

**A Theory about the
Effect that the Surroundings have
On How People Communicate**

**Bernard Sypniewski
Rowan University – Camden Campus
sypniewski@rowan.edu**

Abstract

My recent researches Sypniewski 2004a and b, Sypniewski 2006 have shown the substantial and unanticipated effect that the surroundings can have on the way that people communicate with each other. “Surroundings” is a technical term in Hard Science Linguistics (HSL) Yngve 1996:86 that refers to those objects, energy flows, and the like which are linguistically relevant when we observe people communicating with each other but are not part of the actual communicative behavior that is being observed. The surroundings form, if you wish, the matrix in which people communicate. Some linguists refer to “context” in vaguely similar terms but rarely is “context” elucidated; see, e.g., Searle 1969. My studies began with an examination of Austin’s performative utterances Austin 1961, Austin 1962 which have poorly-defined relations to specific environments. Austin and other speech act theorists occasionally give lip service to the notion that context is important but never expand upon why context is important.

We cannot accurately model an observation of people communicating with one another without including the linguistically relevant objects and energy flows in the model. Including such objects and energy flows may eliminate problems that their omission would raise.

My researches are at the point where it is worth considering describing the effects of the surroundings in general terms so that we might formulate an initial theory. This paper is a first attempt at such a theory.

Introduction. An HSL model of an observed instance of people communicating with other people is called a linkage¹. Every linkage has at least one task, referred to as the “top-level task”. A task is a description in HSL notation of some

event or activity that is linguistically significant for a particular linkage², i.e., for the observation being modeled. A task may contain subtasks as needed. A linkage contains models of all relevant persons called “role parts”. HSL researchers recognize that objects, energy flows³, and similar items may have a linguistic effect which should be taken into account in the model (linkage). These, too, can be modeled using prop parts for objects, channel parts for energy flows and setting parts for other aspects of the surroundings.

When we observe people communicating with other people, we observe them communicating somewhere about something. Some objects that surround people have a linguistic effect on how people communicate with other people or what they communicate about; these objects may have properties which have values that change over time. For example, if two children talk about a ball which they have with them, the ball may have some effects on their discussion, e.g., it may be the topic of their conversation or act as a point of reference. Let us assume that there are several balls present during the children’s conversation. Each ball has properties such as location and, perhaps, color and size. Some of these properties may be linguistically relevant; some may not be. If one child says that he wants the red ball, the color property is linguistically relevant. Properties can be modeled as properties of the prop parts that represent each individual object. People also have properties that can be modeled through appropriate role parts.

Tasks. If an object or energy flow has an effect on the way that people communicate in the real world, a corresponding prop part or channel part must be included in the linkage if we want the linkage to be a satisfactory model of the situation that interests us. For example, in Sypniewski 2004b:174 which describes how people communicating with each other when they placed lottery bets, the layout of the lottery sales booth was observed to strongly direct the communicative behavior of the sales clerk and customers. The position of the ticket display allowed some customers to indicate what tickets they wanted to purchase simply by pointing at them Sypniewski 2004b:177. Obviously, if the

tickets were not present or visible in the way that they were, the ostention (the pointing at the tickets) would not have been possible and this type of communicative behavior could not have taken place. A description of the tickets and their placement in the surroundings is, therefore, necessary for an accurate modeling of the situation.

We can imagine a situation in which a loudspeaker or public address system may have an unexpected effect on the way that people communicate. Let us assume that friends, call them A and B modeled by prop parts [A] and [B], are having a conversation over a meal in a club. A third person, call him C modeled by a role part [C], not part of the conversation, works on the public address system, modeled by a prop part [sound system]. While working on the system, C causes the system to output some “feedback”, a loud, piercing noise. The feedback causes A and B to pause their conversation during the feedback and, perhaps, to comment on the feedback. If we wished to model A and B’s conversation, we create a linkage, let us call it [AB], with a top-level task⁴, let us call it <converse>, to model the conversation. A brief example of such a linkage is in the Appendix. <converse> would not be a simple task because of the feedback (which we could model with a channel part, let us call it [feedback]⁵. When the feedback does not occur, <converse> continues without interruption. However, when the feedback does occur, <converse> is interrupted. The effect of the feedback may be modeled with a subtask performed by [A] and/or [B], let us call it <comment on feedback>, which is executed when <converse> is interrupted, runs its course, and then, when it is completed, allows <converse> to continue. No interrupting subtask is activated if feedback did not occur in such a way as to override the conversation.

The presence or absence of a prop part or similar constituent element can, therefore, cause a significant change in the overall behavior of the linkage. The reason, of course, is that the linkage models a real world situation in which the change in communicative behavior has been observed. A model is a simplification of observed reality which can help us to understand the complexity of the real world. We have seen that models must change their behavior when

some object or energy flow causes a change in the way that the people we have observed communicated with other people in the real world.

So far, we have identified two broad ways that objects or energy flows can effect the way that people communicate with each other. If an object or energy flow has a linguistic effect⁶, its effect can either be to enable a linguistic task to continue operating or to interrupt a linguistic task. If an object or energy flow interrupts a linguistic task, the interruption will be modeled by a subtask or, perhaps, even a task that causes the operation of another task to cease, if only temporarily. If an object or energy flow helps a linguistic task to continue, the object or energy flow will be modeled as a component of the task in such a way that the task cannot be completed unless the object or energy flow is properly represented.

A task models some portion of the behavior that one person uses to communicate with another person in the real world. There are no naturally occurring tasks; all tasks are creations of the model builder. In other words, a task is a theoretical object what is used to describe some aspect of reality but it (the task) is not itself real⁷ but only a representation of reality. The model builder decides how many tasks are needed in a particular model and how each task should be described. The reference is always to the real world observation. The job of the HSL model builder is to accurately represent that observation. As we have seen, task performance can be effected by prop parts, channel parts or setting parts or, rather, by their properties, which are representations of some aspect of the object or energy flow in the real world. Properties may change value over time. Take our feedback example. We modeled the sound system with a prop part called [sound system]. [sound system] can have properties as we need them for our linkage. Let us say that [sound system] has a property called <on-off> which represents the state of the real-world sound system. If we say that [sound system]<on-off\off>, i.e., that the sound system (in the real world) is off, we can say that it will have no linguistic effect on the conversation between A and B⁸ because the sound system cannot make any noise that would interfere with A and B's conversation. If, on the other hand, we say [sound system]<on-

off/on>, i.e., that the real-world sound system is on, we will probably want to give sound system another property <volume>. Depending on the needs of our model, we can assign <volume> different types of values. If we need to be very precise, we may assign <volume> values in decibels. If we do not need this fine degree of representation, we may assign <volume> linguistic rather than numerical values, such as “soft”, “loud” or “very loud”. We may also wish to create a property like <pitch> to describe the type of sound being made. Strictly speaking, some of these properties may be optional; we only need to incorporate those which are needed to accurately model the observed reality.

The point we make here is that it is not usually enough to say that the presence or absence of an object has a linguistic effect, although simply representing the object or energy flow may be sufficient when the object or energy flow is, in some way, the “subject” of a discussion that is being modeled, e.g., the work of art that two museum-goers stand before and discuss. Usually, the linguistic effect is caused by the value, or, more frequently, the change in the value of a property of the object or energy flow at a particular point in time captured by the model⁹. For example, in our feedback case, if [sound system]<on-off/off>, then [sound system] will probably not have any linguistic effect in [AB] because a sound system that was turned off had no effect on the real world conversation. Certainly, <converse> would not be interrupted just if [sound system]<on-off/on> but only if [sound system]<volume\very loud> (or whatever value we choose to indicate that the feedback overwhelms A and B’s conversation) at the same time. In short, it is a complex of property values, along with the changes in those values, that has a linguistic effect.

Discussion. We should not think of the linguistic effect of the property values of prop parts and the like as being the effect of some natural law of linguistics equivalent to a physical law like gravity. At best, linguistic effects are probable effects. Returning to the lottery example referred to above, the presence of a display of lottery tickets enabled some customers to place orders for specific lottery tickets by pointing at the ones desired but the same display did not cause

them to do so. If it did, the other customers would have also pointed at the ticket display when ordering lottery tickets. They did not. In fact, it was a minority of customers that ordered by pointing. The presence of the lottery ticket display had a linguistic effect for some customers but not others.

How can we determine whether the object or energy flow does have an effect? It is the communicating individuals who are observed who determine whether some object or energy flow has a linguistic effect and, if so, what kind of effect it has¹⁰. For example, if, during the period of time represented in [AB], the feedback occurred when A and B were eating soup rather than conversing, the feedback might not have any linguistic effect or might have an effect different than if it occurred while A and B were actively conversing. We also see that the mere presence of an object in proximity to the communicating individuals does not, by itself, mean that the object will have some linguistic effect. Neither does it mean that the object will have no linguistic effect. The researcher must carefully observe the communicating individuals to determine what, if any, effect the objects or energy flows may have.

If a particular environment contains many objects or energy flows that facilitate a certain type of communicative behavior, we expect to observe people engaged in the type of communicative behavior promoted by the objects or energy flows. In such an environment, we may be able to predict the type of communicative behavior that will occur with fairly high probability although we might not be able to predict the exact behavior, e.g., the words used in a conversation, to the same degree. For example, in the lottery sales study, the lottery sales area was identified by signs as a special area of the store and contained items only appropriate to lottery sales. It was easy to predict that a person who entered this area and approached the sales desk would be more likely to engage in communicative behavior with the sales clerk which would result in the purchase of one or more lottery tickets or communicating about some other lottery-related activity such as the cashing-in of a winning ticket or inquiring about winning numbers than any other type of communicative behavior (asking directions, general chit-chat, etc.). While there were different ways of

making a lottery ticket purchase, including an instance in which a lottery ticket was purchased without the use of any words at all, it was clear from the incidence of communicative behavior that related to the purchase of lottery tickets that the surroundings promoted this sort of communicative behavior nearly to the exclusion of other types or subjects.

In a situation that might be modeled as a task in a linkage in which objects or energy flows cause an interruption in linguistic activity, we predict that the object or energy flow is likely to result in comments about the source of the interruption itself. In [AB], when the feedback occurs, A or B or both are likely to mention the feedback, however brief the comment might be. The ringing of a telephone while a conversation is ongoing often results in one party or another saying something to the effect of “Let me get that” or in some way commenting on the incoming call. The linguistic effect of an object or energy flow may result in communicative behavior which is more predictable, in a general sense, than the communicative behavior that it interrupts¹¹.

Conclusion. What can we make of all this? We can say several things at this stage in our studies:

1. Objects and energy flows through their properties can effect the way that people communicate with other people at particular points in time. Our observations confirm the claims made in Yngve 1996.
2. The linguistic effects of the objects or energy flows can either facilitate or interrupt the way people communicate in a particular situation.
3. The communicating individuals determine what effects, if any, specific objects or energy flows have on their communicative behavior. The HSL researcher clarifies what these effects are by constructing an accurate linkage but the linguistic effects take place in the real world.
4. The same objects or energy flows may have different effects, including no effect, on the way that different people communicate with other people at different times. In HSL models, time is always a factor.

When we say that an object or energy flow “has a linguistic effect”, we mean that the real-world object or energy flow alters the communicative behavior of the communicating individuals in some way. It is, perhaps, easier to see this effect in terms of the model of the behavior in question. If the omission of an accurate model of an object or energy flow degrades the accuracy of a linkage as an accurate representation of real-world linguistic events, the object or energy flow “has a linguistic effect”. In more positive terms, if the inclusion of an accurate model of an object or energy flow enhances the accuracy of a linkage as a model of our observations of real world events, the object or energy flow “has a linguistic effect” in the situation being observed. If the inclusion of an accurate model of an object or energy flow does not enhance the accuracy of a linkage as a model of our observations of real world events, the object or energy flow does not have a linguistic effect and a model of the object or energy flow may be omitted from the linkage. Recall that the linkage only represents the communicative behavior of the persons being observed and not the sum total of their behavior.

Appendix

Feedback Linkage

This appendix contains a simplified model of what we have referred to as the feedback linkage throughout the text along with notes explaining the details of the linkage. Please note that the line numbers have been inserted for easy reference only and are not part of the linkage. This linkage is not intended to be definitive or complete. There may be other and better ways of modeling this scenario.

1. [AB][sound system]<on-off><volume><duration><pitch>
2. [A]<hear B><talk to B><comment on feedback>
3. [B]<hear A><talk to A><comment on feedback>
4. [C]<adjust sound system>
5. <converse> : [A]<talk to B> v [B]<talk to A>
6. -<converse> : [A]<comment on feedback> v [B]<comment on feedback>
7. [sound system]<on-off\off> v [sound system]<on-off\on> x [sound system]<volume\low> :: [A]<hear B\yes> x [B]<hear A\yes> x [feedback\no]
8. [feedback\yes] :: [A]<hear B\no> x [B]<hear A\no>
9. [A]<hear B\yes> x [B]<hear A\yes> -> <converse>
10. [A]<hear B\no> v [B]<hear A\no> -> -<converse>

11. [C]<adjust sound system> : [sound system]<on-off\on> x [sound system]<volume\high> x [feedback\yes]

Notes

1. [AB] is the linkage which has a prop part ([sound systems]) which has several properties mentioned in angle brackets(<>).
2. The role part [A] has three tasks (in angle brackets) which are not described in detail.
3. The role part [B] is similarly described.
4. The role part [C] has only one task.
5. The top level task <converse> is defined as a task in which either [A] executes the <talk to B> task or (v) [B] executes the <talk to A> task.
6. -<converse> means, in effect, that the <converse> task is "turned off" or interrupted. When this happens either [A] performs the <comment on feedback> task or [B] performs a similarly named task. Note that both [A] and [B] have tasks with this name which are NOT the same. The results of the two tasks may be different.
7. When [sound system]'s <on-off> property is set to off or <on-off> is on and [sound system]'s <volume> property is set to low, [A]'s <hear B> property is set to yes and [B]'s <hear A> property is set to yes (they can both hear each other). There is no feedback. This is an example of a setting procedure.
8. When feedback occurs, [A] and [B] cannot hear each other.
9. If [A] can hear [B] and vice versa, they converse (execute the <converse> task).
10. If [A] cannot hear [B] or vice versa, <converse> is interrupted.
11. This is a description of what happens when [C] executes the <adjust sound system> task. Here we model how feedback occurs ([feedback\yes]).

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¹ The interested reader should look to Yngve 1996 for formal definitions of all technical terms.

² A task must exist within a particular linkage. A linkage is a model of a particular set of observations of real-world linguistic activity. In HSL researches, we do not model “Platonic” events. All HSL models must be models of either actual observations or situations which could be actually observed, such as proposals for actual experiments.

³ An energy flow may be the representation of sound volume, the amount of light, pressure of a hand on an arm, etc.

⁴ A “top-level task” is the main task in a linkage which, when executed, begins the model.

⁵ It might be possible to model the feedback by including it as a property of [sound system]. There are times when the exact method of modeling aspects of a linkage are matters of the HSL researcher’s preference.

⁶ We must recognize that most objects, etc. in the real world will probably not have linguistic effects on the situations we are concerned with. We concentrate our attention on those that do, of course.

⁷ To say otherwise would be commit domain confusion, Sypniewski 2007.

⁸ Except in the event that the conversation between A and B is about the sound system.

⁹ If we will not model something, we need not be concerned with it.

¹⁰ The communicating individuals may not consciously determine whether an object or energy flow effects their communicative behavior. The researcher must carefully observe what occurs to determine whether there is an linguistic effect.

¹¹ Some linguists, like Chomsky, claim that communicative behavior is essentially unpredictable or that an observer is unable to predict what will be said next. Our studies have shown that in, at least, some situations this is not the case. We will not go into this further in the current paper.