ABSTRACT
This note details a set of questions about mixed initiative and argues for a compendium of the kinds of violations that can occur in dialog.

COLLABORATION IN DIALOGUE
I have been exploring collaborative interface agents (Rich & Sidner 1996, Rich & Sidner 1997a,b). Our interface agent follows some very simple rules for releasing its turn in its ongoing dialogues with a user. Similar and therefore rather stilted conventions are also followed by the user. If we are to improve this behavior, we must understand what counts as legal and illegal mixed initiative behavior.

Schegeloff (1968) once characterized a turn in conversation as being about one bit of information. While this was hardly a quantifiable measure, it offers a starting point for what must constitute a turn. Clark and Schaefer (1989) argue that a conversation proceeds by contributions that specify and ground some content, with the view that all conversation is collaborative.

VIOLATIONS OF MIXED INITIATIVE
I am interested in the question of characterizing violations of the rules for mixed initiative. When has a participant said too much? Can a participant say too little? If conversation is, as I have argued (Sidner 94, Grosz & Sidner 86), to establish mutual belief, then how much mutual belief can one participant express before turning over the conversation to another? At what point are there "too many" mutual beliefs expressed by a participant in the dialogue, and hence a violation of mixed initiative (i.e. the conversation has become a lecture or is unintelligible)? What causes a turn to violate rules of initiative? Is it because the conversation loses its collaborative format, or because the content of a turn is unintelligible or because the receiving participant is somehow prevented from taking a turn?

Because conversation is a form of collaboration, can the other participant(s) prevent a turn from being illegal by providing acknowledgements via backchanneling? And is "turning over" the conversation a correct characterization of how conversation proceeds or do participants "take" the conversation from others? Do we have a corpus of example violations, even if the violations can only be seen as such based on intuitive criteria at this time?

A simple case of the question of violations of the rules for mixed initiatives concerns acknowledgements and acceptances. When acknowledging or accepting the contents of the previous participant's turn, what violations can occur? Certainly the most obvious would be to acknowledge a turn that the participant did not really hear or to accept one that did not make sense. More complex patterns are possible. If a participant conducts a lengthy turn during which the other participant interjects "uh-huhs" and other acceptance back channels, after which the other participant takes the floor and proceeds to ask questions of information about what they did not understand, is such a behavior a violation of mixed initiative or is it merely thoughtless or impolite?

In the symposium on Computational Models for Mixed Initiative Interaction, I think violations of mixed initiative are critical to our understanding of what must be modelled, as ungrammatical sentences are for parsing technology.

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REFERENCES

1Acknowledgements are utterances (full or partial) that indicate to a participant that their utterances were heard and understood. Acceptance are utterances that indicate that the utterance is believed.