Silence in Online Education: The Invisible Component

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Abstract
Silence is an important factor in traditional education. It is highly subjective, and context dependent. The role of silence in online education has not yet been evaluated in depth. This paper presents three studies which lay the foundation for such an evaluation by: suggesting an empirically based, operational definition of online silence; by showing that the definition is reflected in the cognition of typical users of online communication; by exploring reasons and explanations for online silence; and, by exploring the consequences of online silence. Long pauses and silences are suggested to be an integral part of online education, and suggestions for the more effective management of pauses and silences in online classrooms are discussed.

Keywords: online learning, online silence, nonverbal communication, online chronemics.

Introduction
Silence in the traditional classroom is a complex cultural and pedagogical issue (Benfield, 2000; Jenkins, 2000; Zembylas & Michaelides, 2004). The challenge of silence is not limited only to traditional classrooms, and online teachers too often run into issues of non-participation and unresponsiveness of the online students (Beaudoin, 2002; Benfield, 2000; Jones, 1999; Zembylas & Vrasidas, 2007). On the other hand, the ability students have to take their time before responding is one of the key advantages of the discussion-based asynchronous teaching methodology (Bender, 2003). The moderators of an online classroom face a chronemic challenge: how should they, on the one hand, allow the online students to enjoy the flexible synchronicity of the medium, while still maintaining a lively conversation which is not punctuated by lengthy silences that kill the discussion (Hewitt, 2005). Some attempts to identify rules for such forums clearly point to the importance of quick responses (e.g. Liu & Ginther, 2002; Walther & Bunz, 2005), but the question is how quick is quick enough, and what length of pause would already constitute the online equivalent of an awkward silence in the classroom, a silence which is not conducive to learning? This paper summarizes the results of three studies which explore the nature of online silence, propose and validate a definition of online silence, and investigate the causes and consequences of online silence. It then presents a model of online responsiveness and silence, and discusses the applications of this model to online education.

Due to space restrictions, the three studies are presented in summary only, and are followed by an integrative discussion.

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Study 1

The first study (Kalman, Ravid, Raban, & Rafaeli, 2006) examines response latencies in asynchronous CMC by analyzing three datasets comprising a total of more than 170,000 responses: e-mail responses created by corporate employees, responses created by university students in course discussion groups, and responses to questions posted in a public, commercial online information market. This study attempts to reach a deeper understanding of online silence through the examination of very long response latencies. This study allows the delineation of three zones that quantitatively define norms of responsiveness in text-based CMC, based on the average response latency, τ (tau). The violation of these norms is suggested to be an expression of online silence. Conceptualizing online silence as the violation of online responsiveness norms allows us to propose a context sensitive quantitative definition of online silence: "no response after a period of ten times the average response latency (τ)".

Study 2

The second study is based on the responsiveness norms identified in the first study, and explores the consequences of violations of these norms in the context of organizational e-mail communication. The study applies the Expectancy Violations Theory (Burgoon, Newton, Walther, & Baesler, 1989), which was developed for understanding the results of violating normative expectations in nonverbal communication. The results clearly show that under the experimental circumstances normative response latencies are more expected, and result in more positive evaluations than non-normative responses such as online silence. This study validates the norms identified in the first study, and validates the importance of response latency as a nonverbal cue in text-based computer mediated communication.

Study 3

The third study is based on a survey in which knowledge workers in an online educational services company were asked to recall specific cases in which they experienced online silence in e-mail communication, and specific cases in which they created online silence in e-mail communication. The questionnaire covers various aspects of the experiences, allowing the exploration of issues related to online silence, including uncertainty, hurt feelings, and causes of online silence. The study identifies “hot-spots” along a CMC cycle (Figure 1) in which online silence is more likely to be created. The study also identifies three main categories of explanations for online silence, labeled categories A-C:

Category A – Recipient has not seen the incoming message
Category B – Recipient did not intend to respond
Category C – Recipient intended to respond or even started responding; nevertheless, the recipient did not send a response for a long period of time

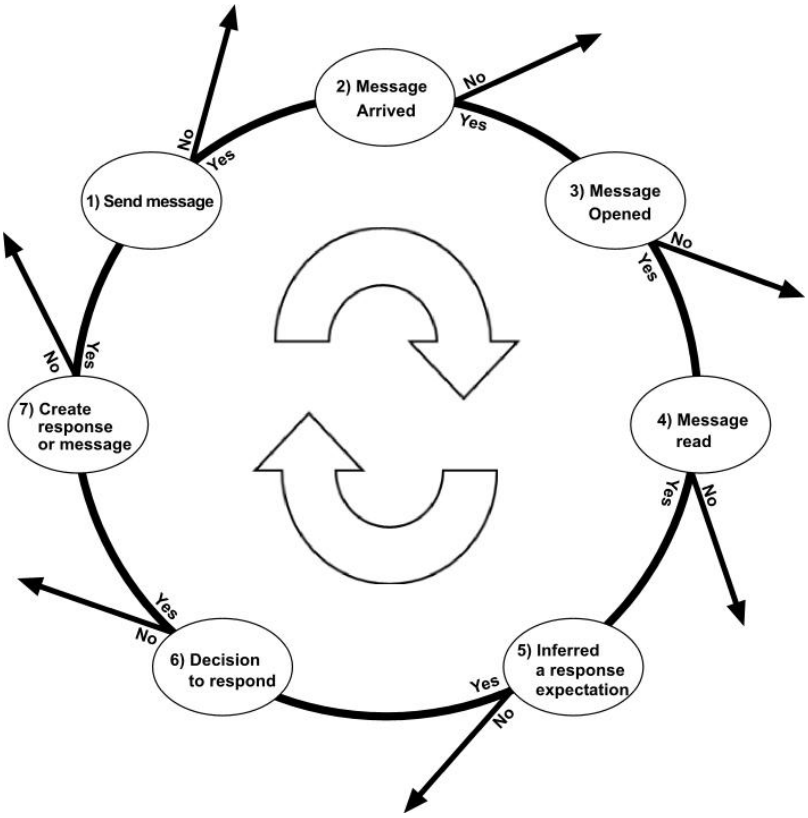

Figure 1. A schematic model of a text-based CMC cycle

Discussion

A model of online responsiveness and silence

Silence is a subjective experience, which is highly context dependent. This makes defining silence and its causes more challenging. We propose a model that incorporates the context dependency and the subjective nature of online silence through the use of the average response latency τ (tau), the latency that was identified and explored in studies 1 and 2. The model presented here focuses on e-mail, which was the medium that studies 2 and 3 focused on, but can be extended, with some modifications, to other forms of online communication with distant students such as online forums (Kalman, Ravid, Raban, & Rafaeli, 2007).

The model is based on combining the three chronemic zones identified in study 1, with the understanding of expectancies about response latencies from study 2, together with the sender and recipient perspectives as well as the three categories of recipient silence explanations identified in study 3.

A key feature of the model is the separation between the perspective of the sender, and that of the recipient. We present a "sender model" and an "intended recipient model". The perspectives are different not only since the sender and the intended recipient are usually physically separated from each other, and view the communication between them separately, but also since their chronemic zones, as defined as defined by τ do not necessarily overlap. Both models adopt the term "pause" in its traditional use (Tannen, 1985) of denoting the period of time between the message and its response, and the terms "delay" and "silence" to denote a situation in which a response has not been received. "Expected" is used to denote pauses which are typical and are to be expected in a majority of the cases, and "acceptable" is used to denote pauses and delays which are longer than expected, but still within the normative range.

The sender model

The sender model describes six regions that represent a 2x3 table (Figure 2). The x-axis (representing time) is divided into three chronemic zones: below τ, between τ and 10τ, and above 10τ. The y-axis is divided into two sections, one representing receiving a response to the e-mail message, and the other representing receiving no response. The six regions, or rubrics, that are defined by the intersection of the three zones with the response/no response alternatives, are described in Figure 2, and are numbered by roman numerals I-VI.

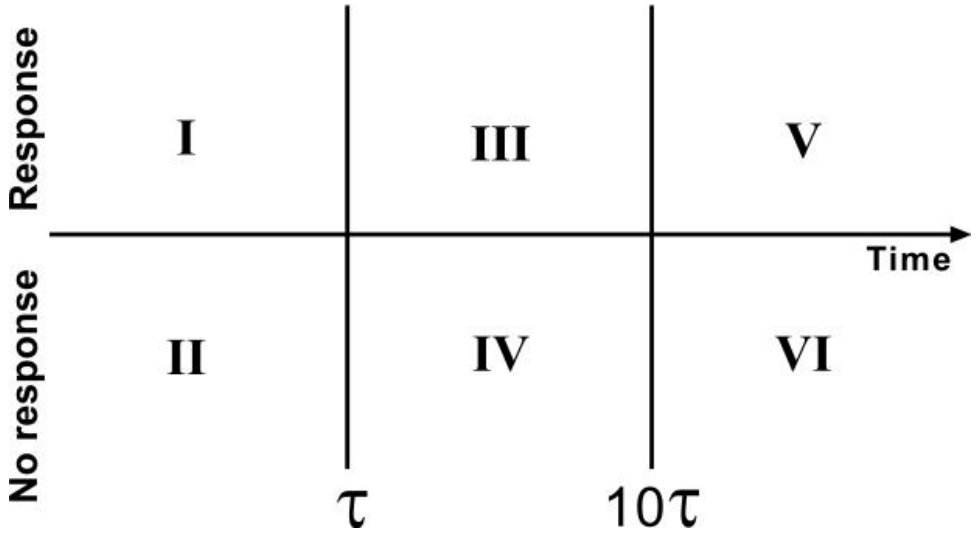

Figure 2. The six rubrics of the sender model, numbered I-VI

When a sender sends a message and expects an answer from the intended recipient, the chronemic zones identified in study 1 and the results of study 2 suggest that the following six possibilities can occur (RL - Response Latency):
Answer from recipient within τ or less (rubric I): **Expected pause**
No answer from recipient within τ or less (rubric II): **Acceptable delay**
Answer from recipient within τ<RL<10τ (rubric III): **Acceptable pause**
No answer from recipient within τ<RL<10τ (rubric IV): **Acceptable delay**
Answer from recipient within RL>10τ (rubric V): **Long Pause**
No answer from recipient within RL>10τ (rubric VI): **Silence**
These six regions are summarized in Figure 3

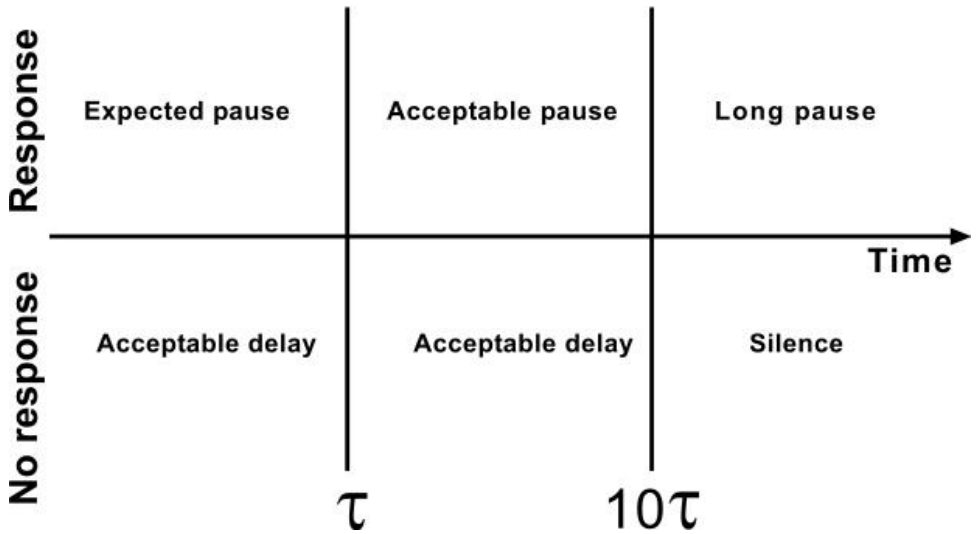

Figure 3. The sender model

The intended recipient model

The intended recipient model is described in Figure 4. Like the sender model, this model too extends along a time continuum defined by τ. In this model there are three possible states, linked to the three categories (A-C) identified in study 3.

In the first state described by the top arrow labeled 1, the intended recipient receives the e-mail message and intends to answer it. If the recipient responds immediately, before τ, the response time is perceived as an expected pause. If the response is not created immediately, before τ, (category C) then an acceptable delay is created. Moving along the continuum to the right, the model shows that if an answer is created within a period between τ and 10τ, the result is an acceptable pause, and if no response is created within this period of time, the result remains an acceptable delay. If, then, a response is finally created after more than 10τ, the result is a long pause, and if no response at all is created, despite the intentions of the recipient, then the result is a long delay or silence. In the second state, described by the middle arrow labeled 2, the intended recipient receives the e-mail, but does not intend to answer (category B). This recipient will be creating silence from the first moment. In the third state, described by the bottom (broken) arrow labeled 3, the intended recipient does not even receive the message (category A), and thus will not be aware that he or she is creating silence.

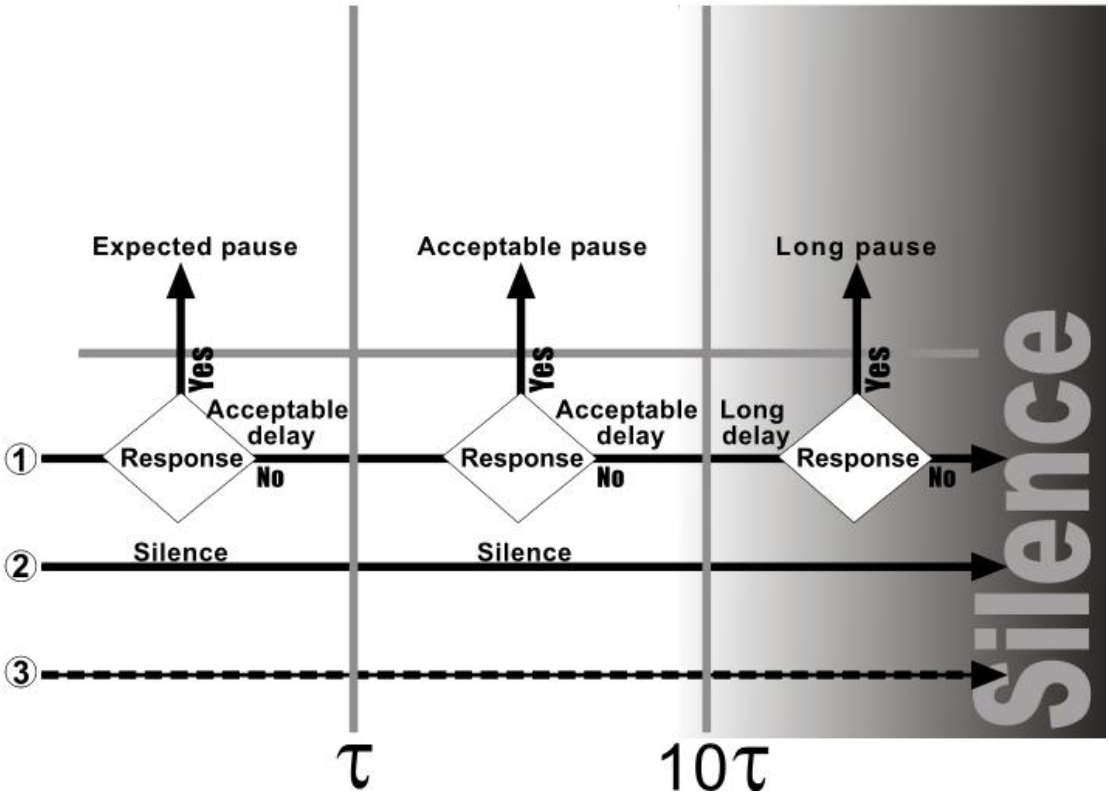

Figure 4. The intended recipient model

For clarification purposes, let's follow the intended recipient model along two hypothetical cases. The τ in both cases is assumed to be 24 hours. In the first case, Alice, the intended recipient, opens an e-mail, reads the content and decides to answer the e-mail at a later time, since creating the response will take at least half an hour of work. The decision to respond to the e-mail places Alice's case along the continuum of arrow 1. If Alice finds the time within a day or so to create the answer, the pause between receiving the e-mail and sending the reply would be an expected pause. If, on the other hand, a week goes by and no response is sent, the result will be an acceptable delay, and if another week goes by, the delay will already be perceived as

silence. Finally, if Alice sends an answer after three weeks of silence, the time between receiving the message and sending the response will be perceived as a long pause. In the second case, Bob sends Carol an e-mail. Carol does not notice the incoming message from Bob. Carol's case is placed along the continuum of arrow 3, in which case Carol is simply not aware of anything. Let's say now that after 3 days Carol learns from a colleague that Bob sent this e-mail that she has not seen. Consequently, Carol searches her inbox and trash/spam folder, and identifies Bob's e-mail message. At this stage, Carol decides whether she intends to respond to the e-mail, in which case she "moves" to arrow 1, or she decides that she does not intend to answer the e-mail, in which case she "moves" to arrow 2, expressing silence. Assuming the former, if she then responds to Bob within a few days, then the response is still within the τ-10τ region, and the result from Bob's point of view is an acceptable pause.

Implications for online educators

Our findings on online silence, its causes and its consequences have several implications for online educators, as well as for administrators in online programs.

Clear definitions: The online education research literature is not consistent in its use of terms relating to online silence. A clear definition, as proposed here, of online silence ("no response after more than 10τ"), allows researchers and practitioners to differentiate between lurking (Beaudoin, 2002; Rafaeli, Ravid, & Soroka, 2004) and online silence, as well as between pauses and online silence, and between silencing and unresponsiveness.

Make the implicit, explicit: Response latencies should be discussed with online students and faculty, and the rules about responsiveness in the classroom should be clear and explicit. These rules should also take into account the expected τ in the online classroom (Kalman et al., 2007).

Focus on the silence hotspots: our studies reveal hotspots in the communication cycle, where online silence is more likely to happen. By making course developers and online instructors aware of these hotspots, courses can be better planned, and instances of online silence either prevented or handled before they affect the progress of the students.

Focus on causes of online silence: The studies reveal several categories of online silence. These categories should be incorporated into the training online learners receive before they start their actual courses (induction or orientation sessions), and discussed. Students should receive mentoring on how to prevent online silence. This mentoring should focus on how to increase the likelihood that your question will receive an answer, and on how to prevent from inadvertently causing online silence.

Create better rapport with online learners: Finally, as study 2 shows, response latencies can influence online impression formation. Though these results have not yet been researched in an online educational setting, they do provide some empirical support to otherwise unsupported suggestions in the literature (e.g. Liu & Ginther, 2002) to use quick responses as a tool to build a positive online impression and thus build rapport with the online learners.

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