Chapter 1

AN INVITATION TO LANGUAGE AND GAMES

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1 INTRODUCTION

Language—a Game? That language may be compared to games, and hence to strategic and rational interactions, is an ancient idea. As a metaphysical thought, the opposition of chōra and kosmos in Plato’s philosophy is the contest and play between the distracted and the ordered, the changing and the permanent. As a metaphor for argumentation, Aristotle’s Topics and its later incarnations, such as the scholastic Ars Obligatoria, are set up as dialogical duels.

The last century was marked by a linguistic turn in philosophy. Those seeking to understand the expression of natural language sometimes chose to focus on games. Ferdinand de Saussure (1857–1913), a pioneer of structural linguistics, considered chess the man-made counterpart of the natural processes of language in Course in General Linguistics (1916), in which he compared language and chess. They both involve dynamics, their rules are conventional, and their strategies positional, Saussure argued. The difference lies in deliberation: while in chess the player intends various moves, in language moves are spontaneous and fortuitous. Saussure’s comparison does not hold water: if we interpret the difference as that between what is strategic and what is non-strategic, the difference that Saussure ended up advocating erases practically all he wanted to see as chess-like in language.

Earlier, Charles Peirce (1839–1914) had expressed a much better thought-out allegory in which thought is mediated by expression, just as pawns and knights mediate the purposes and intentions of those playing the game of chess:

Thinking always proceeds in the form of a dialogue—a dialogue between different phases of the ego—so that, being dialogical, it is essentially composed of signs, as its Matter, in the sense in which a game of chess has the chessmen for its matter. (Peirce 1967, MS 298, 1905, Phaneroscopy)

Peirce remarked that it was “a sop to Cerberus” to explain the meaning of signs in terms of strategic dialogues that refer to actual persons uttering and interpreting those signs. Indeed, the

1See Chapter “The semantics/pragmatics distinction from the game-theoretic point of view” in this volume.
concept of strategy integral to game theories of rational decision was not available to him. In place of strategy, Peirce used the notion of a *habit of acting* in certain ways in certain kinds of circumstances.

The game metaphor has retained its strength in linguistics and philosophy alongside logic, contemporary mathematics and theories of computation (Pietarinen 2003, 2007a,b). But is the notion of a game worthy of serious linguistic theorising? What is its relevance? What has game theory brought to the table of theoretical linguists and philosophers of language?

## 2 Taking Games Seriously

Game theory, as a theory of strategic interaction, has arisen as a noteworthy tool for linguistic analysis, and has been used to expose the multiplicity of issues to do with linguistic meaning, its origins, and its change.

### The Emergence of Game Theory

The first mathematical result concerning games was suggested by Zermelo (1913) of certain finite, strictly competitive two-player games of perfect information, such as chess. He showed that a player can only avoid losing for a finite number of moves (if the opponent plays correctly), if and only if the opponent is able to force a win. The modern version of the theorem states that every such game is determined: either player 1 or player 2 has a winning strategy.

The notion of strategy was formalised during the 1920s by Emil Borel, John von Neumann, László Kalmár and Dénes König. The theory of games was established in John von Neumann and Oskar Morgenstern’s 1944 *Locus Classicus*, *The Theory of Games and Economic Behavior*.

By the late 1930s, the relevance of game theory to other fields of science, and to economics in particular, was not yet fully acknowledged. John von Neumann, in a letter to Abraham Flexner (25 May 1934), confessed: “I have the impression that [economics] is not yet ripe… not yet fully understood. . . to be reduced to a small number of fundamental postulates—like geometry or physics” (quoted in Leonard 1995, p. 730). The influence of game theory grew slowly, and happened, to a considerable degree, via Morgenstern’s attention, the co-author of *The Theory of Games*, though a full axiomatisation was never reached.

In lieu of axiomatisation, manifold applications of game theory have proved its scientific worth. “By their fruits ye shall know them,” pronounced both Charles Peirce and David Hilbert in their independent and contemporaneous discoveries in logic and mathematics around the turn of the century, frequently applying the game metaphor to a variety of tasks. Economics, statistics, logic, mathematics, the social and political sciences, ethics, physics and biology have later all resorted to game theory in clarifying some of their most difficult and fundamental theoretical constructions.

Our focus in this book is on linguistics and the philosophy of language. Games are models of human actions, and language, speech and communication exemplify those actions. But we must distinguish two levels: games as a theoretical framework for studying the nature and the origins of linguistic meaning and games as models of large classes of rational human behaviour in actual communicative situations. Predominantly, this book is concerned with games in their former role, and it was this role that Wittgenstein, one of the first philosophers to systematically argue for the usefulness of games in the philosophy of language, thought underlies linguistic meaning. His insights later resurfaced in theories such as evolutionary and semantic games.