Norm and Action) of the Logic of Rules

In his book *Norm and Action*,⁴ von Wright arrives at a logic of norms through a three-tier construction on top of the propositional calculus (which concerns elementary relations between propositions taken as wholes). Each tier adds logical operators to help specify those forms of propositions which the logic of norms is especially concerned to identify among the possible substitutions available in the propositional calculus. The propositional calculus itself is so general as to accept propositions of any—i.e., wholly un-

specified—forms as substitutions for the propositional variables, p , q , r , etc.; it considers those relations of such propositions to one another that are established by proposition-combining operators standing (approximately) for “if ... then,” “and,” “or,” “if and only if.” $((p \vee q \rightarrow r \ \& \ s) \ \& \ \sim r) \rightarrow \sim(p \vee q)$, for example, is a symbolic sentence belonging to the propositional calculus; it may be read, “If, if p or q then r and s yet **not** r , then **not** either p or q .”

Consider a proposition p , which describes some state of affairs (“ N holds office”); if the state of affairs does not obtain, then, of course, $\sim p$. Let there be an operator, T , to be placed between propositional variables (or combinations of these) and to be read “changes into.” Four basic forms of propositions in the logic of change can then be envisaged: $pT\sim p$ —a world in which p changes into a world in which **not- p** ; $\sim pTp$ —a world in which **not- p** changes into a world in which p ; but also pTp and $\sim pT\sim p$, in which, significantly, no change in the ordinary sense occurs, but to which the T -operator and the logic of change are conveniently extended by deliberate convention.

The logic of change constitutes the first tier above the propositional calculus. The logic of action, in von Wright's scheme, comes in the tier next above and relates change-propositions to human intervention by introducing d and f operators that indicate, respectively, acts and forbearances. These operators may be applied to any formula of the logic of change. While $d(pT\sim p)$, for example, might symbolize in an obvious way someone's acting to remove N from office, $f(pT\sim p)$ would symbolize forbearing to do so. But $d(pTp)$ and $f(pTp)$ are also intelligible formulas; and symbolize, on the one hand, acting so as to maintain a state of affairs that would otherwise change; and, on the other hand, forbearing to do this, letting it change though it could be maintained. Thus $d(pTp)$ might stand for keeping N in office (when otherwise he would be ejected); $f(pTp)$, for letting him be ejected (though he could be kept).

Finally, in the topmost tier of the construction, von Wright reveals his logic of norms, and with it two further operators: an O -operator (best thought of as standing for “must”) and a P -operator (for permission). The O -operator, applied to d expressions of the logic of action, produces prescriptions— $Od(pT\sim p)$ “ N must be removed from office.” Applied to f expressions, the O -operator produces prohibitions— $Of(pT\sim p)$, “ N must not be removed from office.” The P -operator produces permissions, either to do something—bring about some change—or to forbear. To these permissions, as well as to the prescriptions or prohibitions formulated with the O -operator, various conditions may attach; and von Wright provides for expressing them by associating further formulas of the logic of change with the formula representing the change to be brought about or forborne. $Pd(pT\sim p/qTq \ \& \ rT\sim r)$, for example, is the formula of a permissive norm

showing two conditions: It might be taken to symbolize the rule, "It is permitted to eject N from office if he owes his office to a patron and the patron has himself left office."

However complex an O or P expression may be, it can always be substituted for a propositional variable, p or q or r, in the propositional calculus.⁵ Thus all the connections, oppositions, and inferences made available by that branch of ordinary logic are available also for formulas in the logic of norms. There are, besides, some connections and oppositions peculiar to the logic of norms. **Od(pTp)** is, for example, incompatible with **Of(pTp)** (though neither may hold, they cannot both hold together). It contradicts **Pf(pTp)**: If one must do something, then one is not permitted to forbear doing it; and vice versa. **Od(pTp)**, in fact, entails **not Pf(pTp)**; and **Pf(pTp)** entails **not Od(pTp)**.⁶

The application of von Wright's logic can be illustrated by taking up a contention of Engels's in *Socialism: Utopian & Scientific*. Engels maintains that so long as artisans owned their own tools, it made no difference whether the foundation of their claims to their products was the work that they put into making them or (then a secondary consideration) the fact that they owned the tools (the capital equipment) used in making them. But once it ceased to be the case that the people who did the work were the same people as the people who owned the tools, a conflict in rules appeared, between

$$\text{Od}(\sim r\text{Tr}/\sim w\text{Tw}),$$

under which people were enjoined to respect a right of ownership (by some specific person to some specific product) on the condition that the work of making it had been put in by the person in question, and

$$\text{Od}(\sim r\text{Tr}/\sim t\text{Tt}),$$

under which the right to same product was accorded to someone on the condition that tools belonging to him had been used in making the product. For suppose—as Engels supposes became generally the case—the person who did the work was not the same person as the person who supplied the tools. Which of the two claims was to be respected by other people? So long as those other people felt the force of both rules they were in a quandary that obstructed them from acting so as to respect fully either claim.⁷

*The Logic of Rules Emerging from the Dalhousie Project*⁸

The multi-tier picture of rules given by von Wright in *Norm and Action* remains the fullest logical characterization of rules available in the litera-

ture (von Wright's remarks on aspects of rules that he does not include in the "norm-kernels" expressed in his formulas are also rich in instruction). The philosophers in the Dalhousie project have kept the multi-tier picture in mind and intend in their own work to preserve its availability as much as the balance of considerations allows.

For example, von Wright asserts that in general we must expect to have added to basic rule-formulas a statement of the conditions under which the prescription or prohibition in question comes to bear upon the people to whom it is addressed. This point is carried forward in our logic.

We distinguish three features in our formulas for rules—**volk**, the demographic scope; **wenn**, the conditions under which the rule comes to bear upon conduct; **nono**, the routines (sequences of actions) that the rule forbids. For example, an example drawn from *Track*, under the feudal social order in France, the king and nobility enjoyed the benefit of a rule under which they appropriated the social surplus and did what they pleased with it:

volk = FRENCH

wenn = $\exists(a)(\exists x)[\text{SURPLUS}(x) \ \& \ \text{OWNS}(a, x)] \ \& \ \text{aft } r[\text{DISPOSES}(a, x)]$

nono = BLOCKS (r', r).

The **wenn** component here says that x is a part of the social surplus and somebody a owns it and disposes of it. (r stands for any routine, i.e., any action or sequence of actions.) Given this condition, which notably leaves the way in which a has disposed of x completely unspecified, the **nono** component forbids any action or sequence of actions r' that BLOCKS r , the disposal of x by a .

Another example from *Track*, which like the one just given will relate to a discussion later in this book (in the comment by Miller, below), is a technical norm consolidating advances in mechanization:

volk = WORKERS

wenn = $(\exists r)(\exists w)[(\text{TASK}(t) \ \& \ \text{WORKSHOP}(w) \ \& \ \sim\text{MECH}(t, w) \ \& \ \text{aft } r[\text{MECH}(t, w)]$

nono = $\text{aft}(r') (\exists a)[\text{HASRUN}(r, w) \ \& \ \text{PERFORMS}(a, t, w) \ \& \ \sim\text{MECH}(t, w)]$.

$\text{aft}(r)$ signifies that after a routine r has been run the proposition that follows is true. The rule in this case forbids workers to perform in a given workshop w an unmechanized task that has been mechanized there (by running an available routine for mechanizing it). It is a rule that prudent employers would adopt and enforce; if they did not, Marx for one would hold that they would be outdistanced by competitors who were more exacting about productivity.

Thus the Dalhousie logic makes of von Wright's conditions for a rule coming to bear one (the **wenn** component) of the three characteristic features that it ascribes to rules. We make the doing or forbearing component (the **nono** component in our case) more general, refraining from specifying that it must apply to actions with the form proposed for actions by von Wright. It embraces routines that may include series of actions and we do not insist on describing actions in truth-functional propositions—we allow for three values where von Wright has one, truth. An action for us is just starting or not; is running now or not running now; has already run or not. The routines to which our formulas apply may involve many different actions; and alternative routes to the same end. They may also belong to very different overall sequences; if we are forbidden to block some nobleman's disposal of his share of the social surplus, we are forbidden to do it in any way, and forbidden to do it in the course of bringing in the harvest as much as in plundering the granary afterwards.

Donald Davidson has complained that von Wright's formulas for action do not take into account the variety of ways in which somebody might get from the state of affairs in which she begins to the state of affairs in which she ends (from p to $\sim p$ in $d(pT\sim p)$).⁹ We are better prepared than von Wright to satisfy Davidson's complaints about the ambiguity of von Wright's action-propositions, though we think von Wright could do a good deal to meet those complaints by simply having the actions in question specified in greater detail, as, for example, not just going from San Francisco to New York, but going by plane; or specified by analyzing them more finely into sequences of actions. We are better prepared because our semantics brings in intermediate stages (INT) of a protracted action as well as the terminating stage (TERM). Thus, where for von Wright actions starting at A are differentiated solely in terms of what sentences they make true when they terminate, so that all actions starting at A and ending in B are (without further analysis) identical, the Dalhousie logic treats every action starting at a as characterized by two sets. One set, $TERM(r, s)$ is a set of ordered pairs associating r turn by turn with the various states in which it would be said to terminate successfully; the other set, $INT(r, s)$ is a set of ordered pairs associating r turn by turn with the sequences of intermediate states that occur on various routes on the way to termination. The actions do not always terminate; there may be no sentence B such that $TERM(r, s) = B$.

Our semantics also accommodates another complaint that Davidson makes about von Wright's logic. The set $TERM(r, s)$ in which r terminates in Mary's being kicked viciously clearly relates to the set $TERM(r, s')$ in which r terminates in Mary's being kicked. The first set is in fact a subset of the second, hence from Mary's being viciously kicked one may infer that she was kicked. Yet changing to our semantics does not mean a break with von Wright's—it is a special case of ours, in which the sets $INT(r, s)$ are

empty. We can accommodate in our routines all the forms of change that the actions and forbearances in von Wright's formulas involve; and all the actions and forbearances (which we treat as so many routines, simple or complex).

We do tighten up the logic in a way that von Wright did not anticipate, by following a fruitful lead by the Australian philosopher Hamblin¹⁰ and treating conflicts of rules as quandaries, in which all actions are ruled out. To express such situations as clearly as possible in accordance with common sense understandings of them, we furthermore reduce all rules to prohibitions (hence the doing or forbearing component comes under the heading **nono**), where von Wright gives prescriptions an equal footing. (We make of his prescriptions prohibitions of failing to provide in the routines that are done for timely inclusion of the routine prescribed.) Our motivation in focusing on quandaries is to avoid the "explosions" to which von Wright's, and other "standard" deontic logics, are subject. Once a contradiction appears in any system of rules described within a standard deontic logic, the system explodes: One can infer that every action is permitted, indeed prescribed, which is tantamount to the system's being rendered useless for more guarded inferences. Is the lesson to be that one should refuse to recognize any contradictions? But conflicts between rules are common, especially when rules change, and to refuse to bring them within the ambit of a logic is to withdraw logic from use in expressing both stable systems, when they are imperfectly consistent, and from full use, too, in tracing changes in rules through stages in which conflicts between them exist. (It means, among other things, sacrificing the possibility, long mistakenly beclouded, of making good sense of the genuine insights involved in the notion of a dialectic in history.)

Another point of difference from von Wright—in this case, not so much a difference as a supplementation—is that whereas he treats goals as internal to the logic of change (thus, if one brings about the change $pT \sim p$ deliberately, for von Wright this is done with the goal of realizing $\sim p$), we (reserving the right to treat typically what von Wright also treats as goals) treat goals as external to rules. Rules themselves, we insist, typically come into being in order to serve external goals—peace, order, and good government, for example; and among these goals, as that phrase itself suggests, may be the institution of other rules. (Thus, in Hobbes, there are rules specifying the form of contract that makes the rules of justice with their enforcement feasible.¹¹)

The Dalhousie philosophers join with von Wright in treating provisions for punishment as external considerations. In this sense, our formulas for rules are, like von Wright's, formulas for "norm-kernels," and may serve as formulas for conventions and quasi-conventions as well. Under David Lewis's leading example of a convention (one that he says used to prevail

in his hometown of Oberlin, Ohio) about resuming interrupted telephone calls, it is prescribed that the person who initiated the call make the connection again, while the other person waits.¹² This combines a prohibition imposed on the first party against doing any action or sequence of actions that precludes making the connection again in a timely way with a prohibition imposed on the second party of making the connection from her side.

The effect, with the reduction to prohibitions, of escaping contradictions of the standard sort and the associated paradoxes of material implication, is to substitute quandaries for contradictions. In quandaries, the rules accepted by the people affected combine to prohibit every action open to them, for example, the action of abolishing slavery and the action (forbearance) of respecting private property including property in slaves (where these are held to be the only means of making plantations profitable). Another example (which, again, will be discussed later by Miller) can be found in the prohibition, in force in England in the sixteenth century, against interfering with lords driving peasants off the land, conjoined with the prohibition, laid down by Parliament in the act against vagabondage:

On the one hand, there was a rule f_t ,

volk(f_t) = ENGLISH
wenn(f_t) = [LAND(x) & HASDOM(a, x) & USEOWNS(b, x) &
 $\sim$ HASDOM(b, x) & *aft*(r)[DRIVEOFF(a, b, x)]
nono(f_t) = BLOCKS(r', r),

which forbade anyone to do anything that blocked some a who with dominion over a piece of land x drove off someone b who as a peasant merely had useownership of the land.

On the other hand, there was a rule f_v ,

volk(f_v) = ENGLISH
wenn(f_v) = LANDLESS(b)
nono(f_v) = *aft*(r)[$\sim$ WORKING(b)].

which forbade b , once b had been driven from the land, from doing anything that included a routine or sequence of actions that left b wandering about the country without working. But very likely there was no work for b off the land; he and thousands like him were in a quandary, forbidden to resist being driven off the land where they had been working and forbidden at the same time to be idle.

A quandary is certainly an uncomfortable situation, crying out for some change in the rules, but it is one that is, logically, perfectly in order. The going set of rules continues (by paraconsistent implication) to sustain noth-

ing but reasonable inferences, even inferences from the rules directly in conflict. Partitioning the going set into subsets each of which by itself makes at least one action available that can be done without violating the rules in the subset has the effect here that in the propositional case comes from partitioning an inconsistent set of propositions into subsets each of which by itself is consistent.

The Definition of Rules

Rules could be defined simply as whatever is expressed by the formulas of a logic of rules, like the formulas that we have inspected, either von Wright's formulas or those of the Dalhousie logic. This would at least be in one respect an advance over the most common definitions, which are circular—as “normative constraints”¹³—or seem to leave the root-idea unexpressed—as systems of imperatives (which prescribe or prohibit, too).¹⁴

It is, however, quite unsatisfactory to treat rules as linguistic entities. The forms of words in which they are expressed can hardly by themselves be supposed to compel obedience, or indeed to influence conduct in any way: We can read in Empedocles, “Keep your hands off beans!,”¹⁵ understand the words as conveying a rule (he is not using the same form of words to express a one-occasion imperative). Yet we may be moved not in the least to heed the words. If we move back from the expressions of rules to what in analogy with propositions they express, we have done no more to capture the action-compelling or action-guiding aspects of rules. We understand that one and the same rule can be expressed in English by “Keep your hands off beans!,” in French by “*Ne pas laisser les mains toucher de fèves*,” in Greek by “*kuamown apo cheiras*,” and not be moved by contemplating the shared meaning of these locutions.

What we need for a satisfactory definition is a definition that exhibits the place of rules in ordinary life and practice. Work on the Dalhousie project has led to just such a definition. We have found, in the course of formulating rules in one illustrative connection after another, that the notion of blocking was steadily playing an indispensable part in the ideas that we were working out of what the rules amounted to. This notion, in turn, has led us to an especially satisfactory definition of rules.

Rules, we say, are in origin physical blocking operations that prevent people from acting in ways prohibited; or, better, systems of such blocking operations, since unlike the imperatives issued for a moment, rules apply over and over again to many instances. Consider a child being blocked (by a successful blocking operation) from going into the street and from this blocking learning the rule against going there. When she comes to understand that she may expect to be blocked every time she tries, she understands the rule that she faces. In time, it will suffice for her mother to say,

"Don't go into the street!," as she sidles in that direction; and this form of words serves as a verbal substitute for a physical blocking operation, just as the mother's speaking those words substitutes for her using a physical means in the blocking operation. She performs a blocking operation, whether successful or not, in either case. Thus, in general, we can define rules as systems open-ended in time of blocking operations with means physical or verbal; and license under this definition speaking of physical imperatives as well as verbal ones.

The blocking operations here, even the physical ones, are not instances of punishment; and both sorts, physical and verbal, may actually occur very rarely, and only at the beginning of any person's rule-learning history. Their rarity, perhaps even more their transience, have no doubt contributed strongly to overlooking their importance for the definition of rules. They are rare not only because people internalize rules, so that rules learned from blockings physical or verbal are maintained without any need to repeat the blockings, since with internalization blocking operations are anticipated and forestalled. They are rare because, beginning early in childhood, people learn most rules by simply hearing them set forth; or even simply by observing examples of their application (as when a parent says "stju" rather than "stu" when stew appears on the table).

Yet the force of rules depends on the blocking operations that impend (or could be brought to bear). Rules are not linguistic entities, important as their linguistic expression is to identifying them in most cases and to understanding exactly what they involve. They are binding practices that involve people in structures of motivation for themselves and others and structures of social control. Nor (as I long thought myself, and as others in the Dalhousie project inclined to think until very late—later than the Murphy Institute conference) are rules distinguished from conventions and the like by having measures of punishment attached to them. The physical actions that figure, in elementary cases, as blocking operations may sometimes be actions of the same sort that are imposed as punishments; but they are not punishments when they serve as blockings—they are corrections, and as such belong alongside physical interventions of gentler, even caressing kinds, as well as verbal utterances that range from explicit imperatives to gentle hints. The mother may kiss and cuddle the child as she picks her up and takes her away from the street.

Conventions may originate as mutually advantageous solutions to co-ordination problems: in David Lewis's example, as a solution to the problem of who, the original caller or the original recipient, will start up a telephone call again after the connection has been broken. As such, they need not be taught by blockings or maintained either by blockings or by punishments. People may go on abiding by them, just as they started them up, simply from being aware of the mutual advantages. Yet, just as, once people

have learned some rules, they can learn most others (along with settled conventions) simply by having them stated, so conventions, once established, can in some cases be taught by blockings, and as with rules there may be no occasion to go on to back them with sanctions. These observations reduce the distinction between rules and conventions to the vanishing point, even if one makes their being game-theoretical solutions a defining feature of conventions. Or rather they reduce the distinction to accepting conventions as falling into a subclass of rules all of which are in fact solutions to coordination problems, though some may not have originated because they were identified as such. (They may have been laid down by authorities with other things in mind.) Outside this subclass, there will be rules (maybe perverse ones) that do not constitute solutions to coordination problems and do not minimize costs.

There will be no need to go into this definition of rules in subsequent chapters. Yet it can be assumed throughout, and it can be usefully recalled whenever questions arise about how rules can have force as reasons or causes in human activity. It will even relate usefully to discussions in which regularities short of being rules are in question rather than rules proper. A child will learn what rules are by learning from others social rules. But a child who has perhaps not yet learned any rules may exhibit a regularity of avoiding touching stove tops after he has once been burned by touching one. He will come to the stage of making rules for himself only after he has advanced some distance in learning social rules and learning what rules are in the course of doing so.

A Place in the Work of Historians for the Logic of Rules

The definition of rules given makes it plain that there is more to rules—in their workings upon people—than there is to mere forms of words. Thus the definition helps forestall any inclination to believe that rules must be (as mere words) superficial phenomena. There are important questions about society and history still to be asked when rules have been identified. Some of those questions are questions about rules—where did they come from? who supports them and why? who benefits from general adherence to them? Rules may show up again, sometimes, in the answers to some of these questions; for example, some rules are inferred from others and get their support because people support those other rules.

Rules are not the whole story: power and interest (including class-interest) have to be considered. Some social scientists, and some historians, may be so much more interested in questions about power and interest that they hesitate to give the study of rules its due. I expect social scientists, however, will be easier to persuade than historians both that rules have some interest and importance and that a logic of rules is an aid to studying

them. There has, after all, been resistance among historians to using any of the special techniques developed in the social sciences¹⁶ (though they are used), while social scientists are used to having new techniques start up and used to trying them. We may expect there to be resistance among historians to the use of logic, too, especially since in this case its use—the use of a logic of rules—has not been established in the social sciences either. Indeed, our expectations are easily confirmed. They were confirmed by the reactions expressed at the conference from which this book originated by an historian who took part.¹⁷ I shall, apologizing for the fact that he will have no opportunity for a rejoinder, take up one by one the concerns that he expressed.

We would ask, given the variety and ubiquity of rules, which we may expect historians not to deny, whether historians are already clear enough about them to have nothing substantial to learn from a logic of rules? They may nevertheless say they fail to see that translating the rules cited by historians makes any advance in clarification upon what Marx (in the examples given above) or other historians have done in expressing them in a natural language, German or English. Not only historians react in this way; as we have carried on the Dalhousie project from stage to stage we have encountered philosophers who (perhaps not distinguishing sufficiently between the importance of having a logic and the importance of having a convenient notation for the logic) react on first sight by claiming that everything that needs to be done in treating rules can be done in English without any explicit recourse to a logic. Yet these reactions misinterpret the care that we have taken—notably, in the initial applications of the logic set forth in *Track*—to demonstrate that the rules for which we have developed the logic are rules of sorts that historians are concerned with. To comment that we seem to be only saying the same things but expressing the rules in different terms or a different notation is not an objection but a measure of our success in the demonstration that we intend. It is true that—once we have got historians to acknowledge that we are talking about rules as they themselves already understand them—we have further claims to make for the logic. The first reactions fail to appreciate in this regard that those claims begin by citing only very modest possible advances on what historians are already doing, which we acknowledge that they could do, certainly without our notation and perhaps without any explicit attention to our logic or any other. They also fail (we think) to give due weight to the point that advances may be modest and nonetheless worth making.

Moreover, as a hypothesis in the psychology of scholarship, is it not probable that historians will actually make those advances in precision only if they make use of a logic of rules, even of a notation that continually reminds them of the components to look for? The use of a logic of rules is likely to alert investigators to logical issues that might otherwise go unno-

ticed and likely also to sharpen their appreciation of the variety of logical distinctions that issues call for once identified. This modest hypothesis falls well short of claiming (as we have been mistaken to claim) that by applying the logic of norms to historical evidence scholars may experience a kind of “gestalt shift” wherein new patterns suddenly come into focus. I expect that the term “gestalt shift” reflects Thomas Kuhn’s discussions of changes in scientific paradigms.¹⁸ We do not want to disavow the possibility of gestalt shifts, from paradigm to paradigm, or within paradigms; but the idea that we are introducing a new paradigm for historical thinking lies outside our most ambitious aims. We are not so presumptuous. In any case, the hypothesis expresses only our claims at the beginning level of modest advances; and clearly falls far short of gestalt shifts, even within paradigms.

Some examples bearing out the hypothesis can be found in the discussion in *Track* of the abolition of the British slave trade and in the discussion also in *Track* of the rise of clinical medicine. Porter, one of the historians on whose account of the abolition of the slave trade we rely, omits to ask what happened to the rule of respecting the private property of the West Indian planters, which stood in the way of abolishing the trade in the 1790s (because cutting off their supply of fresh slaves would so far reduce their labor forces as to make their plantations unprofitable)?¹⁹ Was the rule still in force when the slave trade was abolished in 1807? If it was not, how was it that the more general rule about respecting private property had ceased to give it force? It does not seem likely that the possibility of applying the general rule in this connection had simply been forgotten. Foucault, in his account of the rise of clinical medicine, identifies a rule forbidding giving diagnoses that did not relate external symptoms to internal pathologies correlated with them. However, he omits to consider that this rule, characteristic as it may be of clinical medicine once this has fully developed, could not be followed at the beginning of the development. He has thus failed to see precisely part of what has to be brought in (perhaps some rule under which the development could begin, which would also guide the development from stage to stage) to explain how clinical medicine came about.²⁰

Here we are already advancing—modestly—beyond the modest claims of the hypothesis set forth above. Attention to rules, with the logic of rules, has brought to light an aspect of the history of clinical medicine that even its most brilliant investigator, emphatic as he was here as elsewhere about the importance of identifying social rules, had not come upon. We claim in *Track* to make further advances. We identify quandaries; and track social changes through the resolutions of the quandaries. We have found our illustrations in cases in which the resolutions came about by deliberations that cannot be made intelligible without identifying the rules at issue and

their implications, including the implications that set some of the rules at odds with each other. But (as I shall claim, with some beginnings of illustrations, in a chapter below) the assistance that the logic of rules gives to tracing changes in rules (and social change in that sense) is not confined to deliberated change.

Historians may also be worried, we have found, that inherent in the logic of rules is some potential for “reifying” them. This is even farther from being anything that we claim. We do hope that the logic will lead to at least modest advances in historians’ making more of rules than they have done, holding the rules that they identify longer in view as distinct objects of attention. Does this mean reifying them? It may give an exaggerated impression of the extent to which a rule holds in a given society to formulate it exactly and then suppose that it holds exactly for every subgroup and every member. But this impression can be checked, by consciously treating the rule as a sort of idealization familiar from accounts of language. (It is not everywhere in English the rule that the third-person negative form used for the verb “do” is “doesn’t.”) For some purposes, e.g., constructing a perspicuous, simplified model of the rules in a given society (for example, the rules of their kinship system), such an idealization is useful. It is useful, among other ways, as a benchmark for charting the variations on the rule found in different subgroups and with different persons.

One need not suppose that rules can be detached from the behavior that is evidence for them—the behavior of human beings doing things or avoiding things that we would expect them to do or avoid if they had invented and held to the rules in question. (I am using “invent” here to cover processes of arriving at rules that are not deliberative and may issue in rules that the people who abide by them are not aware of.)

Our hypothesis does not exclude—nor should it exclude—the possibility that some rules may persist while the people who invent them disappear, so long as in disappearing they give way to other people who in their own time accept the rules. All along—consistently with the existence of the rules, so long as deviation is subject to punishment—in a minority of cases (or maybe for less important rules, even in a majority) people, people of the first instance, maybe newcomers, people of the second instance, may choose to defy those same rules; and if defiance rather than conformity becomes paramount, the rules will disappear. Nothing in our conception of the logic of rules gainsays these points, or implies more in metaphysics than is needed to hold them.

Does ascribing causal efficacy to rules fail to take into account their dependence on the invention and support of the people who have adopted them as rules? This question may reflect a further ingredient in misgivings about reification. One might be led to imagine the rules, though arising from human invention, operating regardless of human efforts to shake loose from them. But causal efficacy does not imply anything so bizarre. The