

# Chapter I

## Introducing Conversation Design

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### ABSTRACT

*This chapter introduces theoretical and historical groundwork for understanding conversation design as an emerging field of research and practice. Over the last 40 years, a growing multidisciplinary body of work has focused on conversation and design in a broad range of contexts. This chapter provides a selective overview of this diverse body of work within its various specialty areas. A skeletal description of the historical background, theoretical roots, and main approaches is offered to help situate the reader within this emerging field. The chapter concludes with a look at practical applications in conversation design for the 21<sup>st</sup> century.*

### INTRODUCTION

Conversation is central in human interaction. In the most general sense, *conversation* is “an informal spoken exchange of news and ideas between two or more people” (*Oxford Dictionary*, p. 310). Conversation allows us to share information, express opinions, create and support social relationships, and persuade others. In workplace settings, conversation is used by employees to make plans, exchange ideas, make decisions, and evaluate products. In school settings, instructor-student and student-student conversations

advance learning through perspective sharing, exposure to new information, and stimulating creative activity. In terms of function, conversation works in two ways. First, we are influenced by what others say as with memory and others influencing our thought processes. Second, conversation provides with a set of resources for interpreting and influencing what others say and do (Silverman, 1998). This section introduces key terms required to understand conversation design, including: conversation, conversational processes, conversation theory, and conversation design. The goal for this section is to provide the reader with

basic concepts that reappear later in this chapter and in other chapters in this volume.

## Conversations and Conversational Processes

*Conversation* within the context of education and instruction typically involves an exchange of ideas and mental processes between speakers and listeners (henceforth referred to as conversational agents). These conversational agents can be human or artificial. Conversation is not to be confused with communication, which is a much broader term describing the transmission of information from one entity to another, including communication in plants and animals. Conversation is more specific in focus and intent. Conversation is also to be distinguished from interaction, which describes any action or joint activity involving two or more entities. Conversation is concerned with actions and activities that manifest themselves within speech and other symbolic representations exchanged by human or artificial agents. In the context of conversational design for instruction, educational conversations are the main focus.

What are *conversational processes*? Why are conversational processes important? How do conversational processes operate and where can be found? How should we implement conversational processes to advance learning and instruction? A preliminary definition is posited as follows:

*Conversational processes* are continuing processes that can contain social, cognitive, and emotive information representing (guiding/affecting/influencing) what agents do and feel in specific situations. Agents and processes may occur within an individual, between individuals, between an individual and artificial entities, and between artificial entities.

*Conversational processes* provide the basis for a wide range of activities, such as:

- **Personal reflection:** Conversational processes involve the juxtaposition of multiple internal perspectives on some topic.
- **Instructional tutorials:** Conversational processes involve agents taking turns to reach mutual understanding of specific subject matter material. Tutorials may involve two or more agents. In programmed instruction, one or more of the agents is artificial.
- **A first date:** Conversation processes involve agents exchanging personal information about themselves and follow normative rules of politeness in doing so.
- **A soccer game:** Conversational processes require that agents perform actions, follow game rules, and show emotion with team member successes and failures.
- **Religious and moral communities:** Conversational processes require that agents attend to violations of religious or moral rules, including the enforcement of disciplinary measures in cases of nonconformity to rules upheld by the community.

The mentioned examples are reflective of the widespread application of conversational processes within a diversity of social contexts with varying goals and procedures.

## Conversation Theory

Conversation theories can generally be described as sets of assumptions and guiding principles focused on the study of human and machine conversations. Although many conversational theories exist, Gordon Pask's *conversation theory* is perhaps the best known. It is concerned with the general necessary conditions of cognition by addressing what a system requires for learning to be possible at all. Pask's theory is generalized to the study of artificial intelligence as well as

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