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Spice up Your VUI with Dialog Markers

One way to ensure that your Voice User Interface (VUI) sounds cold and robotic is by stripping it of dialog markers such as "ok," "and," "next" and "finally" that give form and texture to a dialog flow.

Take the following exchange, for example:

S: How old are you?
C: Twenty four.
S: Are you male or female?
C: Female.
S: What is your home phone number?
C: 703-555-1234.

With a few markers strategically placed, the robotic, somewhat aggressive tone of the system can be easily smoothed out:

S: How old are you?
C: Twenty four.
S: Are you male or female?
C: Female.
S: Ok. And what is your home phone number?
C: 703-555-1234.
S: Got it. Thanks!

Acknowledge receipt of information

An important function dialog markers fulfill is signaling that the flow of information between the conversational participants is proceeding smoothly. In the context of human-computer dialogs, where often the exchange consists of the system asking the human for pieces of information, one can very easily end up creating a robot-sounding application by omitting such markers.

In the exchange above, three simple devices are used to make the exchange flow more smoothly:

The use of "and" (line 3) to implicitly signal receipt: the "and" in the second exchange works as an information receipt marker implicitly by virtue of its role as a transition marker (see below).

The use of "ok" (line 5) to explicitly signal receipt of information: usually "ok" is used to acknowledge receipt of "small bits" of information - i.e., information that can be provided in one or two words (e.g., an answer to a "yes/no" question, a city name, etc.).

The use of "got it" (line 7) to signal receipt of the telephone number: in situations where the caller is asked to provide a long piece of information, the marker used should not only signal receipt of the information but also acknowledge the effort expended by the caller to provide that information. Markers such as "Got it. Thanks,"

"Thank you," and "Great. Thanks!" should come after the caller has provided pieces of information such as a telephone number or a credit card number.

Announce that you are about to give some information

In exchanges where a series of questions are asked of the caller and then some piece of information is provided (e.g., account balance), the system should always explicitly signal that it is about to provide the caller with the sought information. A simple sentence such as, "Here is your balance," "Your balance is," not only is a lot friendlier than coming back with a raw dollar amount, but serves as a cue to the caller to pay close attention to what the system is about to say.

In situations where the information about to be given will require special concentration from the caller, the system should use a longer phrase to prepare the caller. For instance, "I am about to give you your twelve digit tracking number. If you need me to repeat the number, just say, 'repeat'. Your tracking number is..."

Mark sequencing

Probably the most jarring aspect of the example exchange provided above is the complete lack of any sequencing markers. As mentioned in a previous column, -- "Why VUI Design is more Challenging than GUI Design" -- dialogs are both time-linear and unidirectional. This means that the system needs to constantly signal to its human partner that things are moving forward. Useful markers for achieving this are "and," "now", "next" and "finally."

Mark the beginning and end of a section

When an exchange can be structured in larger dialog bloc units, marking the beginning and the end of a bloc can greatly help the caller position themselves in the problem-solving process and hence prime them to understand what the system expects from them. (See "The Elements of Phone Survey Design").

The most useful bloc structuring markers are, "let's start," to mark the beginning of a bloc, "next" and "now" to mark transition from one bloc to the next, and explicit statements such as "we are done with the first phase," or "Great! I now have your account information" to mark the end of a bloc.

It is important to note that marking a sequence of questions is not the same as marking a sequence of larger blocs of dialog. For example, in a survey of rapid fire questions, the use of "first," "second," "third," is appropriate and helps the caller keep track of where they are in the flow of questions. But such markers are not appropriate, since the time gap between the beginning of one bloc and the next bloc is much longer than the one between the beginning of a question and one that follows it. Instead, use markers such as, "next" and "now", in conjunction with an explicit description of what the upcoming bloc is about.

Mark errors

Do mark no-inputs, no-matches, and other errors with expressions such as "sorry, I couldn't hear you," "sorry I didn't get that," "oops," etc. A particularly important error to mark is bad recognition: when the system echoes back a piece of information, asks for a confirmation, and the caller signals that the system has not recognized correctly. A brief marker acknowledging that the system has made a mistake makes for a much smoother flow than an abrupt re-asking of the original question.

That said, be careful not to dwell too long on apologizing about errors and make sure that you don't substitute apologies for a clear re-articulation of what you expect from the caller.

Show light at end of tunnel

In dialogs where the caller is taxed with a prolonged exchange - e.g., a long survey - use milestone markers to show the caller that there is light at the end of the tunnel. Use markers such as, "We are half way there," "We are almost done," "Almost there," etc.

Indicate implicitly that system still owns the turn

Make sure that you never allow your application to go silent for more than two seconds when it owns the conversational turn - i.e., the application, and not the caller, is expected to say something. When an application goes silent, the caller usually interprets it as a sign that the system expects them to say something, or worse, that the system has gone down completely. Markers such as, "one moment please," "please hold," or even the sound of keyboard strokes are usually enough to reassure the caller that the system is still working.

Tell the caller explicitly that you are placing them on hold

In situations where you expect the system to take more than 5 seconds, use markers that explicitly tell the caller that the wait may be long, such as, "Please hold. This may take a few seconds." If the wait is indeed just a few seconds, the sound of keyboard strokes is good enough. If the expected wait is 30 seconds or more, on-hold music is a more appropriate device indicating that the system owns the turn.

Don't repeat the same marker twice in a row

Note in the exchange below how the insertion of the "ok" in line 3 suddenly makes the exchange sound a bit more robotic than without the "Ok." Be sure to always take care to read the flow of exchanges to make sure that such repetitive marking does not take place.

S: How old are you?

C: Twenty four.

S: Ok. And are you male or female?

C: Female.

S: Ok. And what is your home phone number?

C: 703-555-1234.

S: Got it. Thanks!

Make sure that you pay attention to the markers after an error strategy

Errors are bad not only because they are errors but also because they break the rhythm and flow of a dialog exchange. Since markers are all about rhythm and flow, make sure that you always take into account the different paths' error strategies.

Line 5 in the following exchange illustrates what happens when you don't pay attention to how an error strategy clashes with a marker designed to facilitate smoother flow. The clash, in fact, results in an even more jarring piece of dialog than if the marker had not been inserted in the first place.

S: How old are you?

C: Twenty four.

S: And are you male or female?

C: [Silence]

S: Sorry, I didn't hear anything. And are you male or female?

C: Female.

S: Ok. And what is your home phone number?

C: 703-555-1234.

S: Got it. Thanks!

Here is how the error strategy should interact with the marker:

S: How old are you?

C: Twenty four.

S: And are you male or female?

C: [Silence]

S: Sorry, I didn't hear anything. Are you male or female?

C: Female.

S: Ok. And what is your home phone number?

C: 703-555-1234.

S: Got it. Thanks!