CHAPTER 1

INTRODUCTION

1.1 Chapter Overview

This chapter provides a brief introduction to the notion of disfluencies in spontaneous speech, particularly in relation to the process of language production. It also outlines the aims of the study, its significance, and the scope and limitations of the study.

1.2 Disfluencies in Spontaneous Speech

Normal spontaneous speech displays many kinds of "phenomena which constitute breaks in fluency" (Lickley, 1994, p. 8). This is because ideas are being conceptualized and formulated into speech while people are speaking and because of this, "conversation is characterized by frequent pauses, hesitation sounds, false starts, misarticulations and corrections" (Boomer & Laver, 1968, p. 121). In fact, as Eklund (2003, p.3) points out, "... very few of us speak completely fluently without changing our minds, with constantly perfectly eloquent wordings, and without any hesitation or slips...". This can be illustrated by the following utterance from the data in this study, where the speaker interrupts his speech after *they*, pauses for 251msec, and then continues his utterance by repeating *whatever* and substituting *they* with *you*.

> C52
> whatever [they] :251 <u>whatever you</u>

(Note: ':' represents a silent pause, and the number after it represents the time paused in milliseconds; '[ ]' indicates the error; the underlined section is the repair. A more detailed description of the transcription conventions is given in Chapter 4)

Studies in the area of speech disfluencies, that is, "phenomena that interrupt the flow of speech and do not add propositional content to an utterance" (Foxtree, 1995, p.709), have shown that speech problems can occur at various linguistic levels: segmental, prosodic, morphological, lexical and even phrasal levels (Cutler, 1980; Fay, 1980; MacKay, 1970: Nooteboom, 1969, 1980; Shattuck-Hufnagel & Klatt, 1980). Problems encountered during the speech production process could result in, among others, insertions, deletions, repetitions and substitutions of sounds and words (Lickley, 1998).

All the different phenomena that cause breaks in fluency can be put under the umbrella term of *speech disfluencies,* although as Eklund (2003) points out, many other different terms have been used to describe these phenomena, depending on the motivation of a particular piece of research. Among the terms used are *discontinuity, hesitation, non-fluency, self-editing, self-correction* and *self-repair* (Eklund, 2003, p.3). However, it should be made clear from the onset that different forms of hesitation and speech problems are not necessarily a reflection of how inarticulate a speaker is. Nor is it necessarily an indication of pathological disorders like stuttering or phonological disorders and dysarthria (Dalton & Hardcastle, 1989). Instead, they also commonly occur as part of the natural process of speech production. In fact, as Hieke (1981, p. 50) puts it, "pauses and the other hesitations can actually be considered wellformedness phenomena rather than disfluencies, at least as far as they serve as devices by the speaker to produce more error-free, high-quality speech".

Accordingly, the underlying notion is that non-pathological speech disfluencies occur as speakers plan and produce their utterances and thus, much of the recent research on disfluencies is motivated not so much by the types and rates of disfluencies that occur in

2

speech, but by how such disfluencies provide clues about the cognitive processes related to speech production (Dell, 1986; Hartsuiker & Kolk, 2001; Laver, 1980; Levelt, 1983 & 1989; MacKay, 1987, 1992; van Wijk & Kempen 1987). The examination of speech errors, for example, can provide information about the order in which speech is assembled, for instance, whether lexical items are accessed prior to being grammatically encoded or whether several processes take place simultaneously (see Chapter 2). Speech errors can also provide information about what the individual levels in the speech production process are, and how each of them seem to function. All this information can be derived, according to Garman (1990, p. 151), because "... the symptomatology of errors can ... carry information on *where* in the system the breakdown has occurred, and *how*, in the sense of the possible mechanism involved" (author's emphasis). Due to this, Scovel (2001, p. 34) explains that, "there has been a long and rich tradition of examining speech errors in psycholinguistics as a window to the [speech] formulation process...".

Based on the assumption that speakers monitor, detect and correct their speech errors (Boomer & Laver, 1968; Nooteboom, 1980), research has also focused on the ways in which speakers monitor for speech errors, detect them and proceed to correct these errors, although the exact nature of how these processes work is still a matter for further research and discussion (Postma, 2000).

1.3 The Relationship Between Self-Monitoring, Error Detection and Self-Repair

According to Lickley (2001, p. 93), "the two major functions of disfluency are hesitation and self-repair". This means that disfluencies are used as pausing devices as

well as to repair one's own speech. The use of disfluencies to repair speech is also proposed by Postma, Kolk and Povel (1990, p. 28) who feel that "disfluencies result from corrective actions to anticipated speech errors". In other words, speech disfluencies are a reflection of ongoing cognitive activity, where speech is monitored during the process of speech production, and when an error is detected, speakers often hesitate, before proceeding to take some corrective action, although errors may remain uncorrected as well. A simplified diagram of the process of self-monitoring, which may result in error-detection leading to the possibility of speech being interrupted, hesitation produced and a repair effectuated, is shown in Figure 1.1.

Problem detected ⟶ *(Speech interrupted)* ⟶ *(Hesitation)* ⟶ *(Self-Repair produced)*
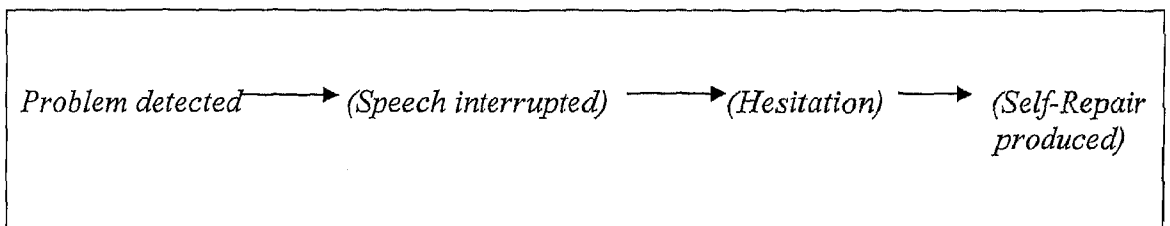
Note: The items in parenthesis are optional

Figure 1.1

The Process of Error-detection, Hesitation and Self-Repair

The fact that speakers often stop and correct what they are saying suggests that there is a monitoring mechanism in the process of speech production (Laver 1969, 1980; Levelt, 1983, 1989; Postma 2000; Sellen & Norman, 1992; van Wijk & Kempen, 1987). As Levelt (1989, p. 460) puts it, speakers "can attend to various aspects of the action that they are performing". Through this process of self-monitoring their speech, speakers can detect errors, and proceed to repair them. This leads to self-repairs, which can be regarded as "the correction of errors without external prompting, frequently within a short span of time from the moment of error occurrence" (Postma, 2000, p. 98).

1.4 Motivation

This study is mainly motivated by the fact that speech disfluencies can provide an insight into the underlying processes of speech production. Using speech errors and self-repair data, various theories have been formulated to explain the mechanisms of speech production, such as the order in which speech is put together beginning with the conceptualization of an idea to its verbal realization. Such data have also been used to examine the various sub-processes of speech production such as lexical access; grammatical, morphological, and phonological encoding; and the self-monitoring and self-repair of speech.

However, there is still a need to continue looking at such data especially in relation to theories pertaining to self-monitoring and self-repair. Further research is needed to provide empirical evidence about whether speakers are monitoring and repairing their speech before or after the articulation of an error. Similarly, the use of different types of hesitation and self-repair also needs to be re-examined to see how they fit into the structure of self-repairs, especially as the current literature does not adequately account for these (see Chapter 2).

In relation to these issues, this study is motivated by the need to examine disfluencies in naturally occurring speech, as opposed to experimentally induced speech, in order to gain a better understanding of the process of self-monitoring and self-repair in speech production. It is felt that a study on naturally occurring disfluencies will be able to provide more insights into the patterns of disfluencies and the processes of self-

monitoring and self-repair that occur in spontaneous speech, thus, contributing further to the current theoretical understanding of the cognitive processes of speech production.

1.5   Objectives

Driven by the need to gain a better understanding of the types of disfluencies that speakers produce and the monitoring and repair mechanisms used in the production of speech, the general aim of this study is to examine normal spontaneous speech in order to find out about the

- patterns of disfluencies present in spontaneous speech

- psycholinguistic process of self-monitoring and self-repair in spontaneous speech.

Within this context, the study aims to answer the following research questions:

1.   What are the patterns of disfluencies in the data in terms of the types of

    (a)   hesitation devices speakers use?

    (b)   self-repairs speakers make?

2.   What do the following time intervals reveal about the processes of self-monitoring and self-repair in the spontaneous production of speech?

    (a)   From the onset of an error to the point that speakers interrupt themselves (error-to-cut off).

    (b)   From the point of interruption to the onset of the repair (cut off-to-repair).

    (c)   From the onset of an error to the onset of the repair (error-to-repair).

These questions have been addressed at different levels in other studies (see Chapter 2). However, instead of looking at the different aspects of disfluencies individually, the present study aims to draw together these aspects, namely the different pausing devices, types of self-repair and the time intervals involved, and to examine them within the context of self-monitoring in speech production. This is with a view to proposing an improved taxonomy of disfluencies and to develop a better understanding of the processes of error-detection and self-repair in speech production.

In order to answer these two research questions, forms of hesitations and self-repairs in the data were identified and analyzed (see Chapter 4, 5 and 6). The time intervals mentioned above were measured and analyzed in order to obtain insights into the self-monitoring process of speech production (see Chapter 4 and 7).

1.6   Justification and Significance of Study

As mentioned previously, an investigation into the area of disfluencies in spontaneous speech is relevant because not only will it highlight patterns of disfluencies present in naturally occurring spontaneous speech, but more importantly, it will also provide a better understanding of the underlying cognitive processes involved in the production of spontaneous speech. In particular, a thorough examination of the types of disfluencies that occur in speech within the context of self-monitoring and self-repair (see Chapter 2, 5 and 6) and the study of the intervals involved in disfluent utterances (from error to cut off to repair) will contribute empirical data to support or discount current theories of self-monitoring in speech (see Chapter 3 and 7).

1.7   Scope and Limitations of the Study

Similar to Shriberg (1994), this study proposes to examine disfluencies in the speech of the subjects as they occur in one speaking turn. Further, following Faerch & Kasper (1982) and Schegloff, Jefferson and Sacks (1977), only self-initiated repairs that occur within the same utterance within the same speaking turn will be considered (see Chapter 4). The types of disfluencies which are examined are discussed in Chapter 2 and Chapter 4.

This study, however, will not take into account any pathological speech disorders. Nor will it involve looking specifically at language errors from a grammatical or language learning point of view. Thus in this study, the term *errors* is seen in relation to the type of *repair* made by speakers (see Chapter 2). Hesitations and self-repairs are examined purely within the context of the cognitive process of speech production, discounting other areas such as Conversation and Discourse Analysis and Pragmatics. This study is also confined to the analysis of speech disfluencies found in the speech of 67 people calling in to talk on a local radio station.

1.8   Overview of the Thesis

This chapter provided a brief introduction to the area of speech disfluencies and its relationship to the process of speech production. An outline of the motivation, objectives, significance and scope of the study was also given. Chapter 2 examines the types of hesitation and self-repairs found in the literature, and also looks at how they fit within the framework of disfluencies. Chapter 3 discusses several competing models of speech production, with a particular focus on Levelt's (1983, 1989) Perceptual Loop

Theory. Chapter 4 describes the methodology used to obtain, transcribe, code and analyze the data. Chapters 5, 6 and 7 present and discuss the results of the study in relation to the research questions, while Chapter 8 summarizes and reviews the findings the study.