The purpose of this chapter is to explore some of the most salient duplicities of the phonological level of language.

We have seen from the very beginning of this book that one of the most remarkable facts about language is that there is, as function of the duplicity of language, a systematic tendency for people to be unaware of their own language. So at the level of conscious knowledge the normal person is almost entirely ignorant of his own language. And this systematic ignorance of language is what linguists are referring to when they characterize the normal person as “linguistically naive.”

Further, as we have noted in many ways, the force of this tendency to ignore language is not of the same magnitude for all parts of language. For example, as we explained above in the section entitled “The Displacement of Interest from Pragmatics to Form” beginning on page 159, there is a greater tendency to ignore the pragmatic dimension of language than the semantic, and a greater tendency to ignore the semantic dimension than the formal dimension. Or, to put it the other way around, people tend to be more aware of the form of language than the semantics and people tend to be more aware of the semantics than the pragmatics. There are, in short, systematic asymmetries in the force of this systemic ignorance that is characteristic of the normal person.

As we begin to frame this discussion it is important to note that there is also a systematic asymmetry of ignorance in regard to the phonological level of language, namely, that the tendency to ignore language is more powerful in regard to the phonological level of language than it is in regard to higher levels of formal structure, such as the word level or the sentence level. As a result, while the normal linguistically naive person might have some degree of awareness of the grammar of sentences, he would have less awareness of the morphology of words, and virtually no awareness of the phonology of words. Typically, in modern literate society, if the naive speaker thinks of phonology at all, he thinks of it erroneously in terms of orthography. In other words, the typical naive speaker not only is entirely unconscious of the dimension of phonology, but in his conscious thinking the spelling of language displaces the phonology of language.

What is more, this bias against the phonology of language can also be seen among the linguistically sophisticated in many different ways. For example, those who study language from the point
of view of philosophy, logicians for example, generally focus on sentence level grammar and word level semantics, about which they have very sophisticated knowledge, but they are usually as naive about the phonology of language as the normal naive speaker. The same is true, *mutatis mutandis*, of those who study language from the point of view of psychology, computer science, anthropology, literature, etc. And this bias against the phonology of language is also evident among linguists. For example, far more linguists specialize in the study of the semantics or grammar of sentences, or in lexicology, than in phonology. This reflects the fact that most linguists consider phonology to be trivial and of marginal interest. In fact there have even been proposals in many linguistic departments to do away with requirements for courses in phonetics and phonology. And, as we will see below, there are other ways in which the linguistically sophisticated have inadvertently succumbed to this tendency to ignore phonology.

So the first point I want to make here is that the phonological level of language in general is subject to a duplicitous inversion of evaluation with the effect that the general tendency to ignore language is especially powerful in regard to the phonological level of language.

It is important to make it clear that this asymmetry in unawareness is not accidental. Reasoning in the context of the premise that language is duplicitous, the fact that this displacement of attention is especially powerful in regard to the phonology of language implies that the phonology of language must be especially important. This leads us to frame this discussion of phonology with the premise that, contrary to prevailing opinion, the phonological level of language is the most important level of language. I will explain and justify this conclusion in more detail below, but here at the beginning I will justify it in terms of general principle as follows: The phonological level is the most important level of language because it is the ontological foundation of language. It is where the rubber meets the road. It is where the whole vast illusion machine of language comes into contact with concrete physical reality. ¹ Or at least, it is where the illusion machine comes closest to being in contact with reality, for as we will see, language never actually comes into contact with reality, for it is duplicitous all the way down.

In other words, in the duplicitous sense in which language can be said to exist, language exists in the form of phonological elements. Thus everything in language, even the biggest linguistic objects, the collective mythology of a whole culture for example, or the United States Library of Congress, consist of sentences, which consist of words, which rest ultimately on the foundation of phonological entities, which are fundamentally grounded in the sound of the human voice.

Of course it is true that language can be represented and transmitted by means of writing, by Morse code, by electronic signals, etc., but these are secondary or tertiary modes of representation dependent upon and derived from the phonology of language. All other modes of representation of language are phylogenetically and ontogenetically subsequent to phonology. This is one of the few points on which there is nearly universal unanimity among linguists, though many non-linguists persist in holding on to the erroneous idea that writing is more basic. The linguistic view was stated by Sapir thus:

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¹ Language also comes into contact with reality in the pragmatic dimension of language in regard to the value of a speech act. The question of value is ultimately the question of “Does it work?”. Specifically, “Does it satisfy the desire it is supposed to satisfy?” Here in the phonological level of language we are concerned with how the form of language comes into contact with reality. The question of form is “What does it consist of?” and “How is it shaped?”
The Phoneme

phonetic language takes precedence over all other kinds of communicative symbolism, all of which are, by comparison, either substitutive, like writing, or excessively supplementary, like the gesture accompanying speech. (SW p. 7)

So far as I am aware the only possible exception to this generalization are the so called “sign” languages, such as the gestural language that was used as a lingua franca by the plains Indians, or the various gestural languages of the deaf, which are based upon movements of the hands rather than movements of the vocal apparatus. It appears that some of these systems may be to some extent independent of vocal language, but I am not familiar enough with them to make a judgement. If there are such “languages” (I put this word in quotes because they should not be called “languages”, which means “tongues”, but rather something like “hand-ages”) that are independent of normal language, it would be very interesting to compare their “handology” with the phonology of normal language. But in any case, in regard to the present discussion such “languages” would be precisely abnormal languages.

So language is naturally embodied in the sound of the human voice and thus the ontological foundation of language is in the phonological dimension of language. So language is basically made up of phonological entities. And for this reason the tendency to ignore the phonology of language is the most powerful.

In the present context, which is framed by an awareness of the essential duplicity of language, the fact that what seems in the conventional mind to be the marginal is actually the central should not surprise us. Indeed, it is predicted and explained by the premise that language is essentially duplicitous. So, as we begin to look at the phonology of language, it is especially important to remind ourselves that we linguists must take pains to resist the deceptive allure of the multifarious duplicities of language. Or as Edward Sapir put it more than sixty years ago,

WE MUST LEARN TO FIGHT THE IMPLICATIONS OF LANGUAGE.

In the light of this admonition, to which we will return below, we can consider the following discussion to have a dual purpose: on the surface we will be talking about the phonology of language, but at the same time we will also be talking about the theoretical program of the science of linguistics. And, of course, needless to say, we will also be talking about the duplicity of language.

The Phoneme

Let us begin by considering the phoneme. As we have mentioned before, the seminal insight which gave birth to the science of linguistics was the realization, independently arrived at by several different scholars at about the same time, that the basis of language is not the actual physical sound itself but a system of abstract sound-concepts, which came to be called phonemes. One of those who independently came to this realization was Edward Sapir, who’s views we will discuss below. Another was Ferdinand de Saussure, who said,

The thing that constitutes language is, as I shall show later, unrelated to the phonic character of the linguistic sign. (p. 7)
His use of the term “unrelated” here has sometimes been misinterpreted: the point he wanted to make was not that “the thing that constitutes language” - the phoneme - is totally unrelated to sound, but that the phoneme is not the same type of thing as sound.

To clarify his point, consider the following analogy. I am not related to monkeys, and yet I am related to monkeys. That is, I am not related to monkeys in that my father and mother are not monkeys, and yet I am related to monkeys in that I am similar to monkeys, e.g., I am shaped generally like a monkey, I eat like a monkey, I was born like a monkey, etc. So what Saussure was trying to say is that the phoneme is unrelated to sound ontologically, and yet it is related by virtue of similarity.

It is clear that he wants to assert that the phoneme is related to sound by similarity from the fact that he referred to the phoneme as a “sound-image” (p.15). As we discussed in Chapter 2, the essence of an image is that it is similar to the thing it is an image of. Also Saussure said that the phoneme comes into being by virtue of the mental process whereby “an auditory image becomes associated with a concept” (p. 14). Thus what Saussure was trying to say was that a phoneme is related to sound by virtue of a relation of similarity.1

So in summary, the point Saussure wanted to make in the above quote is that the phoneme is not related to the phonic character of the linguistic sign and the phoneme is related to the phonic character of the linguistic sign. That is, the relation between the concept and an auditory image is paradoxical: it is the same and it is not the same.

Further, he said that the relation between the phoneme concept and its phonic embodiment is arbitrary, such that the relation between the two

exists only by virtue of a sort of contract signed by the members of a community, (p. 14)

And in direct contradiction to this assertion he also said that the relation is motivated. So the phoneme is related to sound by similarity and it is unrelated. The relation is arbitrary and it is motivated.

Obviously what we have here is another duplicitous paradox of the kind that we have encountered throughout language, so in order to sort it out we have to try to understand the phoneme as a function of the duplicity of language in the framework of the theory of signs. In terms of the theory of signs we can precisely characterize the phoneme thus:

THE PHONEME IS A SYMBOLIZED IMAGE OF A SOUND

In other words, the phoneme is a symbolic stereotype of an iconic image. It is a conventionalized conceptualization of a natural iconic image. The phoneme consists of two levels: a natural image of sound on the iconic level and an unnatural conceptualization of a sound image on the symbolic level.

In this regard the phoneme is similar to the conventionalized symbol of a star - ★, i.e., this representation is related to a star in that it is a stylized resemblance of the visual image of a star in certain ways and yet it is not related to a star in most other ways. Therefore, this relationship is arbitrary in almost every sense and yet it is not entirely arbitrary. So too is the relationship between the phoneme and the acoustic image of an actual sound.

1. It should be noted that linguists commonly suppose that this is the only kind of relation between a phoneme and sound. But this is only the prototypical relation, and, just as with any prototype, various kinds of secondary relations can be added to derive a much more complex and incoherent category such as the category of “women, fire, and dangerous things” of Lakoff (1987).
Another example: the relationship between the phoneme and an actual sound is also similar in another sense to the relationship between the concept of peace and an actual dove as discussed in “The Dove” beginning on page 232. First, as I pointed out there, the fact that a dove is used to represent peace is arbitrary, but not entirely arbitrary, because there are some natural similarities between a dove and peace. But there is another dimension of similarity between a dove and sound which this example highlights: as I pointed out there, in the process of using a particular dove as the embodiment of the concept of peace the dove is captured and forcefully manipulated so as to get it to perform the desired symbolic function. That particular dove is thus captured, colonized, and enslaved to that symbolic function. Or in other words, it is harnessed to a symbolic function, and thus domesticated, and civilized. So too when a particular sound or class of sounds is taken to be used as the embodiment of a phoneme, it can no longer be used freely in its natural expressive capacity. Thus what linguists have traditionally called the “wild sounds” of the child are transformed in the course of language acquisition into the “tame sounds”, or phonemes, of the linguistically naive adult.¹

We will explore these aspects of the phoneme more fully below, but the point I want to make here at the beginning of this discussion is that the basic element of language, the phoneme, is not sound, but a sign. And specifically it is a symbolic type of sign. And so in order to make sense of the phoneme we must begin to think about it in the framework of the two-layered logic of duplicity. Figure 34 on page 289 is intended to represent the basic elements of the situation of the phoneme in terms of duplicitous logic using as an example the word which we represent as “see” in conventional orthography. Phonologically, the word consists of the two phonemes /s/ and /i/.

1. Jakobson touches on this colonization aspect of the phoneme in various places (especially 1968, though he does not using this word). He described the acquisition of language as a transformation from “the so-called ‘wild sounds’ of the babbling period” to “the phonemic poverty of the first linguistic stages” (p. 25). And, “the child then loses nearly all of his ability to produce sounds in passing over from the pre-language stage to the first acquisition of words, i.e., to the first genuine stage of language” (p. 21) And he cites several specific examples in child language acquisition and in aphasia which illustrate that the free expressive use of a particular sound is lost when that category of sound is dedicated to a phonemic function.
We will explore the implications of this representation in some detail, but before we do I would like to make three points by way of framing Figure 34. First, as usual I have put referential labels (“The Real Universe” and “Universe”) and descriptive words on both levels of this representation as an aid to discussing and interpreting the representation, but neither reality nor language come with labels or descriptions. As Peirce explained, the only sense in which reality is marked as distinct from illusion is by its ability to shock and surprise us. Reality, he said, is what we keep bumping into. So in thinking about the logic of the phoneme one must bear in mind that there are no labels in reality, or for that matter, in illusion.

The second point that should be made in framing this figure is that this representation, which is more or less the traditional linguistic conceptualization of the situation, is a radical oversimplification. There are many other levels and many other types of levels in the phonology of language which seem to be more or less akin to the level of the phoneme, such as the level of morphophonemic variants, the level of allophonic variants, historical and dialectal variants, stylistic variants, euphemistic variants, fast speech variants, etc. The theory of phonology which is currently dominant, the generative theory of phonology, epitomized best perhaps in Chomsky and Halle’s *The Sound Pattern of English*, has taken an explicit view of how such levels are related, namely, by rule generated derivations. In this theory the phonemic level has been argued against and abandoned, but there is much that cannot be explained by this theory, so I think one must retain an open mind.

Third, I think it is not an accident that linguists initially took the phonemic level as the basic level of representation in the realm of phonology. And I think it is a related non-accident that all sound based writing systems are either based upon the syllable or upon the phoneme. And, generally speaking, a syllabic and a phonemic system of representation are equivalent in the sense that it is possible to construct an algorithm to convert a syllabic representation into a phonemic representation and vice versa. In other words, it is possible to read either a phonemic or syllabic writing system. And that is because both phonemic and syllabic levels of representation are designed to encode the essential differences which constitute the linguistic system of representation. These facts suggest that there is a sense in which the phoneme and the syllable together constitute the central organizing level of the phonology of language. On the basis of these considerations, but without irrevocably committing to this view, we will take the phoneme as the central element of the phonology of language as an expository device in framing our exploration of the basic duplicities of phonology.

Now, I will briefly describe the basic elements of the situation of the phoneme as represented in Figure 34. I intend the images on the lower level of Figure 34, “The Real Universe”, to represent various aspects of a real speech act performed in real time where a real particular man is producing a real particular sound. The particular sound is represented here by a representation of what the sonogram of the sound might look like. (This representation of the sonogram and the other one below are from Malmberg, 1963.) I intend for this complex of images at the level of the underlying reality to represent, or at least suggest, the important aspects of the reality that underlies the phonemic level, some of which are, as we will see below, impossible to represent.

By comparison the higher level universe of discourse, Universe, is very simple, as represented, consisting only of the two letters set off by the slash marks, which is the representation of the phonemic value of the sound. In other words, /si/ is the linguistic value of the sound. And from the point of view of language, which is Universe, the linguistic value is the only value that counts. So from the point of view of language the sound is not considered to have significant value in itself. That
is, the sound represented in Figure 34, or any other sound, or anything else for that matter, necessarily has intrinsic significance on the iconic and indexical level, but these types of significance do not count on the level of conventional value. In other words, when we take a particular sound as the representation of a phoneme, we cut the sound away from its own being and its own intrinsic significance, and we saddle it with conventional significance. This is what it means in the theory of signs to take a sound as a phoneme.

Or to elaborate the metaphor of sound as the bearer of meaning, the sound is like the horse that carries the messenger who conveys the envelope which contains the message. From the conventional point of view the message is literally the significant part of the situation, so when we read it from the conventional point of view we tend to focus narrowly upon the message and ignore the envelope, not to mention the messenger, and the horse is even beneath not mentioning. Or again, the sound that conveys a phoneme is like the paper on which money is printed: from the conventional point of view what counts is the stipulated monetary value which is represented by the symbols on the paper, while the paper itself is of no value.

Thus in the situation represented in Figure 34 the normal naive speaker ignores the sound and only “hears” the sequence of phonemes, /si/. Or rather, in the normal case the naive speaker is not even aware of having heard the phonemes, for he would be focusing his attention on the meaning of the word, or on some other higher level aspect of the message. So even though he must “hear” the phonemes in order to get the message, the process is so automatic and unconscious that normally the entire level of phonology is below the awareness of the naive speaker. But if he should for some reason come to be aware of the phonology of language, his awareness will begin at the level of the phoneme, and that is why we are beginning at the phonemic level.

Perhaps this would be an appropriate place to draw back from our narrow focus on phonology to frame our observations in the larger context. If it is not obvious, it should be stated explicitly that the relation between the phonetic level and the phonemic level is not a special and unique phonological type of relation. This relation has its own particular qualities, and it fits in its own system of relations, but it is just another relation of duplicity. As we have already pointed out, on the level of the phoneme we find the same logic of the cut, the same logic of duplicity, and the same substitutive displacement, just as we have seen throughout language from the beginning. So, while the phonetic/phonemic relation has its own particular qualities, it is just another instance of the duplicity of language.

In passing I would like to suggest that it is interesting, and it will prove useful in our discussion below, to think about the duplicity of the phonology of language, the core of which is the phonetic/phonemic relationship, metaphorically in terms of the raw/cooked relationship. On the literal level these words refer to stages in the processing of food, especially meat. Apparently it is a cultural universal that animal flesh, raw meat, is considered to be inedible, or even disgusting. Therefore it is a cultural universal for people to cook meat, i.e., to transform it into a culturally acceptable form by means of a process which involves passing it through fire either directly (scorching, roasting, etc.) or indirectly (boiling, baking, smoking, etc.).

But these concepts are also used metaphorically in ordinary English, and in many other languages too. The metaphorical sense of “raw” that we are interested in is defined in my dictionary, *The American Heritage, third edition*, as

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On the Duplicity of Language (Draft of 3/5/03)

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Being in a natural condition; not processed or refined: *raw wool*

and

Not having been subjected to adjustment, treatment, or analysis: *raw data; the raw cost of production.*

The corresponding metaphorical sense of “cook” is defined thus:

To alter or falsify so as to make a more favorable impression; doctor: *disreputable accountants who were paid to cook the firm’s books*

So in the relevant sense, these terms are used quite generally to refer to a process whereby an unprocessed chunk of reality is transformed into a conventionally acceptable form. And note that, whereas the literal sense of cooking does not overtly imply falsification, the metaphorical sense clearly does imply falsification. Thus the raw/cooked metaphor has all three of the characteristics of duplicity: there are two aspects, the two aspects are in a relation of priority, and the second is false in relation to the first. Thus the raw/cooked metaphor is a type of the duplicitous relationship and as such is an appropriate way to think about duplicity in a somewhat more concrete guise. And, of course, this is why this metaphorical paradigm is so commonly used in English, and in other language, though as usual people are not commonly aware of just how common it is, so let me briefly illustrate.

Cited as an example in the above quote from the dictionary is “raw wool.” Of course, this does not mean that the wool is literally uncooked, though it is in fact uncooked, but rather that it is unprocessed. Thus the expression implies that “cooked wool” would mean wool that has been processed, i.e., spun into thread and woven into cloth. And fully cooked wool would mean “clothing.” Related to this usage by opposition, the expression “in the raw” means “naked.” Given the underlying paradigm, this implies that “cooked” would mean “clothed.” Also related are expressions such as “raw passion”, “raw emotions”, and even “raw language”, which are things that would be appropriate only when it would be appropriate to be “in the raw.” But in the public arena of life one must dress and act and talk in a civilized manner. Thus in general, to be cooked is to be civilized.

The same idea with a somewhat different accent is found in Chinese: according to Lu Xun’s *Diary of a Madman*, strangers are called “raw” people and friends are “cooked.” And so in Chinese in keeping with the cannibalistic associations underlying this paradigm, you transform strangers into friends by inviting them to eat a meal, which is, of course, cooked. So if you feed the cooked to a person who is raw, you transform him into a cooked person. And in a flash of penetrating insight the logic of this metaphorical transformation has been revealed thus:

“A Chinese person’s moral character,” observes Sun, “is determined by the mouths of others.” Mouths that speak, mouths that pronounce judgement, mouths that eat.¹

This is another way of saying, as Jacques Lacan does, that the human conceptualization of self, the human ego, the core of human identity, is an inverse of the image of the other, specifically, the vocal image of the other, which, of course, proceeds out of the mouth of the other. I incorporate myself in the image of the voice which is the index of that which provides the sustenance which goes into my mouth. Thus the mouth that eats incorporates itself in the image of the mouth that speaks.

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¹ These observations are from the Far Eastern Economic Review April 23 1987, p. 45. This quote is from *The ‘Deep Structure’ of Chinese Culture* by Sun Longji (Lung-kee Sun) Yishan Publishing Co, Hong Kong, as cited there.
At any rate, the paradigm of associations that flow from the relation between the raw and the cooked is a vast mine of insights which one could go on and on digging up. And Lévi-Strauss has done just that in *The Raw and the Cooked* and its companion volumes in his series of studies of what he called “mythlogic” - *From Honey to Ashes, The Origin of Table Manners,* and *The Naked Man.* So if one wanted to continue to explore this system of associations further, a wealth of evidence is available. But for our purposes this is enough to illustrate the generality of the idea.

The point is that just as the biologically primitive process of eating is at the root of vast systems of psychological associations, so too the raw-cooked metaphor is the prototype of a vast paradigm of linguistic associations. The associations we have touched upon here might be represented together in paradigmatic form as follows.

<table>
<thead>
<tr>
<th>raw</th>
<th>cooked</th>
</tr>
</thead>
<tbody>
<tr>
<td>naked</td>
<td>clothed</td>
</tr>
<tr>
<td>barbarous</td>
<td>civilized</td>
</tr>
<tr>
<td>stranger</td>
<td>friend</td>
</tr>
<tr>
<td>phonetic</td>
<td>phonemic</td>
</tr>
</tbody>
</table>

This paradigm becomes relevant to the present discussion because the term “raw data” is not only used in ordinary language, but it is also commonly used in scientific discourse to refer to many different kinds of unprocessed data. And of particular relevance, it is commonly use in linguistics to refer specifically to phonetic data. For example, Jakobson used it that way in the following quote:

phonetic research can provide us with valuable data on phonic matter but it is not able to tell us how this is put to use by language, how language adapts these raw materials to its own ends. (1978, p. 45, emphasis added)

And in another place he said,

The perception of sounds is dependent on uniquely those laws which convert the acoustic-motor raw material into elements with semiotic (sign-functioning) value, and therefore on the structural laws of the phonemic system, and not on the acoustic characteristics of the sound in relation to pitch and noise. (1968, p. 38)

Another example, “raw material of experience”, can be seen in the quote from Edward Sapir on page 336.

Now we come to the point. If the phonetics of language is the raw material of language then it only stands to reason that the phonemics of language must be the cooked material of language. So given the fact that linguists commonly refer to a phonetic representation of language as “raw” data, it would be natural to expect linguists to refer to a phonemic representations of language as “cooked” data. Jacobson comes close to saying that in the last quote above, but I have never heard or read of a linguist talking about a phonemic representation as “cooked.” And I think the reason is obvious: the second half of the metaphorical paradigm is avoided because it makes the falseness of the phoneme uncomfortably clear. But of course the falseness of the phoneme is exactly what we are trying to uncover here so pursuing the implications of this metaphorical paradigm can help us to highlight and to understand the duplicity of language.

And this metaphor is also useful on another level, and this is the point I want to get at here. We must bear in mind, that, while this is a useful metaphor in some ways, it is, like all representations, misleading in other ways. While the implications of this deeper point might not be clear at this
Returning to the phoneme, the first and most important point I want to make about the relation between the reality which underlies language and the phonemic level, is that it is a relation of illusion and/or projection. (The difference between these is a matter of point of view: As will become clear in the discussion below, looking at the relationship from the lower to the higher level it is one of illusion and looking at it from the higher to the lower level it is projection.) And to the extent that the illusory phonemic conceptualization of the situation takes on the aura of reality in the mind of the language user, the phonemic conceptualization is being superimposed upon the reality of the situation in the mind of the speaker and the reality tends to fade from his awareness. In this way the ordinary speaker comes to be unconscious of both the underlying reality and of the cooking process by which he “hears” the phonemes. In this way the phonemic representation of the phonological situation takes the place of the reality of the situation in the conscious awareness of the naive speaker. And so the phonemic way of looking at the situation comes to be the normal way of looking at the situation. The phonemic conceptualization becomes our preexisting agenda and it governs both our hearing and our speech.

We can represent the normal way of looking at the situation as in Figure 35, which I have derived from Figure 34 in my word processing software by pulling the lower edge of Universe $\text{Universe}^1$ down so that it covers the representation of the underlying reality. In this way I have literally superimposed $\text{Universe}^1$ upon the underlying reality. And this is exactly what the ordinary naive speaker of language does by limiting his awareness to the realm of conventional reality. Thus in the mind of the normal naive speaker $\text{Universe}^1$ comes to be regarded as the one and only universe. In short, $\text{Universe}^1$ becomes reality in the mind of the normal naive speaker.

It goes without saying, of course, that the underlying reality does not cease to exist in reality just because we banish it from our awareness. It just does not exist in $\text{Universe}^1$. Indeed nothing real could possibly exist in $\text{Universe}^1$ because $\text{Universe}^1$ is the universe of phonemes, of conventional objects, of symbols, of duplicitous things. Therefore, when we adopt a universe of discourse, or worldview, such as $\text{Universe}^1$, one which entails banishing some elements of reality, we position ourselves in conflict with reality in such a way that our universe can be sustained only at the expense of reality. Thus, although the reality which we banish from our awareness in taking such a position does

![Figure 35. The Naive (or Cooked) View of the Phonology of the Word “See”](image-url)
not necessarily cease to exist in reality, when we banish it from our universe, it begins to cease to exist in reality, for the viability of our reality is contingent upon its annihilation.

This is what Jacques Lacan meant in saying, as I quoted above on page 234,

le mot est la meurtre de la chose

And I pointed out there, Jacques-Alain Miller explained what he meant thus:

the most important accident that happened to elephants in their lives was something they never knew: that we have the word “elephant”, and that the moment we have the word “elephant” elephants begin to disappear.

Because we are now killing them, systematically. (Miller 1991, p. 30)

Here he is talking about the deleterious effect of the word on that which the word refers to, but the principle is perfectly general. And the principle is this: whenever a second thing takes the place of a first thing, they are in conflict, so the existence of the second is contingent upon the nonexistence of the first. Thus as soon as the second is established, the situation becomes tilted such that the first is already inclined toward being nonexistent. So the same principle applies to the reality which the phoneme displaces.

And Lacan explicitly asserted that the same principle holds in regard to the phoneme. In his first seminar (Miller 1988, p. 172-4, and 178) Lacan has a fairly detailed discussion of the ontogeny of the phoneme. He talks about it in terms of the role it plays in the dialectic between presence and absence in the context of the game which Freud said he watched a child play with the words “Fort/Da” (“Beyond the Pleasure Principle” SE XVIII, p. 14-17). Lacan explains that in learning to manipulate this phonemic opposition between /o/ and /a/, which mean “there” and “here”, or absent and present, in relation to the primary object of the child’s interest, which is the mother,

the child transcends, brings on to the symbolic plane, the phenomenon of presence and absence. He renders himself master of the thing, precisely in so far as he destroys it.

And he describes the mastery of the first phonemic opposition as

this original murder of the thing. (p. 174)

So the point is that, although the underlying thing is not necessarily annihilated by the process of phonemic displacement, it is inclined in that direction.

Another point about the naive point of view as represented in Figure 35 is that this process of superimposing the phonemic level upon the underlying reality is not unique: it is just another instance of the duplicity of language. However, this example of duplicity is different from some of the earlier examples we discussed, such as politeness or metaphor, in the following sense. It is fairly common for people to become aware of the duplicity of politeness or metaphor, but it is very unusual for people to become aware of the duplicity of the phoneme and of the reality underlying it. In other words, in the case of the duplicity of the phoneme the underlying level is normally entirely covered up by the subsequent level. And considering this aspect of this duplicity leads us to realize that what is going on here is what Freud called “repression.” The only difference is that the term “duplicity” focuses upon the logic of the relation while the term “repression” focuses upon the dynamic of the relation in regard to awareness.

Now, if it is granted that language consists of layer upon layer upon layer of duplicitous representations, and given that repression is just a different aspect of the same relationship as duplicity, we can also say that language consists of layer upon layer upon layer of repressed representations. And
thus, since these layers of repressed representations comprise what Freud called “the unconscious”, we can also say that language is the unconscious. Or, more precisely, we can say that the underlying layers of language which we are unaware of comprise the unconscious.

And, as I mentioned at the beginning of this section about the fact that phonology is where the rubber meets the road, what is especially important about the particular process of repression we are looking at here is that it is the most basic level of repression. In other words, most instances of repression involve a subsequent layer being superimposed upon a layer that is itself a subsequent. In short, most repression is a function of the superimposition of one representation upon another representation. But here in the lowest layer of the phonological level of language we find a representation being superimposed upon reality, specifically, the reality of the sound of the voice of the speaker, and even more fundamentally the reality of the speaker himself.

I would like to point out that we have now dug down to a level in our archeological excavation of language which allows us to see very clearly what Jacques Lacan meant by his most fundamental, and much misunderstood, dictum as to the character of the unconscious: the unconscious is structured like language. In one place (Miller, 1992, p. 32) Lacan puts thus:

> the unconscious itself has in the end no other structure than the structure of language.

In the present context the meaning of this assertion becomes perfectly obvious: the unconscious is structured like language because the unconscious is language, excepting only that part of language of which we are aware. So language and the unconscious are not two things, but are two facets of the same thing, like a tree and its branches.

And at this depth we can also begin to see what Lacan meant by another of his seemingly cryptic dicta: the voice is the primary object, what Freud called “das Ding”, or as we would say in English “the thing”, and thus the voice is the ground on which we conceptualize our language, and our identity and our worldview. We will have to dig a little deeper for this idea to become perfectly clear, and we will do so below, but in anticipation we can point out some of the main features of the voice taken as the primary object. First, it is commonly taken for granted as perfectly obvious that the sound of the voice is the basis of language. Second, in the present context it becomes clear, as we will show below, that when we take the sound of the voice as the basis of language that is already a displacement which cuts (to use Peirce’s term) the voice apart from the speaker and thereby generates the first duplicity, which is also the first repression. Third, the infant is not just interested in voices generically in the abstract (unless he becomes psychotic), but in the particular voice of the particular primary other, typically the mother, the one who is the source of satisfaction. So the infant takes the voice of the other as the sign of satisfaction. And here we see the beginning of the narcissistic logic of identification, for against the background of the infant’s systemic dissatisfaction due to his biological prematurity, the only satisfaction he gets is through his mouth from the other, so the other is the embodiment of satisfaction, and the only way he can systematically overcome his systemic dissatisfaction is by becoming the other, which he tries to do by symbolic incorporation of the other, which is the way Freud described the process of identification. And language is the medium of symbolic incorporation. Fourth, it should be noted that this basic duplicity is prior to the level of language properly speaking. As Lacan said in his first seminar in talking about the function of the voice in this earliest stage of the development of language,

> it isn’t language that I am covertly slipping in. I will even go further - not only isn’t it language, but it isn’t a higher level of language. It is in fact beneath language, if we’re talking of levels. (1988, p. 84)
The Phoneme

In terms of the theory of signs we would put this as follows: The first step in the development of language is taking the voice of the other as an indexical sign of the other, and as we know the level of indexical signs is below the level of symbolic signs, and the latter is the level of language proper.

In this regard, note that in Peirce’s theory indexical signs necessarily refer to particular things. That is, where a symbolic sign refers to a class of things, an indexical sign refers to a particular thing. For example, the word “fire” does not refer to any particular, but smoke as an indexical sign of fire necessarily refers to a particular fire. So when the infant takes the voice of the other as the sign of satisfaction, he is taking the voice of a particular other as the sign of satisfaction. Of course, once the infant has taken this voice as the sign of satisfaction, he can and will develop it further. One line of development is iconic: other voices are more or less similar to the first voice, and by comparison with other sounds, such as frogs croaking or ducks quacking, all human voices are similar. So the infant will develop a desire to hear the human voice, any human voice. Another line of development is symbolic incorporation, which results in language. So this is what Lacan meant in saying that the voice is the basis of language, identity, and worldview.

But we are getting ahead of ourselves here again, so let us go back to the main point I am trying to make about the phoneme, which is that the phoneme is not a real thing. It is a category which we superimpose, or project, upon reality. In as much as this assertion is the crux of the argument that language is essentially duplicitous, and in as much as this assertion is at odds with the prevailing idea of the phoneme, I think we should try to establish the validity of this assertion before we pursue its implications any farther. To that end I will pursue two related lines of argument in support of the assertion that the phoneme is an illusion.

1. First, in the section “The Ontological Dilemma” beginning on page 298 I will review the debate over the question of the ontology of the phoneme that took place between the “mentalists” and the “physicalists” in the formative years of the science of linguistics. I will show that the debate evolved as follows. It quickly became clear that each side of the conflict had such compelling arguments against the other that both must be wrong. In other words, it was clear from the very beginning of the debate that the phoneme could not be either a mental reality nor a physical reality. This obviously implies that the phoneme is simply not a reality at all, a possibility which very few linguists were willing to consider, and even fewer were willing to put into words, presumably because it was assumed that if linguists conceded that the phoneme is unreal, then it would make linguistics the science of the unreal, which was assumed to be an impossibility. And so, by tacit agreement among linguists the debate was abandoned and the issue was left as an unresolved dilemma at the very core of linguistic theory, and linguists just went on to do linguistics as best they could while ignoring the dilemma and assuming that somehow the phoneme must be some sort of reality that we do not yet understand. So my point is that a review of this debate makes it clear the phoneme has been known to be of dubious ontology from the very early stages of the evolution of the linguistic dialogue, and that the unwillingness to recognize this fact was not because of a lack of evidence, but because of an inability to understand how there could be such a thing as a science of the unreal.

2. Second, Edward Sapir was one of the few linguists who seriously entertained the idea that the phoneme is an illusion. In the section entitled “On the Psychological Reality of the Phoneme” beginning on page 314 I will show that, perhaps to some extent unwittingly, he gave a powerful empirical argument in support of this assertion in one of his most influential papers - “On the Psychological Reality of Phonemes.”
The Ontological Dilemma

The linguistic dialogue has been stuck since its very beginning on the dilemma posed by the fundamental ontological question, “Is language a physical thing or a mental thing, or what?” The science of linguistics came into being around the turn of the century as the point of view which argued in the scientific frame of reference on the basis of empirical evidence that the basic elements of language are phonemes, as against the conventional point of view, which holds that the basic elements of language are sounds. Thus the science of linguistics was born of the conflict over the ontology of the phoneme, and the science of linguistics stands on the ground of the phoneme, and the conflict over the ontology of the phoneme remains unresolved to this day.

Of course, the ontological issue is not limited to the level of the phoneme. It is a historical fact that the dilemma first emerged in regard to the ontology of the phoneme. And that is not just a coincidence, because as a matter of principle the ontological issue necessarily centers upon the phoneme because the phoneme is the basic building block of language. Phonemes are put together to make morphemes, and morphemes are put together to make words, and words are put together to make sentences, and sentences are put together to make dialogues. So, while one can legitimately ask the question of whether sentences are physical things or mental things, that question comes down to the question of whether words are physical things or mental things, which comes down to the question of whether morphemes are physical or mental things, which comes down to the question of whether phonemes are physical or mental things. Therefore, parallel debates about the ontology of language can and have been developed at every level of structure. But the issue is nearest to the ground of reality at the level of the phoneme because it is at the level of the phoneme where the whole vast machine of language comes into direct contact with concrete physical reality. Sound is the physical medium in which language is concretely embodied. And as one moves up the scale of structural complexity the issue does not change; it only becomes more complex, and consequently harder to understand. So the basic ontological dilemma in the context of which the discipline of linguistics came into being in the first place was the dilemma of the ontology of the phoneme, and that ontological dilemma remains as the central fixation around which the linguistic dialogue has turned until today.

In corroboration of this view of the ontological problem in linguistics consider the following statement by Roman Jakobson.

The ontological problem of what form of reality is concealed behind the idea of the phoneme is in fact not at all specific to the idea of the phoneme. It is actually one particular example of a much more general question: what kind or reality is to be attributed to linguistic values, or even semiotic values in general? Consider, for example, the smallest grammatical elements (either roots, or simple suffixes or prefixes), which are known in modern linguistics as ‘morphemes’ after the term invented by Baudouin de Courtenay. Now, if we are determined to found in psychological reality the being of a morpheme, and of morphemes in general, of a segment of discourse and of discursive segments in general, the being of a syntactical rule and of syntactical rules in general, and ultimately the being of a given language and of language in general, in short if we are determined to found in psychology the being of linguistic values and their systems, then eo ipso we are equally compelled to accept the purely psychological basis of the phoneme and of all phonological value. But if we consider all these linguistic values to be social, as being the products of culture, then the phoneme is automatically subjected to this same kind of interpretation. Finally, a scientist who takes the idea of value to be a methodological convention, a sort of fiction, simply a kind of heuristic device (i.e., to be a presupposition which is a necessary condition for scientific analysis), and who attributes no objective reality to this ideal of value, such a scientist would have also to treat the idea of the phoneme in the same manner. (Jakobson 1978, p.53-53)
As I said, the linguistic point of view was born as a consequence of the successful argument that it is the phoneme that is the fundamental element of language, not sound. The linguistic point of view was born of the victory of establishing the existence of the phoneme, so the idea of the phoneme was the seminal concept which framed the point of view of the discipline of linguistics. But by the victory of establishing the existence of the phoneme linguistics acquired the obligation of making sense of the phoneme. This obligation generated a divisive debate within linguistics at its very beginning between those who argued that the phoneme is a physical thing and those who argued that it is a mental thing, and those who argued that it is a fiction. The earliest overview of the argument, as far as I am aware, was by W. Freeman Twaddell in his classic “On defining the phoneme”. So, in as much as the basic parameters of the issue have not changed since the beginning, I will frame the ontological argument in terms of Twaddell’s discussion.

Twaddell begins by characterizing the central conflict of the debate thus:

The definitions of the phoneme which have been proposed fall into two general groups: definitions in terms of a mental reality, and definitions in terms of a physical reality. (p. 56)

Then he goes on to discuss some of the many definitions which had been proposed for each point of view, and he cites the arguments which each side gave against the other. Then he judges, rightly in my view, that the counter arguments which each side cited against the other are compelling, and thus he concludes that neither view can be right. Therein lies the crux of the dilemma which has plagued linguistics since its very beginning.

Let us briefly review the horns of the dilemma. First, looking at the “mentalist” horn, Twaddell surveyed the various definitions of the phoneme that had been offered by Baudouin de Courtenay, N. S. Trubetzkoy, Edward Sapir, etc., about which he says,

All these definitions agree in the ascription of mental reality to the phoneme, and for me thus fail to meet the requirement of methodological feasibility, i.e., they identify an entity which is inaccessible to scientific methods within the frame of linguistic study. (p. 57)

And he characterized this point of view as linguistic-scientific fiction.

Citing Bloomfield’s arguments against the mentalist point of view, with which he agreed, he condemned the mentalist line of argument as follows.

The procedure of pretending to explain phenomena by giving mentalistic names to their previously unnamed and still unknown causes ‘short-circuits inquiry’ until some investigator perceives the fraud and returns to the study of phenomena and their correlations. (p. 57)

He thus considered the “mentalist” point of view to be untenable as a matter of scientific principle because of the lack of empirical foundation in “phenomena”. And he thus considers the idea that phonemes are mental things to be “science fiction”, and even “fraud”, in the sense that it leads the linguistic enterprise astray.

1. Language Monograph No. 16 - 1935 and reprinted in Joos, *Readings in Linguistics*, 1963 p. 55 - 80. I use the latter reference in this discussion. Most of the major articles in this debate were reprinted in Joos.
Then, turning to the other horn of the dilemma, Twaddell looked at some of the “physicalist” definitions of the phoneme, mainly that of Bloomfield, some variant of which is the view held by most linguists today.¹ The physicalist point of view holds that a phoneme is not exactly the same as a physical sound, but that it is somehow derived from some aspects of physical sound, and consequently, that the phonology of language is a function of the properties of sound. This view holds that the acoustic signal which conveys language is a complex consisting of some features that are distinct in regard to the phonological structure of language and some features of which are not distinct, and that the phoneme is embodied in those features of sound that are distinctive. Twaddell quoted Bloomfield thus:

> Among the gross acoustic features of any utterance, then, certain ones are distinctive, recurring in recognizable and relatively constant shape in successive utterances. These distinctive features occur in lumps or bundles, each one of which we call a phoneme....the phoneme features will be present in the sound waves...The phonemes of a language are not sounds, but merely features of sound which the speaker has been trained to produce and recognize in the current of actual speech-sound - just as motorists are trained to stop before a red signal, be it an electric signal-light, a lamp, a flag, or what not, although there is no disembodied redness apart from these actual signals. (p. 61)

Then Twaddell notes that in regard to this analogy of the stop signs, although the various kinds of stop signs are different as to physical substance and shape,

> all these signals do possess a characteristic peculiarity which is constantly associated with their ‘redness’, viz. the property of emitting or reflecting to the eye of the motorist photo-magnetic impulses in which the wave-lengths around 670µµ predominate.

Therefore, as Twaddell points out, this analogy implies that

> a corresponding constant characteristic is a property of every occurrence of a phoneme.

In other words, the basic idea of the physicalist theory of the phoneme is that just as a particular color, like redness, is manifest as a particular range of frequencies of light waves, so too is a particular phoneme manifest as a particular frequency of sound waves, or similar constant physical characteristic. Although this is the idea of the phoneme which the physicalists would like to be true, it is so obviously false to anyone who is familiar with the phonology of language, that it was, and still is, impossible to maintain this straightforward physicalist position. The fact is that there is no particular property of sound that is a constant characteristic of every occurrence of a particular phoneme in the same sense as there is a particular property of light that is a constant characteristic of a particular color. The analogy simply does not stand up to empirical evidence.

> Because he knew that this straightforward idea of the physical basis of the phoneme was untenable, Bloomfield made his definition more complicated by defining the phoneme not just in terms of one or two or three specific characteristic acoustic features for each phoneme, but in terms of a grammatically peculiar concept, “minimal same of vocal feature”, a concept which no one has been able to make sense of. And on top of that he added the incomprehensible concept of “acoustic fractions”. After wading through these various confusing ways Bloomfield complicates the idea of a distinctive phonetic feature, Twaddell summarizes the physicalist case as put forth by Bloomfield thus.

¹ I am aware that most linguists today subscribe to the view of this issue that was initially framed by Jakobson and Halle’s *Fundamentals of Language*, 1956, but I contend that their conceptualization of the ontology of the phoneme was essentially the same as Bloomfield’s, which, citing the above quoted analogy of redness, they characterize as “the most appropriate” (p. 9). More about this below.
Despite the difficulty of arriving at any clear formulation of these uses of ‘feature’, it appears that as Bloomfield defines the phoneme, it is a constant, characteristic fraction or combination of fractions of acoustic events. (p. 63)

In spite of these terminological complexities, no matter what he means by “feature”, Twaddell reasons that it follows from Bloomfield’s definition that

On every occasion which corresponds to a [t] in his transcription, we should find in the acoustic record some constant, characteristic fraction of sound-waves.

And Twaddell correctly dismisses this absurdly complex attempt to circumvent the obvious facts thus.

That we do not find any such constant, characteristic fraction is of course a commonplace of experimental phonetics.

And, of course, Bloomfield also knew at the time he was elaborating this evasive theoretical complexity that the facts were against him, but at the same time he was firmly convinced that the mentalist point of view was scientifically untenable. So to keep from conceding that the facts were against him and thus conceding the odiously unscientific mentalist view, Bloomfield indulged in a little obfuscatory complification of the concept of “distinctive feature”, an argumentative device that is not unknown in defense of the physicalist position in the modern phases of the ontological debate.

And yet, illogically, at the same time he implicitly conceded that he knew that the facts were against him in trying to explain why the facts did not support his view. The explanation which Bloomfield offered for the well known fact that no one was able to find these hypothecated physical characteristic of the phoneme was that the laboratory machinery that was available for the analysis of sound at that time was inadequate. Twaddell quotes Bloomfield to this effect thus.

The physical (acoustic) definition of each phoneme of any given dialect can be expected to come from the laboratory within the next decades. (p. 63)

In other words, Bloomfield wanted to hold on to the physicalist theory of the phoneme in the face of evidence to the contrary on the basis of the desire and the hope that future “laboratory” developments would bring empirical evidence to corroborate the physicalist view. Many linguists still cling to this same hopeful position.

However, as Twaddell correctly points out there is a question of what he called the “propriety” of basing a theoretical position upon a discovery which is envisaged only as a future possibility. (p. 63)

What is more, Twaddell surveyed the “laboratory” capabilities that were available at that time, and he pointed out that the hope for future corroboration was ephemeral.

The laboratory situation appears, then, to be as follows: We know the range within which the distinctive features must lie; we have records covering that range. Yet those records do not reveal any constant characteristic of soundwaves (an acoustic feature) for each phoneme: even with the acoustically relatively simple vowels the so-called ‘formants’ are only proximately determinable, and within very wide ranges. (p. 63)

Therefore, Twaddell concludes:

The only legitimate conclusion at the present appears to be that the presence of ‘phoneme-features’ as positive, additive entities in the sound-waves is not demonstrable, and there is no reason to believe that it will be.(p. 63)
And let us note for the record that the hoped for physical properties of the phoneme, analogous to the physical properties of redness, have not been found to this day. And so I think one must conclude that there is nothing more than the desire that it should be so to support the belief that such physical properties will ever be found.

I would like to complement Twadell’s negative argument by pointing out that there is a great deal of positive evidence which contradicts the physicalist position. And we did not have to rely on any sophisticated laboratory developments to discover them because they are perceptible to the naked ear. Consequently these contradictory facts were common knowledge among linguists at the time Bloomfield put forth the inadequate knowledge defense.

Let us consider just one simple and obvious example of the kind of fact which confounds the physicalist view. With the naked ear one can easily hear the difference between the sound of the phoneme /t/ in “ton”, which is an aspirated voiceless alveolar stop, and the phoneme /t/ in “stop”, which is an unaspirated voiceless alveolar stop. The problem is that these two phonetically different sounds are manifestations of the same phoneme. The question is how is it logically possible that different things can be the same thing. The physicalist answer is that they are physically different as to redundant features but physical the same as to essential distinctive features. So the phoneme is a class of sounds that have the same distinctive physical feature. So in this case the two sounds belong to the same phoneme because they are both alveolar and they are both voiceless and they are both stops. But they are different in the incidental feature of aspiration. So the physicalist idea is that the phoneme /t/ is the class of sounds that are voiceless, alveolar, and stops.

But then we come to the word “button”, where the /t/ is pronounced, in my dialect, as a glottal stop [b@/n]. The problem now is that the above sounds and this sound have no physical characteristic in common except interruptedness and possibly voicelessness, which features they share with /p/ and /k/, and which therefore cannot be the distinctive features of the phoneme /t/. Therefore, one must conclude that, although the /t/ in “top” and the /t/ in “button” are the same phoneme, they do not share a common basis in the physical properties of sound. They are physically different sounds, different sounds that belong to the same phoneme in English, so no acoustic analysis could possibly discover otherwise. And thus the hope that a common acoustic basis will be found in the future to justify the physicalist theory of the phoneme is just a way of evading the conclusion that one cannot explain the phoneme as a function of the physical characteristics of sound. The plain and simple fact is that you cannot get from judgements of sameness and difference in the realm of physical sound to the relevant judgements of sameness and difference in regard to phonological (or any other) elements of language.

To forestall the possibility of misunderstanding, I should perhaps make it clear that I am not asserting that there is no relationship between physical sound and the phonology of language. We know that there must be some relationship because at least sometimes when we say something like, “Can you pass the salt?”, we actually get the salt. That is, sometimes we manage to convey a message by means of sound. That is, it works. Sometimes.

But such pragmatic success does not prove that there is a direct correlation in language between the physical characteristics of the sound signal and the meaning that is conveyed, analogous to the direct correlation between the physical signal of redness and the command to stop that is conveyed by redness. The difference is this. Whenever redness is used to convey the command to stop, the same physical characteristics are present in the visual signal. Or to put it the other way around, if one wants to convey the command to stop via the sign of redness, one must embody the command in
a physical medium which has the same physical property, namely, redness. If a sign does not have the physical properties associated with the perception of redness, then that sign will not convey the command to stop in terms of the color red. The same is not true of the phoneme: It is a fact of common knowledge that different acoustic signals sometimes convey the same phoneme, and that the same acoustic signals sometimes convey different phonemes. Thus, although there is some kind of systematic relationship between phoneme and physical sound, the relation is not systematic from the point of view of sound. However, it has been shown repeatedly in various ways throughout the history of linguistics that the relation is systematic from the point of view of phonological structures. That is, given phonological structures, of which the phoneme is the basic element, one can predict the shape of the sound. So to make sense of the function of sound in language we must begin with the phoneme. The use of sound in language is a function of the phoneme, not the reverse. So the conclusion is that the phoneme is not actually an element of sound, and we are back at the original question of just what sort of thing the phoneme is.

Having arrived at this conclusion, then, we have established the two horns of the dilemma. As Twaddell put it:

All attempts to associate the term 'phoneme' with either a mental or a physical reality appear open to serious, if not unanswerable objection. (p. 67)

And to make it explicit the dilemma is this: the phoneme is either a mental reality or a physical reality, and it is not either a mental reality nor a physical reality.

Now, when one gets to this point in this line of reasoning, when one has faced the fact that both the “mentalist” and the “physicalist” views are dubious, and when the logic of the dilemma is explicitly stated like this, it becomes quite clear that the dilemma is framed in and follows from the first sentence above. In other words, the dilemma is framed by the law of the excluded middle. It is this underlying premise, this normally unspoken premise, which structures our thinking in terms of two mutually exclusive alternatives and which therefore channels our thinking into this dilemma.

This dilemma is not often considered by linguists nowadays, of course, because the ontological issue is considered to have been settled long ago, or it is considered to be irresolvable, or it is considered to be unimportant. But in any case, it is seldom revisited. And when the ontological issue was being actively debated back in the formative years of linguistics, it was usually treated superficially and brusquely, as we saw in Twaddell’s discussion above, so the debate rarely got down to the level of questioning the philosophical and scientific presuppositions which underlie the common scientific worldview. One of the few exceptions to both of these rules was Roman Jakobson, who struggled with this issue throughout his career, and this is exactly the view which he voiced in 1942 during the heat of this debate.

Very strange though it is, those linguists who study the phoneme are especially inclined to debate its mode of existence. They thereby concern themselves with a problem of which the solution must obviously be found elsewhere than in linguistics. (1978, p. 52)

And further,
With very few exceptions, the linguists’ discussion about the essence of the phoneme has merely repeated the
famous philosophical debates between the nominalists and the realists, between the adepts of psychologism and
those of antipsychologism, etc.; moreover it has been conducted with inadequate means. (p. 53)

This, I believe, is the commonly held, albeit unspoken, theoretical position which emerged from the
formative ontological debates and which prevails as mainstream linguistics today.

Thus linguists generally assume this premise:

**THE PHONEME IS EITHER A MENTAL OR A PHYSICAL REALITY.**

And linguists generally assume that the validity of this premise, and the ontological issue in general,
is an issue that belongs to physics or biology or psychology or philosophy, or something, but not lin-
guistics. Linguists assume, in other words, that the disciplines of physics, biology, psychology, and
philosophy, are more basic than the discipline of linguistics. Linguists assume that the basic frame-
work of the scientific worldview is already fixed in place before we get to language. Linguists
assume that the inquiry into language must be conducted within a framework that has already been
established by the prior authorities, and that the facts of language do not bear upon the question of the
validity of the basic scientific premises.

But, of course, this is precisely the belief which we are trying to bring into question in this
book. Is language upstream of our common conceptualization of the world or is it downstream?
Should we try to understand language in terms of our common conceptualization of the world or
should we try to understand our conceptualization of the world in terms of language? Should we try
to understand the ontology of language in terms of our common conceptualization of the world or
should we try to understand the ontology of language and the world in terms of language?

If we reframe the ontological issue in accord with the point of view we have been trying to
establish here, where language is prior to or integral with our conceptualization of the world, where
the facts of language have at least as much weight as any other kinds of facts, where the theory of lan-
guage is at least as primitive as any other kind of theory, then the obvious solution to the ontological
problem is to complete the syllogism as follows.

**IF THE PHONEME IS EITHER A MENTAL REALITY OR A PHYSICAL REALITY,**
**AND IF THE PHONEME IS NEITHER A MENTAL OR A PHYSICAL REALITY,**
**THEN THE PHONEME IS NOT A REALITY.**

As anyone familiar with Twaddell’s argument knows, this is precisely the conclusion to which he was
led by the plain facts in conjunction with the inexorable logic of the ontological dilemma.

It may be that before it is appropriate to answer or even to ask the question as to the nature of the reality associ-
ated with the term ‘phoneme’, we should first ask and answer the question whether the term can be profitably
associated with any reality at all. It is what might be called the thesis of this paper that it is inexpedient and prob-
ably impossible (at present) to associate the term with a reality: probably impossible, because the attempts by
competent and conscientious linguists to define the phoneme in terms of reality have not been wholly satisfac-
tory; inexpedient, because the purposes to which the term may be put in our discipline are served equally well or
better by regarding the phoneme as an abstractional, fictitious unit. (p. 67)

This is also, of course, the view which naturally follows from our basic premise that language
is intrinsically duplicitous. Everything in language is duplicitous, which is to say that everything in
The Ontological Dilemma

language is fictitious in the particular sense in which duplicities are fictitious, and this would include the phoneme, as well as the morpheme, the word, the sentence, etc.

Further, not only are the elements of language duplicitous fictions, but the ontological dilemma which is at the heart of linguistic theory is itself a function of the duplicitous nature of language. It is this paradox of the ontology of the phoneme which is at the foundation of linguistic theory, and which has confused and frustrated the linguistic dialogue from its beginning, and which continues to confuse and frustrate the linguistic dialogue today, for in the mainstream linguistic dialogue the dilemma still has not been resolved. Therefore, in order to understand the evolution and structure of the linguistic dialogue, and in order to understand how the present argument relates to the linguistic dialogue, one has to look at the linguistic dialogue as a function of this dilemma. Let us, then, consider the linguistic dialogue as a function of this dilemma.

The Strategic View of the Dilemma of Intersubjectivity

In order to situate this dilemma in relation to the duplicity of language, let us take a parenthetical detour from the immediate line of reasoning so that we can step back to look at the dilemma in general and how it influences our behavior. First, let us note that the effect of a dilemma on our behavior is generally problematic. And the reason that it is problematic is that whenever we run into a dilemma in the course of any undertaking, the dilemma traps our thought processes in a conflict, a seemingly inescapable and useless conflict. A dilemma prevents us from making progress in our endeavor by limiting our thought process to a useless oscillation between two alternatives, both of which are impossible. A dilemma is a problem in that it inhibits our freedom of movement in thought and in deed, and therefore inhibits our ability to gain satisfaction in our undertaking. Therefore, to be in a dilemma is to be in a situation which is unsatisfying, and interminable. So a dilemma imposes the dynamic of struggle upon a situation, two phases or levels of struggle: There is the useless struggle between the two impossible alternatives within the framework of the dilemma, and there is the struggle to escape from the dilemma. And so an enterprise which has gotten caught in a dilemma is stuck in the static phase of useless oscillation until we try to escape from the dilemma. In other words, the situation does not change until we try to escape. Therefore, in regard to the present case, we can analyze the evolution and structure of the linguistic dialogue in terms of the various ways linguists have tried to escape from the dilemma of the ontology of language.

Second, I would like to point out that the study of the technology of dilemmas, and the ways people try to escape from them, is not by any means new. Various schools of thought have undertaken the study of “dilemma-ology” more or less independently from different points of view without being aware of the fact that they have been studying the same thing because they were not able to look at what they were doing from the very deep and general perspective which emerges from the awareness of the generic duplicity of language, and the awareness of the central role language plays as the very matrix of human dilemmas. For example, there are two different schools of thought which consider the dilemma to be the root of human psychopathology and which try to make sense of human behavior as a function of the conflictual dynamic imposed upon situations by dilemmas, but these two schools do not seem to be aware of their common ground in the dilemma. One of these schools of thought is Freudian psychoanalysis, which evolved from the medical point of view. And the other school of thought is based on the double-bind theory of the etiology of psychopathology - a
double-bind being a dilemma - as originally formulated by Gregory Bateson. This school of thought
evolved from the point of view of communication theory.¹

There is another school of “dilemma-ology”, also commonly considered to be unrelated,
which has evolved from the point of view of military strategy. This point of view has emerged from
the realization that the dilemma is the essence of strategy, in military conflict and in general. Whereas
force and speed are the stuff which tactics uses to attack the body of the enemy directly, the dilemma
is the stuff which strategy uses to attack the mind of the enemy, and, through the mind, the body of
the enemy. The dilemma is the weapon of strategy. And the fundamental principle of strategy is to
impose dilemmas upon the enemy, while remaining free of them oneself. One tries to impose dilem-
mas upon the enemy in order to divide him (Divide and conquer), and to entangle him in confusion,
so as to sap his ability to function and inhibit his freedom of movement. And at the same time, one
tries to retain unity and to exercise, or preserve the ability to exercise, total freedom of movement in
thought and deed for oneself by avoiding the strictures and divisiveness of dilemmas.

Although successful practitioners of military strategy have always been at least intuitively
aware of the essential role of the dilemma, for it is their use of the dilemma which has made them
successful, the first modern scholarly analysis of the central role of the dilemma in military strategy
was Liddell Hart’s *Strategy*, which shows that the dilemma was the key element of every clear cut
strategic victory throughout the history of warfare from Alexander the Great to Caesar to Belesarius
to Napoleon to Vietnam. He did not generally use the word “dilemma” as a technical term, but rather
the related notion of the “indirect attack” (which is opposed to the “direct attack”). The two concepts,
however, are two sides of the same coin: The term “indirect attack” focuses upon the method of
attack which imposes a dilemma upon the enemy, where the term “dilemma” focuses upon the situa-
tion that is created by an indirect attack. That Liddell Hart was aware of the fact that the indirect
attack functions by means of the imposition of a dilemma is evident from his analysis of the effects of
the indirect attack. Further, in discussing the theory of strategy, Liddell Hart did used the term,
“dilemma”, quoting Sherman’s famous maxim which prescribed

putting the enemy on the horns of a dilemma. (p. 331)

The role of the dilemma in the logic of military strategy was more fully and explicitly
explored in a recent work by the noted military strategist Edward Luttwak (1987), where he
observed:

the entire realm of strategy is pervaded by a paradoxical logic of its own, standing against the ordinary linear
logic (p. 4)

He introduced the logic of the strategic paradox in terms of this simple hypothetical example.

Consider an ordinary tactical choice, of the sort frequently made in war. An advancing force can move toward its
objective on one of two roads, one good and one bad, the first broad, direct and well-paved, the second narrow,
circuitous, and unpaved. Only in the conflictual realm of strategy would the choice arise at all, for it is only if
combat is possible that a bad road can be good precisely because it is bad and may therefore be less strongly held

1. See “Towards a theory of schizophrenia” and related essays in Bateson (1973). For subsequent development of the the-
tory see Reusch (1972) *Disturbed Communication: The clinical assessment of normal and pathological communicative
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or even left unguarded by the enemy. Equally, the good road is apt to be bad because it is the better road, whose use by the advancing force is more likely to be anticipated and opposed\(^1\). (p. 7, emphasis in original)

Although Luttwak is speaking hypothetically here, if we take “road” in the general sense as a path or way, this exact tactical choice has actually figured as the decisive strategic issue in many famous historical battles, as Liddell Hart has shown. Indeed, taking the “bad”, or the unexpected road is the essence of the idea of the “indirect attack” which Liddell Hart argued is the key to strategic victory. To illustrate, one of the classic examples of strategic victory took place in 1762 during the Seven Years War when British forces led by commander Wolfe defeated French forces holding the virtually impenetrable city fortress of Quebec and thus gained Canada for the British empire by attacking via the steep cliffs at the back of the city, which the French thought impossible, and therefore had not defended, rather than by way of the main road. Luttwak shows how the dilemma of the “good bad” way in an even more general sense has governed the evolution of various kinds and levels of military conflict, such as the technological battle that has been going on for some fifty years in the arena of radar and radar deflecters and radar detectors and radar deflector detectors and radar detector detectors, etc.

However, instead of pursuing the very interesting inquiry into the various ways in which this strategic dilemma is played out in the arena of military interaction, or political interaction, let us return to examine the underlying logic of the elementary example of the choice between the good road and the bad road. We should note that a choice such as this does not necessarily pose a dilemma\(^2\). Such a choice becomes a dilemma only in the context of a relation of antagonistic conflict with another living being, because it is the potential for intersubjective duplicity on the part of a living antagonist which creates the framework in which the judgement of goodness is separated from objective fact so that it can oscillate between the two intersubjective points of view. And of course only living beings are capable of becoming entangled in the intersubjective logic of the dilemma, because a rock, for example, is incapable of taking the bad road. So the dilemma in such a situation of choice arises from the fact that each of the two parties must judge if the good road is good or bad, not as a matter of objective fact as one might determine from an engineering or economic point of view, but as a matter of subjective judgement, and the judgement of each of the parties is at least in part dependent upon the other’s judgement, and the other is a living and intelligent enemy who can choose to decide either way and whose purpose in choosing is to deceive the other and to thwart his intentions\(^3\). Looking at the strategic judgements from the point of view of the attacker, if the attacker knows that the defender thinks the good road is good, then that makes the good road bad for the attacker. And if the attacker knows that the defender thinks that the attacker thinks that the good road is bad, then that makes the good road good for the attacker. So the good road can be good at two levels of analysis: it can be objectively good, and it can be strategically good because the other thinks it

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1. Note that this is the same kind of reversals of polarity found in ordinary language, as I mentioned at the beginning of Chapter 1, where denial implies affirmation, praise implies criticism, and where the word “bad” means good.
2. I can’t resist mentioning Yogi Berra’s advice in this regard: “If you come to a fork in the road, take it!”
3. This is the inverse of the coordination problem in game theory, which, in the context of cooperation, is the conceptual frame of reference from which conventions emerge. The objective of the coordination problem in the context of cooperation is to arrive at the same solution to the problem of choice so that the two parties can have a meeting of the minds on the same terms. The objective of the coordination problem in the context of conflict is to arrive at the other solution so that you can meet the other party in a way that he does not expect. See the discussion of the role of the coordination problem in the logic of conventions in Lewis1969
is bad. And, of course, the good road can be bad at two levels of analysis too. And so on and so on in a theoretically unending spiral of intersubjective reversals of polarity where the judgements of the two parties interact with each other in the manner of a dialogue that generates an escalation of paradoxical possibilities that quickly becomes mind boggling and impossible to keep track of.

However, it is easy to sort out the logic of the layers of contingent intersubjectivity which comprise the strategic dilemma when one keeps track of them in terms of the logic of duplicity, because, I am claiming, such contingent intersubjectivity is an instance of the duplicity of signs. In regard to this claim, recall that in Chapter 2 we demonstrated that the realm of strategy is the same as the realm of signs and the same as the realm of duplicity. Therefore the goodness of the road as a strategic value judgement is of an entirely different order than the goodness of the road as an engineering value judgement. The strategic judgement that the good road is bad is contingent on the judgement of the other, which may or may not conform to reality. Therefore the strategic proposition that the good road is bad is valid only in the realm of the play of intersubjective contingencies. And whether the good road is considered to be good or bad in the intersubjective context, it has no bearing whatever on the reality of the situation. In reality, no matter what anyone might think, the good road is simply the good road in its natural function as a road, i.e., as a way to get from point A to point B. The logic of this strategic paradox is represented in our paradigm of duplicity in Figure 36 on page 308.

FIGURE 36. The Strategic Paradox

If the attacker knows that the defender thinks
the good road is bad
then for the attacker
The good road is good

If the attacker knows that the defender thinks
the good road is good
then for the attacker
The good road is bad

The good road is good

Note that the lowest level judgement is of a different order than the two levels of judgement that are suspended in the space of intersubjectivity. And note that, although one of the contingent judgements is more contingent than the other, they are both contingent. And note also that in the sort of conceptual frame of reference depicted here it is possible for two people to say the same thing, e.g. “This is the good road”, referring to the same road in the same physical context at the same time, and yet be intending to convey totally different ideas. In one sense this statement is an objective evaluation and the other sense it is an intersubjective evaluation.

One might suppose that such bizarre logical characteristics are no more than abstruse curiosities, which might be interesting to a professional logician, but which are of marginal relevance to real
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life, or to the present issue. But I contend that this bizarre logic is the very heart of the ontological dilemma of linguistic theory, and of language itself, and consequently, of the generic human problem. A concrete and detailed example of this situation in the phonology of language can be found in the section “Sapir’s Fourth Example of Phonemic Illusion” beginning on page 324.

Now that we have the logic of the dilemma laid out in front of us, the logic which I am claiming is at the heart of language, I can simply and precisely state the point I am trying to make in this present discussion about the ontology of the phoneme thus. In principle, the sentence, “This is the phoneme /t/”, used in reference to a particular segment of sound, is ambiguous in the same way as the sentence, “This is the good road” in reference to a particular road. It can be taken as a judgement of objective value, as an engineer might be qualified to determine, in which case it is a statement about the phonetic value of the phoneme /t/. Or, it can be taken as an attribution of intersubjective value, as only a speaker of a language would be qualified to assess, in which case it is a statement about the phonemic value of the phoneme /t/. And it is my contention that the former is the kind of thing that is intended when one says, “This is red”, but the latter is the kind of thing that should be intended when one says, “This is /t/.” Thus I am claiming that redness is an objectively determinable characteristic of light, whereas /t/ is a subjective judgement about sound. The right kind of light is red, but the right kind of sound represents /t/. So “This is red” is an assertion about the real physical world, whereas “This is /t/” is an assertion about the world of intersubjective contingencies, as represented in Figure 36.

From this point of view we can see that the phoneme is not a physical entity, nor does it consist of elements, such as distinctive features, that are themselves physical entities. The phoneme is not in the sound, nor is it a property of sound. A phoneme is an abstract idea which is represented by sound. When we talk about a phoneme, we evaluate the phonological referentially of sound in relation to a particular intersubjective frame of reference.

Thus sound has the same relation to a phoneme as wood had to the Trojan Horse: The idea of the horse was represented in the medium of wood, but it would be a radical misunderstanding to think that the horse, or a horse, or the quality of horse-ness was actually in the wood. In the same way, the phoneme /t/ is represented in the medium of sound, but it would be a radical misunderstanding to think that the phoneme /t/, or an instance of the phoneme /t/, or the quality of /t/-ness was actually in the sound. Just as the wood was shaped so as to convey a reference to the idea of the horse, so also the sound is shaped so as to convey a reference to the idea of the phoneme /t/.

With these observations in mind, then, let us bring the various threads of the discussion together so as to describe the point of view from which we are going to look at the linguistic dialogue. Focusing upon the representation in Figure 36, when the logic of the strategic dilemma is displayed in this format one can readily see that it is exactly the same as the logic of duplicity. Indeed, the point I want to make is that the logic of representation is the logic of duplicity, and vice versa. It is this sameness in underlying logic that leads me to suppose that the various disciplines of study which try to make sense of human behavior as a function of dilemmas and paradoxes are variants of the same underlying idea. This sameness in logic is the basis of my claim that the psychoanalytic point of view, the communication theory point of view, the strategic point of view, and the duplicitous point of view are essentially the same. And, as is no doubt obvious, I am suggesting that this is also the point of view that linguistic theory must take.

These various points of view only differ in that they have emerged from different universes of discourse, which is to say that they differ in vocabulary and focus. The words “dilemma” and “dou-
ble-bind” focus on the pragmatic stricture of a situation that is framed by intersubjective duplicity. The word “paradox” focuses on the logical contradictoriness of a situation framed by intersubjective duplicity. The word “conflict” focuses on the dynamic of struggle in thought and behavior that is characteristic of a situation that is framed by intersubjective duplicity. And the word “duplicity”, as we have seen, focuses on the doubleness and falseness of the language that frames and structures the conceptualization of the situation. And, to clear up one last terminological complexity in regard to the relationship between these various points of view, all duplicity is intersubjective duplicity, and vice versa. And further, all intersubjectivity is duplicitous, and vice versa. In other words, duplicity is necessarily a relation between two subjects, and a relation between two subjects is necessarily duplicitous. Another way to put this: You cannot engage in a strategic interaction with a rock, you cannot deceive a rock, and a rock cannot deceive you. You can only transact duplicitously with another entity that is itself a subject. Therefore, paradox, conflict, dilemma, and the realm of intersubjective interaction are merely different facets of the kind of situation that is generated by the duplicity of language.

So in sum, the point I am trying to make in this parenthetical detour is that in order to make sense of human thinking and human behavior, including language, and the linguistic dialogue, one must look at it not only from the objective engineering point of view, but from the duplicitous point of view, which includes both the objective point of view, and the point of view of intersubjective duplicity. Or, simply put, one must look at it from the duplicitous point of view. Therefore, the point of view that we will take in looking at the linguistic dialogue as a function of the ontological dilemma is the duplicitous point of view, which we are in the process of developing. Let us then return to consider the linguistic dialogue from this point of view.

In view of our purpose here, which is not to sort out all of the complex twists and turns of the linguistic dialogue since the turn of the century, but to orient our position in relation to the linguistic dialogue in general, I will briefly discuss the views of three prominent observers, Peirce, Jakobson, and Sapir, which I believe corroborate the notion that the phoneme is a fictitious entity. I will discuss the views of Peirce and Jakobson in this section, and Sapir in the next.

Let us begin with Peirce. In terms of Peirce’s theory of types it is clear that the elements of language, such as words and sentences are signs of the symbolic type, rather than of the iconic or indexical types. Given this fact, and given that, in keeping with the reasoning of Jakobson cited above, the ontology of the phoneme is the same as that of the word and the sentence, then it follows that the phoneme is also a symbolic sign. And Peirce makes it quite clear that a symbolic sign is not an entity of any kind in the usual sense. Consider this.

A Symbol is a Representamen whose Representative character consists precisely in its being a rule that will determine its Interpretant. All words, sentences, books, and other conventional signs are Symbols. We speak of writing or pronouncing the word “man”; but it is only a replica, or embodiment of the word, that is pronounced or written. The word itself has no existence although it has real being, consisting in the fact that existents will conform to it. (2.292, italics in original)

1. Note that both words literally refer to the doubleness of the situation. This reference is obvious in “double-bind”. One has to look into the etymology of “dilemma” to see the doubleness: It was borrowed from Greek, “di-” meaning “two” and “lemma” meaning “proposition”
Note that if we distill this statement down to its essence it is this: a symbol, hence a phoneme, is a rule. And when we say that we pronounce a certain word, or phoneme, that is merely an elliptical statement, for the fact is that we pronounce a specific embodiment of the word, or phoneme. Thus on one hand, it is impossible to pronounce a word, or a phoneme. And on the other hand, it is impossible to pronounce the same sound two different times.¹ When we say that two sounds, A and B, are the same phoneme, we do not, indeed we could not possibly mean that they are the same sound, but rather we mean to say that they are considered to have the same representational value. They are embodiments of the same category of value, as for example, two different one dollar bills are considered to be the same. They are fungible.

A symbol, as we have seen, cannot indicate any particular thing; it denotes a kind of thing. Not only that, but it is itself a kind and not a single thing. (2.301)

A symbol is a sign which refers to the Object that it denotes by virtue of a law, usually an association of general ideas, which operates to cause the Symbol to be interpreted as referring to that Object. It is thus itself a general type or law...As such it operates through a Replica.(2.2490

Thus when one looks at the phoneme, or any other element of language, from the point of view of sign theory, it clear that a phoneme is not a thing, but a kind, or type. It is neither a mental nor a physical thing, but a category of things. And a category is not a thing. As Peirce makes clear, a phoneme is also a rule or law in that it demands that “existents conform to it”. And before we go on let me make it explicit that Peirce is asserting that a kind or type or a category is a rule or law. Not, of course, the same type of law as the law of gravity, but rather the type of law that obligates or demands, i.e., conventional social law. So a phoneme is an element of social law which stipulates how “existents will conform to it”, or in other words, it is a law about how existents will be evaluated in the future.

Let us turn now to Jakobson’s view of the ontology of the phoneme. First, it must be noted that Jakobson’s views are not as unambiguous as Peirce’s. In fact, as far as I can tell, he seems to harbor contradictory views throughout his career. On one hand, Jakobson feels compelled to posit some kind of “objective” existence to the phoneme, in order to account for its predictable role in language, and on the other hand he feels compelled to recognize that in whatever sense it does exist, it does not have the same kind of “objective” existence as rocks and trees. He is firmly caught in the dilemma of the ontology of language. For example, in Fundamentals of Language, the classical work on this subject, which he coauthored with Morris Halle, and which most linguists consider to have been the work which definitively and finally settled this issue, they distinguished what they called in quotes

The “inner’ approach to the phoneme in relation to sound from

The “outer” approach to the phoneme in relation to sound.

They say that

This so-to-speak inner, immanent approach, which locates the distinctive features and their bundles within the speech sounds, be it on their motor, acoustical or auditory level, is the most appropriate premise for phonemic

¹. In this context it becomes clear that the ancient observation “You cannot step into the same river twice” misleadingly presupposes that when you try to step the second time it is the same river. Better is this: “You cannot step into the same river once.”
operations, although it has been repeatedly contested by outer approaches which in different ways divorce phonemes from concrete sounds. (p.8)

First, it should be noted that this use of the in/out relation as a framework for conceptualizing the physical/mental relation is quite common, but normally in the scientific frame of reference the mental realm is considered to be in and the physical realm is considered to be out. Mental things are normally said to be “in” the mind, whereas physical things are out there. But here Jakobson and Halle seem to be using these terms in the opposite sense, although they do not say exactly what they mean. It seems to me that what they are doing here is using “inner” and “outer” as kind of vague euphemisms which allow them to say that the phoneme is “in” the physical sound, without actually saying so. That they feel uncomfortable with the theoretical weight being carried by these geometric metaphors is indicated by the fact that they marked them with quotation marks. That they feel uncomfortable with these terms was also indicated by the fact that they spoke of the “so-to-speak” inner approach. I think that what is going on here is that they are using this inner/outer metaphor as a way of avoiding the dilemma of saying explicitly either that the phoneme is a physical thing or that it is not a physical thing.

Moreover, if one considers what kind of thing a distinctive feature is, it is clear that it could not possibly be “in the speech sounds”. Jakobson himself has constantly insisted, quoting Saussure, that

Phonemes are above all else oppositive, relative, and negative entities. (1978, p.41)

And this is equally true of distinctive feature. The fact is that sound is energy, whereas oppositiveness, relativeness, and negativeness are relations, specifically relations between categories. And relations between sounds, relations between categories of sounds, and categories of sounds are not sounds.

Once one realizes that Jakobson does not really want to say that the phoneme is a physical thing, one finds plenty of corroboration in his various works. For example, in the above cited lectures he favorably quotes Albert Sechehaye’s rejection of the physicalist view.

‘The mistaken view that we are fighting against rests on the confusion between two very different things: the science of the voice as a physical and physiological phenomenon, and phonology, or the study of sounds in the organization of language.’ The proper starting point is the symbol, and the important thing is less its intrinsic quality but its relations with all the other symbols. (1978, p 47)

Later in the same paragraph:

Each language presupposes a phonological system, i.e., a set of sound ideas (‘ideas’, or if one prefers, representations of sounds’ Sechehaye adds, to make his terminology if not his conception less unusual). The existence of this system is a grammatical operation of a particular order, but similar in many respects to all the other operations. In the last analysis this system is the bearer of all thought in language...(p48)

Here Jakobson explicitly states that the element of the phonological system, the phoneme, is an “idea”. And, quoting Sechehaye, he says that a phoneme is a “representation”. This view of the phoneme is clearly inconsistent with the notion that the phoneme is “in” sound.

He takes the same position in much more general terms at the beginning of this work where he characterizes language as

the mystery of the idea embodied in phonic matter, the mystery of the word, of the linguistic symbol, of the Logos, a mystery which requires elucidation (p. 2)
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which concisely expresses the crux of the ontological dilemma which arises from the duplicitous nature of language. And he firmly rejects those who try to evade the perplexity of the mystery by the simpleminded expedient of focusing exclusively upon

sounds as such, with their ‘flesh and blood’ aspect, without regard for the role they play in language (p 5)

This does not sound at all like someone who considers the phoneme to be a physical thing, a thing of ‘flesh and blood’.

Now one might try to rescue the belief that Jakobson thought that the phoneme is a physical thing by pointing out that Fundamentals of Language came after these remarks, and suggest that Jakobson changed his views. But this is not borne out by a survey of his work, which remained consistently ambiguous. I will mention a couple of later examples which show that he did not consider the phoneme to be a physical thing.

First, in Fundamentals of Language, after the assertion that distinctive features are in the sound, Jakobson and Halle mention Twaddell’s suggestion that phonemes be considered “abstractional, fictitious units”. (p. 13), and seem to agree with it.

As long as this means nothing more than that any scientific concept is a fictional construct, such a philosophical attitude cannot affect the phonemic analysis. Phoneme, in this case, is a fiction, in the same way as morpheme, word, sentence, language, etc.

Second, in the same number of Janua Linguarum in which Fundamentals of Language was published, Jakobson’s Two Aspects of Language and Two Types of Aphasic Disturbances was published. In this latter work Jakobson says this.

The communication engineer most properly approaches the essence of the speech event when he assumes that in the optimal exchange of information the speaker and the listener have at their disposal more or less the same “filing cabinet of prefabricated representations”: the addresser of a verbal message selects one of these “preconceived possibilities” and the addressee is supposed to make an identical choice from the same assembly of “possibilities already foreseen and provided for”. (p. 58)

He goes on to discuss the role of the distinctive feature “stop vs. continuant” in this speech exchange.

“‘Did you say pig or fig?’ said the Cat. ‘I said pig,’ replied Alice.”

He observes that this distinctive feature and the corresponding phonemes are elements of the code which speakers bring with them to language. Thus phonemes are elements in the “filing cabinet of prefabricated representations”. They are drawers in a bureaucracy. They are boxes in a matrix of “preconceived possibilities”. And as such, they are not sounds. They are places where sounds are put. They are categories of sound.

Finally, I would like to mention a mode of conceptualization which Jakobson used many times to elucidate the ontology of various different kinds of symbols. In “Linguistics in relation to other sciences” for example, he quoted a Russian economist who coined the catch-phrase “a ruble is not silver, a ruble is the ruler’s word”

the point being that the ontology of the word and the ontology of money is the same. That this is the case can be seen in one sense because money can be converted into words and words can be converted into money, as in a check or promissory note. But in a more immediately relevant sense they are also the same in regard to their embodiment, as he explains in another place.
To make the problem clearer we can abandon for a moment the sphere of linguistic values and look instead at a different domain of values. Imagine three dollars, one of which is paper, and two are metal coins, one of which is worn and the other shining new. A child might set apart the worn coin from the new coin, and a numismatist might classify them according to the year in which they were coined. But for the community at large the three dollars all have the same fiduciary value. (1978, p. 86)

When we consider the phoneme in this frame of reference the difference between the embodiment of the phoneme and the phoneme itself becomes crystal clear. And it is also crystal clear that Jakobson did not hold the view that the phoneme consists of or is in sound, in spite of the fact that that is what he said.

**On the Psychological Reality of the Phoneme**

In this section I will consider the argument put forth by Sapir in his well-known 1933 essay “The Psychological Reality of Phonemes.”¹ I think it is fair to say that linguists commonly regard this essay as one of the most elegant and forceful arguments in the history of linguistics, and one of the most important. What is more, his argument bears directly on the present argument. Therefore I would like to consider it in some detail.

Let me begin by reframing Sapir’s essay in the light of the realization that language is duplic-itous. One of the general pragmatic implications of the duplicity of language, one of the most primitive strategic principles, as I have illustrated in many different ways, is this:

**FORCE IS A VECTOR QUANTITY.**

And this is true whether one is talking about the force of gravity or the force of an argument. Thus the force of any speech act, whether one is talking about what A. L. Austin has called “illocutionary force”, or some other variety of “rhetorical force”, or “empirical force”, etc. has both magnitude and direction.

It is crucial to have this fact in mind as we consider the force of Sapir’s argument because, while we linguists have commonly appreciated the magnitude of the force of Sapir’s argument, we have commonly misunderstood the direction of that force. So in order to fully appreciate the force of his argument we have to untangle this confusion about its direction. And the confusion turns on the way we understand the crucial phrase “psychological reality.”

The phrase, “psychological reality”, like everything in language, has at least two levels of meaning, and thus its implications flow in two different directions, one superficial and one deep. On the superficial level, which is the level on which linguists have commonly taken the phrase, it refers to a subtype of reality, namely, the psychological type of reality. In taking the phrase in this way it is assumed that the phrase “psychological reality” is analogous to the phrase “red flowers”, for example, which also refers to a subcategory of a more general category. And given this analogy, it follows that, just as there are other types of flowers, “blue flowers”, “small flowers”, etc., so too there are other types of reality, such as “virtual reality”, “social reality”, “theoretical reality”, “fundamental

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¹ The present discussion refers to the version reprinted p. 46-60 in *Selected Writings*, Mandelbaum 1985. It was originally published as “La réalité psychologiques des phonèmes”, *Journal de Psychologie Normal et Pathologique*, 30 (1933): 247-265.”
On the Psychological Reality of the Phoneme

reality”, “paramount reality”\(^1\), “your reality”, “my reality”, etc. So on this take of the phrase “psychological reality” it is supposed to refer to a certain type of reality, just as the phrase “red flowers” refers to a certain type of flower.

The problem with this take is that the analogy is not valid, so it is a mistake. While it is true that the phrase “psychological reality” is formally similar to “red flowers”, “reality” is a different kind of category from “flowers.” The difference is formally manifest in the fact that the latter is plural and the former singular, which is in keeping with the fact that flowers are many whereas reality is one. That there is only one reality, only one universe, one coherent lawful system, is the most fundamental premise of the whole scientific enterprise. And if there is only one reality, there could not possibly be subtypes of reality. Something either exists or it does not exist, and those are the only two possibilities. Something that exists can be red or blue or no color at all, but first it must exist. And if it exists, then it is real. If it does not exist, then it is not real.

The absurdity of the analogy is made evident if one extends the analogy to yield such phrases as “psychological flower”, “virtual flower”, “social flower”, etc. It is perfectly clear that the phrase “psychological flower” does not refer to a special type of flower, but rather it refers to something that is not a flower at all. And so it is clear that at a deeper level of analysis the phrase “psychological reality”, like “virtual reality”, “fundamental reality”, etc., does not refer to a subtype of reality, but rather to a type of non-reality, or more simply, it refers to non-reality.

From this it follows that Sapir’s argument for the “psychological reality of phonemes” does not prove that the phoneme is an element in a category of reality, but that it is an element in a category of non-reality. Or, in the technical terminology of the present theory of language we would say that the phrase “psychological reality” refers to a duplicitous universe of discourse such as the one represented by Universe\(^1\) in Figure 34 on page 289.

Now some will no doubt claim that this is a specious interpretation of Sapir’s article, that the Sapir did not intend to argue that the phoneme is unreal, and that I am just imposing that interpretation on his argument. I reply to this by pointing out that we must take care to separate Sapir’s intent from the empirical force of the evidence he cited. As to the evidence, as the saying goes, the facts speak for themselves. And if one reconsiders in the present context the five examples he cites as evidence that the phoneme is “psychologically real”, as we will below, it becomes clear that they are in fact evidence that the phoneme is an illusion. As to Sapir’s intent, I agree that he was probably not fully aware of the fact that his evidence proved that the phoneme is an illusion, but, as we will see below, there is good reason to believe that the illusionary nature of the phoneme was not far below the surface of his awareness: First, in this article Sapir says in various different ways that the purpose of the article is to demonstrate that the ordinary naive speaker systematically mishears the sounds of speech, a type of mishearing which he calls “phonemic hearing”; Second, he carefully explains the sense in which each of the five examples is an instance of this systematic mishearing; Third, in the course of his explanation he explicitly described the phoneme as “illusion” and “projection” using those very words, not just once, but many many times. Finally, he described the phoneme as an illusion and projection, using these and other words, in many of his other writings.

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1. “The world of everyday life is consequently man’s fundamental and paramount reality.” (Schutz and Luckmann 1973, p. 3)
But the idea that the phoneme is an illusion is only half of what Sapir was saying. The phonemic illusion is the effect of phonemic mishearing, and he asserts that there is a systematic cause of phonemic mishearing. Sapir argues that the phonemic illusion is not just an incidental error of perception which is attributable to accident, or carelessness, or laziness, or stupidity, but rather that the phonemic illusion it is an error of perception that is systematically induced as a positive function of language. This is implicit in his description of the illusion as “projection.” In other words, Sapir argues that the phonemic illusion is not arbitrary or accidental error, but that it is the phonological process taking place as it should.

So the second part of what Sapir is saying is this. As we “hear” our language, as we take a certain stream of sound as language we impose a set of phonemic interpretations, or phonemic illusions, upon it. And what is more, from the point of view of language, there are correct and incorrect phonemic illusions, so we cannot just impose any possible illusions on the stream of speech sound, we must impose the correct illusions. And of course the correctness of these illusions is not just a matter of our personal wishes or whimsy, but is a matter that is dictated by convention. And the correctness of these illusions is independent of the underlying phonetic facts. That is, no matter what the actual stream of sound might be like, if it is to be interpreted as language, it must be evaluated in terms of the prescribed set of phonemic illusions. So one of the implications of Sapir’s argument is that there are two different kinds of correctness, which correspond to the two different kinds of hearing: real correctness, which corresponds to phonetic hearing, and illusionary correctness, which corresponds to phonemic hearing. And yet from the point of view of reality all illusions, even correct illusions, are incorrect.

Here once again, in the concepts of “correct illusion” as distinct from “incorrect illusion”, we find ourselves entangled in another of the mind boggling multilevel paradoxes that arise as a function of the duplicity of language. And yet, mind boggling though it may be, we can’t continue to ignore it, for it is the logic of the phoneme. So if we are to understand the phoneme, we have to try to sort things out in terms of the logic of duplicity. Specifically, we must recognize that what is at issue here is exactly the same as what is at issue in Figure 36, namely, the distinction between the realm of objective evaluation (tactical or phonetic evaluation) and the realm of intersubjective evaluation (strategic or phonemic evaluation). So with in the frame of mind represented in Figure 36, let us turn to the text of Sapir’s article “The Psychological Reality of Phonemes.”

First we will consider Sapir’s characterization of the general idea of the phonemic illusion and then we will consider the examples of phonemic illusion which he cites. Sapir states the thesis of his argument as follows:

In the course of many years of experience in the recording and analysis of unwritten languages, American Indian and African, I have come to the practical realization that what the naive speaker hears is not phonetic elements but phonemes. (p. 47, emphasis added)

The part of this quote that I have emphasized describes the phonemic illusion in a nutshell. At a later point in his article, in stating the plan of his argument he amplifies his characterization of the phonemic illusion as follows:

I have selected for brief discussion five examples of phonemic versus phonetic hearing and writing out of many which have come to me in the course of my experience with natives and students. In each of these, it will be observed, we have clear evidence of the unconscious reinterpretation of objective facts because of a disturbing phonological preparedness not precisely adjusted to these facts. (p. 48, emphasis added)
And he provides a further amplification of the phonemic illusion in the discussion of his first example, which he observed in the behavior of his Southern Paiute informant, named Tony:

I at once recognized the paradox that Tony was not “hearing” in terms of the actual sounds. (p. 49)

In these three quotes Sapir gives us a clear characterization of the phonemic illusion. He distinguishes two kinds of hearing: phonetic hearing and phonemic hearing. The basic difference between them is that phonetic hearing is hearing whereas phonemic hearing is not hearing. In this regard, it would be more precise to refer to the distinction as being between “hearing” and “phonemic hearing”, such that the modifying adjective would convey the implication that “phonemic hearing” is not really hearing, just as “psychological reality” is not really reality. And it is because Sapir unconsciously realized that “phonemic hearing” is not really hearing that he felt obliged put the word in quotation marks in the last quote, where it is not framed by the adjective “phonemic”. That is, in Sapir’s thinking

**PHONEMIC HEARING = “HEARING” = NOT HEARING**

So the question is, if phonemic hearing is not really hearing, then what its it? Let me explain the difference between these two kinds of “hearing” more fully.

As I said, “phonetic hearing” is just plain hearing. In this context it refers particularly to the hearing of the sounds of language, but it is not a special kind of hearing. It is just the regular natural biological process of perceiving sound, a process which is more or less the same in other animals as it is in human beings, and which is the same process whether it involves hearing the sounds of speech or the sounds of a tree falling in the forest. Thus “phonetic hearing” is just plain hearing.

Phonemic hearing on the other hand is not really hearing at all, but is rather, as Sapir said in the above quote, the “unconscious reinterpretation of objective facts.” And the objective facts that are unconsciously reinterpreted in the process of phonemic hearing are the raw phonetic percepts which are the product of phonetic hearing. So what Sapir is saying is that we unconsciously hear the phonetic characteristics of the sounds of speech first and then we unconsciously transform, or cook, what we actually hear into a phonemic conceptualization of the sound.

Another difference should be noted. Whereas other animals are capable of phonetic hearing, they do not seem to engage in phonemic hearing, or in any other of the various forms the “unconscious reinterpretation of objective facts.” It is obvious in the present context that this is so because hearing is a function of biology, but phonemic hearing is a function of language. Animals hear, but they do not cook.

On the other hand, phonemic hearing is rooted in language, but the process of the “unconscious reinterpretation of objective facts” is much more general and is not limited to the reinterpretation of the elements of language. Indeed, language functions as a vast machine for the unconscious reinterpretation of reality in general. As I explained above (on page296) the unconscious is a function of language, and so the “unconscious reinterpretation of objective facts” is a function of language. But it is a matter of common knowledge that human beings commonly indulge in the unconscious reinterpretation of anything they can get their hands on, so to speak. So what Sapir called “phonemic hearing” is not a uniquely phonological process, but is the general process of the “unconscious reinterpretation of objective facts” as it is manifest in the phonology of language.
Let us turn now to consider the five examples of phonemic hearing that Sapir offers as evidence.

**Sapir’s First Example of Phonemic Illusion**

The first example of a phonemic illusion that Sapir cites is from Southern Paiute. As we consider this example, it is important to realize that, while the details of this particular phonemic illusion are peculiar to Southern Paiute, the same type of phonemic illusion can easily be found in every language. So in trying to appreciate the force of this example one must consider the question of why Sapir chose to cite this particular example and moreover why he chose to begin with it. I suggest that there are two reasons. First, I think he chose to begin with this example because of its formal complexity: this example is more complex than usual in that it involves the intersection of two opposing types of illusion, as I will explain below. Second, I think he chose to begin with this example because he himself was “astonished” by it. This is the only example about which he says he was “astonished” (he says he was “surprised” by example four, but that is not as strong) so perhaps, though he does not say so, this is the first time he realized that phonemic hearing is an illusion. But in any case, he was “astonished”, and he felt that it was important to convey not just the structural characteristics of the illusion but also the fact of his astonishment. Why did he feel that it was important? Because in being astonished he had experienced the fact that astonishment marks the boundary between illusion and reality. The experience of astonishment is a kind of seal of validity. So the fact that he experienced astonishment is as important as the formal details of the illusion. So I suggest that he chose to begin with this example because it combines three characteristics: it is an example of the illusory nature of phonemic hearing, it cannot be dismissed as trivial because it is a gross and very complex system of illusions, and it caused him to experience astonishment.

Following is the passage in which Sapir describes his discovery of this illusion, which as I mentioned above occurred in the course of his interaction with his linguistically naive Southern Paiute informant, Tony:

As an example of a comparatively simple word I selected \([\text{pá:Ba}^h]\) “at the water” (voiceless labial stop; stressed long a; voiced bilabial spirant; unstressed short final a; final aspiration). I instructed Tony to divide the word into its syllables and to discover by careful hearing what sounds entered into the composition of each of the syllables, and in what order, then to attempt to write down the proper symbol for each of the discovered phonetic elements. To my astonishment Tony then syllabified: /pa:/, pause, / pa^h/. I say “astonishment” because I at once recognized the paradox that Tony was not “hearing” in terms of the actual sounds (the voiced bilabial \([B]\) was objectively very different from the initial stop) but in terms of an etymological reconstruction: /pa:/ “water” plus postposition */-pa^h/ “at”... a theoretically real but actually nonexistent form. (p. 48-9, appropriate brackets added to distinguish between phonetic and phonemic representations and different diacritics used for aspiration and vowel length)

So what astonished Sapir is that the second consonant of this word, \([B]\), is “objectively very different” from the first consonant, \([p]\), and yet the naive informant heard it as the same. This would be roughly equivalent to an English speaker thinking that “van” sounded the same as “pan.” And to an English speaker that would be an astonishing illusion.

As Sapir goes on to explain, while this is the particular illusion that astonished him and thus brought the illusionary nature of phonemic hearing to his attention, it is just one part of a complex system of phonemic illusion in Southern Paiute. He discusses two of the systemic illusions in this
essay. First, the naive speaker of Southern Paiute not only has the illusion of “hearing” [b] as [p], but he also “hears” [T] and [F] as [p]. And from the point of view of a naive English speaker this would be an even more astonishing illusion because it would be roughly equivalent to someone in English who heard “van” and “than” and “fan” as the same as “pan.”

The second illusion he discusses is this. There is a contrary illusion that intersects, so to speak, the foregoing illusion. Southern Paiute has a distinction between short and long stops (or single and geminate stops, depending on how one chooses to represent the distinctive feature), so there is a distinction between [p] and [p:]. Now, as Sapir explained, there are words such as [pApáh] (where A represents a voiceless vowel) in which the actual sound of the second [p] is objectively identical to the sound of the first [p] and yet the second [p] is “heard” by the naive speaker as being different from the first [p]. Specifically, the first [p] is heard as a simple [p], but the second [p] is “heard” as a long [p:], even though it is not actually long.

So to summarize, this example demonstrates that there are two different types of illusion in Southern Paiute. The first type of illusion is where two things that are different are “heard” as the same. And the second type of illusion is where two things that are the same are “heard” as different. Furthermore, these two different types of illusions intersect at the same point in the phonological structure of Southern Paiute, at the point of the sound [p], in the following way: sometimes [p] is “heard” as if it were not [p] and sometimes something that is not [p] is heard as if it were [p].

The foregoing is the first half of what Sapir is trying to prove in this article, namely, that phonemic “hearing” is an illusion. The second half is that the phonemic illusion is not the random effect of accidental mishearing, but that it is a systematic effect of certain general laws, and these laws are what linguists have thought of as the laws of the phonology of language. This is what he is trying to get at in this quote:

To understand Tony’s behavior, which was not in the least due to mere carelessness nor to a tendency of the speakers of this language “to confuse sounds,” to quote the time-worn shibboleth, we must have recourse to the phonology of Southern Paiute. (p. 49)

Following this assertion he went on to explain how Tony’s illusionary “hearing” is a function of the phonological laws of Southern Paiute. He does not go into the details of these laws in this article, but he asserts that the difference between the actual phonetic sounds and the phonemic interpretations of those sounds can be predicted as a function of

- absolutely mechanical phonetic laws of spirantizing, alternating stress, and unvoicing. (p. 50-1)

And he concludes by asserting that

Tony’s “error” unconsciously registered this contrast. (p. 52)

In other words, Tony’s phonemic illusion is a function of those “mechanical phonetic laws.” And to put it in terms of generative phonology we would say that the phonological component of the grammar which derives the phonetic representation from the underlying phonological representation also governs the phonological illusions of the naive speaker.

Now that we have developed a fairly complete picture of the phonemic illusion, we are in a position to point out that there is an important complement to the illusionary hearing of the naive speaker, which Sapir did not seem to realize, or at least he did not mention. It is necessarily the case that where there is hearing there must also be speaking, and thus corresponding to the phenomena of
“phonemic hearing” there must be what one might call “phonemic speaking.” So we must assume that just as the laws of the phonology of a language govern the illusions of phonemic hearing, so too they govern the inhibitions and distortions of phonemic speaking. And while it is not commonly called “phonemic speaking”, it is a matter of common knowledge that the naive speaker’s ability to pronounce language is governed by the laws of the phonology of his own native language. Perhaps the most commonly known instance of this phenomenon is what is called “foreign accent.”

Let us consider a trivial example. In English there is a “mechanical phonetic law”, to use Sapir’s terms, which predicts the relation between plain [p] and aspirated [pʰ]. Part of this law says that of these two it is only possible to have [pʰ] at the beginning of a word and it is only possible to have [p] after [s] at the beginning of a word. So according to this law the p sound in the word “pan” has to be the aspirated one, [pʰan], [pan] being illegal, and the p sound in the word “span” has to be the unaspirated one [span], [spʰan] being illegal. And to say that this is a law of English is to say that the normal naive speaker of English transacts in language under the government of this law. In other words, the naive speaker hears and speaks in accord with this law. Therefore, one of the effects of this law is that when a naive English speaker hears a word spoken in a foreign language, such as French, which has an illegal sound in it, such as an initial unaspirated p, as in French [pan], the English speaker will unconsciously reinterpret the illegal sound [p] as if it were the legal sound [pʰ], and in this way he will “hear” [pʰan], which is an illusion, but it has the virtue of being legal. And correspondingly, if a naive speaker of English were to try to say the illegal French word [pit] he would unconsciously substitute the legal initial sound and actually pronounce it [pʰit], and he would be unaware of his “error.” In this way the phonological laws of language govern the illusions, the inhibitions, the distortions, and the substitutions which the naive speaker unconsciously makes in both hearing and speaking. So the phonological laws of a language are codifications of the prescribed illusions, inhibitions, and distortions which the compliant naive speaker is obliged to obey. They are the codifications of the naivete of the naive speaker. And thus the phonological laws are the “preexisting agenda” mentioned above in conformity with which the raw percepts of phonetic hearing are unconsciously transformed, or cooked, into the representations that are prescribed and expected at the level of phonemic hearing.

Finally, although it is not of immediate relevance to the point at issue here, as long as we have this example laid out before us I would like to take the opportunity to point out that the intersection of phonemic illusions such as we have observed in this example is one of the kinds of phenomena that standard generative theory claims should be explained by stipulating an extrinsic relation of order on the possible sequences in which rules can apply in deriving surface forms from underlying forms. This particular type of intersection of illusions would be “explained” in the standard theory by imposing a non-feeding ordering relation between the two rules at issue. To see that this is so, let us summarily characterize the set of phonological laws which derive [B], [T], and [F] from underlying [p] as follows:

Law A: p is manifest as B, T, or F under the appropriate circumstances.

And let us summarily characterize the law that derives [p] from underlying [p:] as follows:

Law B: p: is manifest as p under the appropriate circumstances.
If Law A can apply to the output of Law B, then there could be no such form as [pApáh] because Law A would transform the intervocalic [p] into a spirant. But the fact is that there is such a form. And to prevent this feeding application of the spirantizing law, generative phonology would stipulate that B must be ordered after A. While it is possible to account for the facts in this way, it just does not seem to me that what is going on here is essentially a matter of ordering relations. But in any case, the point I want to make here is that such situations can also be described as above in terms of the logic of the intersection of two conflicting illusions.

**Sapir’s Second Example of Phonemic Illusion**

Sapir discovered his second illusion in the course of doing field research with a speaker of Sarcee, an Athapaskan language. This is the same general type of illusion as one of those discussed above: the native speaker “hears” a difference between two sounds that are objectively the same. But, of course, there are differences in detail. He described his discovery of this illusion thus:

I was concerned with the problem of deciding whether certain words that seemed homonymous were actually so or differed in some subtle phonetic respect that was not immediately obvious. One such homonymous, or apparently homonymous, pair of words was [dīnī] “this one” and [dīnî] “it makes a sound.” (The grave accent represents low tone and the acute accent represents high tone.) In the early stage of our work I asked my interpreter, John Whitney, whether the two sounded alike to him and he answered without hesitation that they were quite different. This statement, however, did not prove that he was objectively correct, as it is possible for perfectly homonymous words to give the speaker the illusion of phonetic difference because of the different contexts in which they appear or because of the different positions they occupy in their respective form systems. (p. 52, brackets added, parenthetic note added, and emphasis added)

Nevertheless, even though Sapir could not hear any difference between the two words, he did not reject the native speakers intuition out of hand. The native speaker said that he felt that he “heard” a [t] at the end of the [dīnī] which means “it makes a sound”, but Sapir discounted that hypothesis because he could easily hear that there was no [t] at the end of that word, just as there was no [t] at the end of the other homonymous word. Sapir described some of the numerous hypotheses he considered and tested with the native speaker trying to discover without success what this subtle phonetic difference might be until finally

We had to give up the problem, and I silently concluded that there simply was no phonetic difference between the words and that John was trying to convince himself that there was one merely because they were so different in grammatical form and function that he felt that there ought to be a difference. (p. 53)

And Sapir goes on to explain how he finally figured out that what the naive speaker was “hearing” as a phonetic difference was not really a phonetic difference but a morphophonemic difference which only showed up overtly in the phonetic surface in certain morphological contexts as demonstrated in the following paradigm.

<table>
<thead>
<tr>
<th>basic form</th>
<th>plus -í = “the one who”</th>
</tr>
</thead>
<tbody>
<tr>
<td>“this one”</td>
<td>dīnī</td>
</tr>
<tr>
<td></td>
<td>dīnā a</td>
</tr>
<tr>
<td>“it makes a sound”</td>
<td>dīnī</td>
</tr>
<tr>
<td></td>
<td>dīnī hí</td>
</tr>
</tbody>
</table>
So a [t] shows up on the surface in the relative form of “it makes a sound”, but the [t] which the naive speaker “hears” in the [dìní] which means “it makes a sound” is not there. And if a person hears something that is not there, that is an illusion, which is exactly what Sapir called it. On the other hand, the fact that the illusion which he “hears” is a [t] rather than any other possible sound, and the fact that he “hears” it in this particular word rather than in any other possible word is, of course, not a random illusion, but is motivated by the systematic phonological laws of the Sarcee language.

For this reason, this particular phonemic illusion is found only among native speakers of the Sarcee language, and would never trouble an English speaker. However, Sapir points out that a similar illusion does occur in English. For example, in certain dialects of British English and in certain dialects of American English, such as in Boston, the past tense forms of the words written “sawed” and “soared” are phonetically identical, [sO:d], as Sapir represented it. And yet, according to Sapir, the normal naive speaker of this dialect would be inclined to “hear” a slight difference where there is none, just as the Sarcee speaker did. Presumably the naive English speaker would “hear” an [r] sound in the [sO:d] that means “soared” but not in the [sO:d] that means “sawed.” And as in the Sarcee example, the difference which the English speaker would “hear” is not in the sound but is the projection of an imaginary [r], which is only manifest in the context of morphological variation as illustrated in the following paradigm.

<table>
<thead>
<tr>
<th></th>
<th>past</th>
<th>gerund</th>
</tr>
</thead>
<tbody>
<tr>
<td>“saw”</td>
<td>sO:d</td>
<td>sO:-iN</td>
</tr>
<tr>
<td>“soar”</td>
<td>sO:d</td>
<td>sO:r iN</td>
</tr>
</tbody>
</table>

This paradigm shows that there is a real phonetic difference between these two words in the gerund form, where an [r] really does show up in the sound, but when the naive speaker “hears” this [r] in the past form of “soar” he is hearing an illusion for it is not there. So this illusion in English is generally similar to the illusion in Sarcee.

However, in comparing the phonological illusions of English to those of Sarcee one must take into consideration the fact that English has an additional layer of complexity, namely, a system of writing which is superimposed upon the phonological system. Therefore, in English the possibilities for misconceptualization in the first place and the possibilities for secondary rationalization of erroneous conceptualizations are much increased. Sapir addressed this problem in regard to his comparison of the English illusion with the Sarcee illusion as follows.

Among educated but linguistically untrained people who discuss such matters differences of orthography are always held responsible for these differences of feeling. This is undoubtedly a fallacy, at least for the great mass of people, and puts the cart before the horse. Were English not a written language, the configuratively determined phonologic difference between such doublets as ‘sawed’ and ‘soared’ would still be ‘heard,’ as a collective illusion, as a true phonetic difference. (p. 54, emphasis added)

So what Sapir is saying about this analogous situation in English is that there are two layers of error. First, and most fundamental, there is the error of phonemic hearing, which is the same in English as in Sarcee, where the naive speaker “hears” a phonetic difference that is not there, a phenomenon which Sapir characterizes bluntly and precisely as “collective illusion.” And then there is the secondary error, which occurs only in English, of erroneously attributing the difference in sound, which is really an illusion, to the difference in orthography. Sapir also characterizes this error bluntly and pre-
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precisely as a “fallacy.” So in English the naive speaker’s conceptualization of this sort of situation is, in Sapir’s words, a collective fallacy on top of a collective illusion.

A penultimate point. As I explained in regard to the first example, there is a general correlation between the illusions of phonemic hearing and the inhibitions and distortions of phonemic speaking. And of course this correlation holds in the present case. So just as the naive speaker of this dialect of English “hears” an [r] that is not there, if he tried to pronounce a word in a foreign language, or a different dialect, in which an [r] is there, he would not be able to do so. In other words, the naive speaker is caught in the strange and interesting pragmatic dilemma of not being able to speak precisely the illusion that he hears. There are many different ways in which a person can be “struck dumb”, as the saying goes, but this is one of the cases where one can clearly see the dynamics of this phenomenon.

Finally, it should be stated that this sort of collective phonological illusion, where the naive speaker “hears” something that is not there, is not at all unusual. Such illusions are a dime a dozen and can be found in every language. And this sort of fallacy, where naive speakers erroneously attribute such illusionary differences to the writing system, is also to be expected in languages that have a writing system. So one cannot vitiate the force of this example by characterizing it as a freak: collective illusion and fallacious rationalization is the rule in language.

Sapir’s Third Example of Phonemic Illusion

Sapir’s third example is from Nootka. It is the same type as the preceding: The naive speaker “hears” two identical sounds as different. The sound at issue is long s. In Nootka some long s’s are predictable as a function of what Sapir called a “mechanical length” rule whereby a consonant is lengthened after a short vowel when followed by another vowel. As a result /hisi:k/ and /tisa:ə/ are pronounced with long s as [hissi:k] and [tesssa:]. 1 Other long s’s come from morphological combinations where a form that ends with an s is followed by a form that begins with an s. Sapir cites the example of the form /tːːsːiːqːsːiːtːːsːiːnːə/ “we went there only to speak”, where the sequence [sːsː] is derived from the combination of /-ʔːsː/ ‘to go in order to’ followed by /-sːal/ ‘only, just’. This long s sound is virtually identical with the long s sound of /tːːsːaːsːaːtːːsːaːnːi/ “the stick takes an upright position on the beach” but it is “heard” as different.

Here again we have objectively identical phonetic phenomena which receive different phonologic interpretations. (p. 55)

Of course the two different kinds of long s are objectively different on the morphological level of analysis, but the point is that there is no objective difference on the phonetic level, and yet the typical naive speaker is confused in such a way that he thinks he hears a difference. And when you hear something that is not there, that is an illusion.

Finally it should be mentioned that a naive Nootka speaker would be subject to the corresponding distortions of phonemic speaking. For one thing a naive Nootka speaker would be unable to

1. The symbol “q” represents a laryngeal spirant, which incidentally lowers the following vowel from “i” to “e”. I have represented length of s as gemination rather than diacritically as Sapir did in order to make it representationally identical to the morphologically derived long s.
correctly pronounce an English word with an intervocalic short s like “mason” because he would unconsciously lengthen the intervocalic s. And for another thing, a naive Nootka speaker would be unable to pronounce an expression that has a morphologically derived sequence of s’s like “this sock” as a native speaker of English would. In casual speech an English speaker usually deletes one of the s’s to get “thi sock”, but a naive Nootka speaker would be unconsciously inhibited from making this simplification.

Sapir’s Fourth Example of Phonemic Illusion

This example is also from Nootka. And it is another story about Sapir being surprised by a phonemic illusion. The crux of the story is simple to state, but to appreciate the point of the story one must understand the underlying assumptions, and those assumptions are complex, and can be confusing. So we will have to lay out the background carefully.

Part of the confusion is that there are actually two different but interrelated types of illusion at play in this example, but Sapir only intended to present one of them as an example. He did not talk about the other type of illusion as illusion because it was already familiar to him, indeed, so familiar that he did not seem to realize that it too was an illusion. So one illusion was part of the unconscious background of his own thinking and thus provided part of the context for the other illusion. And it is apparent from the story that the fact that the second illusion is an illusion only came to his attention because he was surprised by it. So in order to properly understand the second illusion, which is the one he intended to present as an example of phonemic illusion, we have to understand the first illusion. Therefore, we will begin with an explanation of the first illusion.

In general what is at issue in both of these examples is the aspect of the phonemic hearing process where the naive speaker cuts the continuous stream of the sound of speech into a sequence of discrete segments, i.e., phonemes. Considering this phenomenon on the general level it is obvious that it is a matter of projecting or superimposing a prescribed segmental interpretation upon the continuous stream of sound. In other words, the sequence of discrete segments which the naive speaker “hears” is a systematic illusion on the level of phonological reality, because speech does not happen in discrete segments in real reality.

Therefore, the process of cutting the continuous stream of sound into discrete elements is necessarily an arbitrary process, and it is necessarily inaccurate in many ways, so there are always a number of different and conflicting ways a language might decide to project segmentation upon any given stream of sound. We encountered such conflicting differences in some of the preceding examples in regard to the question of whether to represent a long vowel or consonant as one segment or two - [aː] or [aa], [sː] or [ss]. It is crucial to realize that there is no objective phonetic ground for deciding, because it has nothing to do with objective phonetic fact. It is an arbitrary phonological decision and some languages do it one way, some languages do it the other way, and some languages do both.¹

¹ By the way, I have been trying to understand the implications of this problem for many years beginning with my Ph. D. dissertation On the Treatment of Length.
The same issue arises in regard to other more complex sequences of sounds. We can illustrate the problem in English. For example, the sound of the word “I” is [ay], which is obviously a sequence of two sounds. And so in the phonology of many languages this same sequence sounds would be considered to be a sequence of two things. But in English phonology this sequence of two sounds is considered to be one thing, as evidenced by the fact that it is written with one letter.

Similarly, the sequence of sounds [t] + [ʃ] at the beginning of the word “chair” is considered to be one phoneme in English, but two phonemes in some other languages. So in English we hear the last part of “beats” ([bits] = /bits/) correctly as a sequence of two things [t] + [s] but we “hear” the last part of “beach” ([bits#] = /bi c#/) incorrectly as one thing.

Sapir raises the issue of segmentation in Nootka in regard to sequences of stops or affricates followed by a glottal stop - [p], [t], [k], etc. Sapir describes the phonetic characteristics of these sequences in great detail making it clear that on the level of phonetic reality they really are sequences of sounds. (He says that the oral and glottal closure are simultaneous, but the release, which is the only audible manifestation of the closure, and thus is the distinctive aspect of the closure, is sequential.) The question is whether they are evaluated on the phonological level of reality in Nootka as sequences of two phonemes or as one phoneme.

Franz Boas, who was Sapir’s mentor, had done extensive research in Nootka and he had represented these sequences as one phoneme. He characterized them as “fortes” consonants and represented them accordingly as [p’], [t’], [k’]. So when Sapir came to study Nootka he uncritically adopted Boas’ system of transcription and thus implicitly took it for granted that these sequences are really one phoneme on the level of phonological reality in Nootka. I do not dispute this assumption, because there is good phonological evidence to support it, but I am pointing out that in the course of explaining the second illusion Sapir seems to have swallowed this illusion without realizing that it is also an illusion.

So Sapir began his discussion of this example on the basis of the assumption that these phonetic sequences are counted as single phonemes in the phonological reality of Nootka. And he tried to incorporate this phonological conceptualization in the way he represented them. First, he used a raised comma as a diacritic mark to represent glottal closure as opposed to the conventional symbol []; thus he tries to convey the idea that glottal closure is not an independent segment in this case. And second, instead of putting the raised comma after the symbol representing the oral closure in accord with orthographic convention thus, /p’, t’, k’/, he put it directly above as follows:

\[ \hat{p}, \hat{t}, \hat{k} \]

In this way he tries to convey the idea that these are not sequences of two things but one thing consisting of two parts that happen at the same time. And these are exactly the two details in regard to which the psychologically real conceptualization is false from the point of view of phonetic reality. The two phonetic events are not simultaneous: the oral and glottal closure are simultaneous, but only the release is audible, and the oral release is prior to the glottal release as represented in the sequence [p’]. And there is no phonetic ground for distinguishing a special kind of glottal release as represented by the raised comma as opposed to []. So one must take care not to be confused by Sapir’s representation. He intended these symbols to represent the phonological reality of Nootka, not phonetic reality. The phonetic reality is that there is no difference that motivates the differences between the three types of representation.
Let me reiterate that the foregoing is all by way background. First, I described the segmentation problem in general, and then I described how Sapir thought about the particular segmentation problem of the consonant + glottal sequences in terms of Nootka phonological reality. Now the other segmentation problem arises against this background in regard to another class of phonetic sequences which are similar to the above in that they involve the glottal stop, but different from the above in two respects: first, the other elements are sonorants rather than obstruents, and second the order of the two elements is reversed. To be specific, the sequences at issue are [ʔm], [ʔn], [ʔy], and [ʔw]. So the segmentation problem is this: The two classes of sequences are the same in some ways and different in other ways on the phonetic level, the question is whether they are considered to be the same or different in regard to segmentation on the phonological level. Boas had assumed that they were different and that the latter sequences were counted as sequences on the level of phonological reality. And Sapir had uncritically accepted Boas’ view of Nootka phonology in this regard too. So at the beginning of the story in which he recounts his surprise, Sapir’s conceptualization of Nootka phonology was as represented in Figure 37.

FIGURE 37. Sapir’s Original Misconceptualization of Nootka Glottal Sequences

Now we are in a position to understand the story of Sapir’s surprise. As Sapir tells it, he was interacting with Alex, his Nootka informant, on the basis of this conceptualization of Nootka phonology. During the course of this interaction Sapir reports that he was surprised (p. 56) when Alex suggested that these glottal + sonorant sequences, [ʔm], [ʔn], [ʔy], and [ʔw], ought to be represented the same way as the obstruent + glottal sequences thus:

\[
\overset{\text{The Phonemic Level}}{\overset{\text{The Phonetic Level}}{\overset{\text{p} \ \overset{\text{t}}{\overset{\text{k}}{\overset{\text{p}}{\overset{\text{t}}{\overset{\text{k}}{\overset{\text{p}}{\overset{\text{t}}{\overset{\text{k}}{\overset{\text{m}}{\overset{\text{n}}{\overset{\text{y}}{\overset{\text{w}}{}}}}}}}}}}}}}}}
\]

Sapir took this to mean that Alex “heard” these sequences on the phonemic level as single segments and further that he heard them as the “same” as the other class in spite of the fact that the glottal release preceded rather than followed. So Sapir took this as evidence that from the point of view of the naive speaker what counted on the phonological level was that both classes of sequences involve a glottal ejective. And the fact that the glottal ejective preceded in one class and followed in the other did not count in the psychological reality of Nootka. Once this possibility occurred to him, Sapir looked for and found several different kinds of formal phonological evidence which corroborates the
naive speaker’s intuition that these sequences are also counted as single glottalized phonemes in Nootka psychological reality in spite of the difference in the order of the glottalization. So as a result of Alex’s suggestion Sapir changed his conceptualization of the Nootka conceptualization of these sequences as represented in Figure 38.

FIGURE 38. Sapir’s Subsequent Conceptualization of Nootka Glottal Sequences

So in summarizing this situation, on the phonological level there are two intersecting phonemic illusions in play: The first is “hearing” two things as one; The second is “hearing” two different sequences - glottal + consonant and consonant + glottal - as the same. And, on the interpersonal level there are two intersecting points of view in play: the point of view of the naive native speaker and the point of view of the sophisticated foreign linguist. Sapir succinctly characterize this bewilderingly complex situation in the following appropriately bewildering sentence, which makes perfectly good sense in the present context.

Once more, a naive native’s phonetic “ignorance” proved phonologically more accurate than the scientist’s “knowledge.” (p. 56)

And what I consider to be most interesting about this story of a surprise encounter with phonemic illusion is not so much the illusion itself, but the glimpse which the whole situation opens up into the depths of the paradoxical complexities of the linguistic situation. Here we see the point of view of naive ignorance, which is based on superior knowledge from the phonological point of view but inferior knowledge from the phonetic point of view, in conflict with the scientist’s point of view, which is based on superior knowledge from the phonetic point of view but inferior knowledge from the phonological point of view. Here we have a real concrete example of the paradoxical character of intersubjective space as represented in Figure 36 on page 308. And thus this example shows that if we are to sort out the various points of view that are in play in language, and if we are to orient ourselves correctly in relation to the various types of knowledge that are in play in language, we must do so in the framework of a conceptualization of intersubjective space as represented in Figure 36 on page 308.

So I take Sapir’s story not just as an example of a phonemic illusion but also, and more importantly, as an example of the intersubjective situation in which language takes place, and most impor-
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Impantly, as speaking to the position of the linguist. I take it as demonstrating that the linguist must frame his theoretical conceptualization of the situation in terms of intersecting duplicities in order to be able to sort out the two different kinds of duplicitous points of view in play (here the phonetic vs. the phonological) and the two different kinds of ignorance which they frame (that of the naive speaker in regard to the phonetics of his own language vs. that of the foreigner in regard to the phonology of the naive speaker’s language). Of course, this implies that when a linguist studies his own language, the role of the naive native speaker and the role of the ignorant foreigner are combined in one person, and what that person knows (as a naive speaker) but doesn’t know that he knows (as a linguist) is precisely what Freud called unconscious knowledge. So when we undertake the study of our own language, the position we must take as linguists is that of foreigners to ourselves.

Sapir’s Fifth Example of Phonemic Illusion

The final example of phonemic illusion differs from the preceding examples in several ways. First, this illusion is a matter of “hearing” a consonant that is simply not there at all. It is not there phonetically, phonologically, morphophonemically, or morphologically. It is simply manufactured out of thin air. Second, this illusion is in English rather than an American Indian language. Third, this illusion arose in the course of Sapir’s interaction with linguistics students in his phonetics course. Fourth, he is much more emphatic in his characterization of this example of phonemic hearing as illusion: in the brief space of two pages which he devoted to this example he describes it as “illusion” ten times, as “projection” four times, as “error” twice, as “misheard” twice, as “overhearing”, as involving an “imaginary consonant”, and as involving an “unreal” consonant. One must suspect that the fact that he is so much more emphatic about the illusionary character of phonemic hearing in this example is not a coincidence. I suggest that, although he does not say so, Sapir felt that the illusionary character of this example would be more evident to his audience, which could be expected to consist of predominantly English speaking linguists, who have probably experienced and observed this exact same illusion themselves.

The illusion Sapir points out is quite simple, but it is worth considering the entire situation in some detail as an example, not just of illusional hearing, but of the thinking which underlies and governs illusional hearing. To this end, let us go through Sapir’s explanation of the situation in detail.

Sapir describes the illusion and the situation in which the illusion arises as follows:

In a course in practical phonetics which I have been giving for a number of years I have so often remarked the following illusion of hearing on the part of students that there seems no way of avoiding a general phonologic theory to explain it. I find that, after the students have been taught to recognize the glottal stop as a phonetic unit, many of them tend to hear it after a word ending in an accented short vowel of clear timbre (e.g., a, e, i). Thus, a dictated nonsense word like smč or pilá would occasionally be misheard and written as smč‘ or pilá‘ but there seems far less tendency to hear a final glottal stop in words like pilá or pilá: (p. 58)

How to explain this illusion? As he stated in the above quote and as he has stated throughout this article the illusion is a function of the phonology of English:

the illusion of a final glottal stop is due to some feature in the phonologic structure of English. (p. 58)

Then he proceeds to explain in detail how this illusion follows from the principles of the phonology of English in spite of the fact that there is no glottal phoneme in English.
To begin with, what sets the stage for the process of illusionary hearing in this case is that there is an arbitrary limitation on the permitted word final syllable types in English. Sapir points out that three types of word final syllable types are permitted in English.

A. Words ending in a long vowel or diphthong, e.g., sea, flow, shoe, review, apply.

B. Words ending in a long vowel or diphthong plus one or more consonants, e.g., ball, cease, dream, alcove, amount.

C. Words ending in a short vowel plus one or more consonants, e.g., back, fill, come, remit, object.

On the basis of the paradigm that is established by these three types it is obvious there is a fourth logically possible phonetic type, namely,

D. Words ending in a short vowel, e.g., French fait, ami,...(p. 59)

But the phonological laws of English prohibit this type. As a result the phonological laws of English are in conflict with the possibilities of phonetic reality. And what Sapir is saying is that when a prohibited possibility becomes a reality the resulting conflict is what motivates and structures and governs the process of “hearing” an illusion as a way of trying to resolve the conflict.

In as much as Sapir gives a detailed explanation of the reasoning that underlies this illusion, and in as much as it is in English, it offers a unique opportunity for us English speakers to see how the phenomenon of phonemic illusion works from the inside. So let us consider the conflict that Sapir is talking about as seen from the point of view of the typical naive speaker of English, who interacts with the world under the government of the laws of the English language, which includes the laws of English phonology.

When the naive speaker hears a forbidden word such as French ami or one of the nonsense words Sapir dictated to his students, smé or pilá, he is confronted with the dilemma of whether to acknowledge that he actually heard the forbidden word and thereby admit to having violated the purity of his mother tongue or to cook up an appropriate illusion and thereby maintain the purity of his mother tongue at the expense of his own perception. Needless to say, this whole situation - the laws of English phonology, the original hearing of the forbidden word, the realization of the dilemma, and the calculations that follow from that realization - is below the level of the normal naive speaker’s awareness. In other words, in the normal case the whole process of reasoning we are looking at takes place in the unconscious. But that does not mean that it is mysterious or incomprehensible or illogical. Indeed, the point Sapir is trying to make is that what might seem at first sight to be a mysterious and incomprehensible hallucination not only perfectly reasonable but that it is predictable as a function of the laws of the phonology of English. The hearing of a phonemic illusion is a result of the laws of the phonology of English governing as they are supposed to.

In order to understand how this works let us slow this process of reasoning down and consider it in some detail step by step. So let us put ourselves in the role of a typical naive speaker who is facing this dilemma, a situation with which we are not altogether unfamiliar, and let us try to follow the path of thought which the naive speaker might follow in arriving at the conclusion that “hearing” an illusionary glottal stop might be the best way to resolve the dilemma. As we have said, the dilemma is precipitated by hearing a forbidden word, so the question is what can the naive speaker do to escape from the dilemma. There are several possibilities. First, and most natural, he could just admit that what has happened has happened, which is that he has heard a forbidden word, and go ahead and enjoy it. But the problem with this is that in hearing the forbidden word he would be violating the
laws of his language, and thus would be a kind of criminal or a traitor to his own language, and thus to his society, his worldview, and his own identity. So to the naive speaker, that is, to someone who is excessively cooperative and compliant, that course of action would have to be rejected, otherwise he would to cease to be linguistically naive.

So he is back in the teeth of the dilemma, where it might occur to him that it would have been better not to have heard that word at all. (Or, going back to the root of the problem, it might occur to him that it would have been better not to have been born at all.) But it is too late for that, he thinks, because he has already heard the forbidden word. For future reference however, bearing in mind that prophylaxis is better than therapy, he resolve never to hear such treasonous words again. And, of course, this is the basic strategic policy which the typical naive speaker does in fact adopt, the policy which is called “xenophobia.” Or more generally, it is the strategic policy called “conventionalism”, which permits contact and interaction with the world in general only in so far as it conforms to the dictates of conventional law. But, as we said, it is too late to implement this policy in the present situation because he already heard the word. And besides, there is an obvious disadvantage to this strategy: it restricts one’s freedom of action.

However, there is a clever compromise between these two extremes, the extreme of contact and the extreme of noncontact, a stratagem which would permit him to have his cake and eat it too, or rather, a stratagem by which he could neither have his cake nor eat it. But at least this compromise would permit him to retain his naive innocence, at least in the eyes of other people. The compromise strategy is this: He could pretend that he did not hear the forbidden word. In this way he both heard it and he did not hear it: he heard it in his own ears, but in the eyes of other people, that is, in the realm of the law, and in this case what is relevant is the realm of phonological law, he could not be held responsible for having heard it. In other words, he divides his conceptualization of himself into two levels which are split along the line of pretense or illusion, and these are the phonetic level and the phonemic level. Then in the framework of this cleavage he can alienate himself from the one who has heard the forbidden word by identifying himself with the phonemic level of conventional possibilities such that he can say that “I” am not the one who hears phonetically, “I” am the one who hears phonemically, so “I” did not hear the forbidden word. Therefore, “I” am not guilty.

And so this way of conceptualizing the situation would allow him to exonerate himself of the criminal implications of having tasted the forbidden fruit, at least in the eyes of other people. But, of course, he is able to maintain his innocence in this way only at the expense of his alienation of his self from the reality of his own hearing. And what is more, in reality he is still guilty because he really heard the forbidden word, and he knows it. So, although he has maintained his innocence on the conscious level, which is the level of psychological reality, he is still guilty on the unconscious level, which is the level of real reality. So this is the strategy which came to be known through Freud’s writings as “repression’, about which we will have more to say below.

In spite of its considerable shortcomings, the normal naive speakers has adopted this strategy as a backup defense policy, just in case a stray forbidden word should break through his xenophobic perimeter. Indeed, this duplicitous conceptualization of the situation is integral to the normal dynamic of language, as we have been endeavoring to demonstrate. And the fact that the normal naive speaker has unconsciously adopted this policy explains why the typical naive speaker is seized by a kind of

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1. Note that the situation of the naive speaker in this dilemma is similar to that of the child in the story of the emperor’s new clothes.
blind panic, or better, deaf panic when he thinks someone is speaking to him in a foreign language. It explains why, even when the typical naive speaker consciously tries to hear a foreign word with the best of intentions and with the most strenuous efforts, his efforts are subverted by some perverse unconscious hearing block which prevents him from hearing foreign words, even if they are phonetically simple words, sometimes even words that are perfectly consistent with the phonology of his native language.

So there is plenty of evidence that the naive speaker normally adopts this strategic policy. But this way of trying to escape from the dilemma only works for incidental and superficial contacts with foreigners and forbidden words. The naive speaker can pretend to not have heard the word once or twice or three times, but if he wants to maintain a relationship with the person who pronounces the word, or with the world at large, he will have to admit hearing it before too long. Or else he will alienate others and he will end up in the same isolated position he would have been in under a policy of strict xenophobia. So the price of associating with other people freely is the hearing the forbidden word. And thus if the naive speaker wants to relate freely to other people, all of whom are essentially foreigners, he must allow himself to hear and to understand and to respond to forbidden words, so he is right back in his original dilemma.

Here we come to the sort of situation Sapir is talking about, where the naive speaker in question is a student in a linguistics class who has (more or less) consciously decided that he wants to hear forbidden words and possibly even to speak them. The same dilemma persists, however, because his conscious decision to expose himself to the hearing of forbidden words does not abrogate the unconscious laws of the phonology of his language nor the unconscious policies and practices he has put in place to police his hearing, and speaking. So when the student in a phonetics class intentionally tries to hear these forbidden words he still experiences the same unconscious dilemma as the typical naive speaker, but in this case the policy of avoiding foreign words altogether or pretending to be deaf will no longer work. So either he must give up his linguistic naivete or he must come up with an even more sophisticated pretense. And this is where the sort of precisely crafted illusion Sapir is talking about comes into play: by appropriate use of carefully devised illusion the naive speaker can unconsciously transform the form of the forbidden word into a legal form such that he can permit himself to “hear” the forbidden word because it is no longer in a forbidden form and thus phonologically speaking is no longer a forbidden word. In other words, he cooks the forbidden word by means of illusionary mishearing in order to transform it into a word that he is permitted to consume. Or in other words, he civilizes the word, as one might put proper clothing on a naked savage, so that it at least looks like it is a legitimate member of society.

So given that the naive linguistics student has decided to deal with the dilemma by means of illusionary cooking, the question is what sort of illusion would do the job. Sapir explains the possibilities as follows.

Two illusions are possible, if the hearer is to be a victim of his phonologic system. Inasmuch as a final accented short vowel is an unfamiliar entity, it can be “legitimized” either by projecting length into it (misheard smɛː and pilːə: fall into class A) or by projecting a final consonant after it (class C). We shall call this imaginary consonant “x” and write smɛːx and pilːəx. (p. 59)

These two possible illusions are of equal standing in the sense that either would solve the dilemma, but in my experience the long vowel illusion is far more common. And it is also formally simpler. This would lead one to suppose that it is the more natural of the two possible illusions for the typical
English speaker. And, as will become clear below, Sapir implies that he considers it to be the more natural solution too.

But before we move on to focus on the consonantal illusion I would like to mention that in regard to the long vowel illusion there is, as Sapir points out, a distortion of phonemic speaking that corresponds to the illusion of phonemic hearing. Just as English-speaking people tend to “hear” a long final vowel in the place of a short final vowel, so too

English-speaking people tend to pronounce words of type D in a “drawling” fashion which transfers them to type A (e.g. amí: for ami).

Now turning to the other logically possible solution to the dilemma, Sapir gives a detailed explanation of the reasoning underlying this illusion.

Now the fact that one has added the glottal stop to his kit of consonantal tools leads often to the temptation to solve the phonologic problem symbolized as $sm\text{Ex}$ and in terms of the glottal stop and to hear $sm\text{E}$/ and $\text{pîla}@@/$. The glottal stop is the most unreal or zerolike of consonants to an English or American ear and is admirably fitted, once its existence has been discovered, to serve as the projected actualization of a phonologically required final consonant of minimum sonority. The illusion of the final glottal stop is essentially the illusion of a generalized final consonant (“$x$”) needed to classify the dictated words into a known category (type C). Or to speak more analytically, English phonology creates the groundwork (-$x$) of the synthetic illusion, while the learning process colors it to the shape of -/. The error of hearing a glottal stop where there is none, in words of type D, is fundamentally a more sophisticated form of the same error as hearing a dictated final glottal stop as $p$ or $t$ or $k$, which occurs in an earlier stage of the acquiring of the phonetic technique. (p. 59-60)

This is a deeply insightful analysis of the reasoning underlying this phonemic illusion, but there is one material aspect of the situation that Sapir failed to notice. His discussion seems to assume that the glottal stop was not available to the students and that they had no knowledge of it before they learned about it in the phonetics class. But this is not true because there are conventionally prescribed glottal stops in English. It is true that the glottal stop is not a fully legitimate phoneme in English, but it is conventionally prescribed in English in various less than fully legitimate functions, and so English-speaking students have unconscious familiarity with it. Indeed, the very fact that the glottal stop is not fully legitimate contributes to its being selected to fulfill the role of the imaginary consonant $x$, which is needed to doctor a form which is not fully legitimate. So upon consideration of the fact that the glottal stop is used in illegitimate ways in English, it becomes clear that the glottal stop is not only the most appropriate consonant to fulfill the role of the imaginary $x$ in a negative sense as Sapir explains (because it is the “most unreal or zerolike” consonant), but it is also the most appropriate in a positive sense because it has already been used to perform similar functions in other circumstances. In other words, the students’ choice of the glottal stop as $x$ is motivated and governed by precedents, i.e., similar cases. In order to appreciate these positively motivating precedents let us briefly consider some of the deviant ways the glottal stop is used in English.

**The Glottal Stop as the Unmarked Deviant Consonant in English**

As I mentioned, the glottal stop is a conventionally prescribed phonological element in English. It is the conventionally prescribed sound in several different types of deviant usages. And thus it is the “correct” sound to use in these situations, but at the same time it is not a fully legitimate phoneme. In other words, although the glottal stop is not an officially recognized phoneme in English (like /p, t, or k/), it is not entirely alien to English either (like distinctive tone, clicks, pharyngeal con-
strictives, etc.). Let us consider some of the more obvious examples beginning with the use of the glottal stop as an allophone of the phoneme /t/.

In English the phoneme /t/ has a central or prototypical manifestation on the phonetic or allophonic level, represented [t], which is a voiceless apical stop. (And, by the way, it is not a coincidence that the same orthographic symbol {t} is used to represent both the phoneme and the prototypical allophone: there is a tacit convention among linguists to use the phonetic symbol which represents the prototypical allophone of the phoneme to represent the phoneme itself.) By contrast, the glottal stop is prescribed as a deviant allophonic subtype in certain circumstances which vary from dialect to dialect. In my dialect the glottal stop can be used as a casual stylistic variant at the end of a word (“It is hot” = [Itsha/]) and it is the normal way to pronounce /t/ before consonants either word internally or at the end of a word, e.g., “button” = [bɔʔn] and “hot tamale” = [haʔtamale]. (Also by contrast, as can be seen, the orthographic symbol that is used to represent the subtypical allophone {ʔ} is different from the symbol used to represent the phoneme {t}: this difference in representation is in tacit recognition of the fact that this allophone is a conventionally prescribed deviation from the conventionally prescribed prototype.) Thus in the allophonic subsystem of the phoneme /t/ in English, the glottal stop is a conventionally prescribed deviation from the conventional standard. So there is a glottal stop in the phonological system of English phonology, but only as a subordinate and deviant allophone of the phoneme /t/. Thus the role of the glottal stop in the allophony of the phoneme /t/ establishes a precedent paradigm where the glottal stop is a deviant /t/. And since the glottal stop is deviant, it is associated with deviance, and thus it takes on value as a sign of deviance.

This is one of the paradigms which charges the glottal stop with the sign value of deviance, but there are several other analogous paradigms. In fact I would suggest that the above paradigm of associations overlays and blends seamlessly with a deeper and more general paradigm of similar associations. The deeper paradigm is a function of the fact that /t/ is the least marked, or prototypical, consonant. Given that /t/ is the prototypical consonant, and given that [t] is the prototypical embodiment of the prototypical consonant, then it follows that [ʔ] is not only the prototypical deviant embodiment of the phoneme /t/, but at the same time [ʔ] is also the prototypical deviant embodiment of the prototypical consonant. Thus the glottal stop is not only a sign of deviance in relation to the phoneme /t/, but it is also a sign of deviance in relation to the prototypical consonant, which is also /t/. As a function of this paradigm, the glottal stop is charged with the much more general value of the prototypical deviant consonant, at least in English. Or in other words, from the point of view of English phonology the glottal stop is the prototypical, or normal, or unmarked, deviant consonant. So when the students find themselves in a situation where they need to come up with an imaginary consonant that they can use to fix up a deviant word, the fact that the glottal stop is the unmarked deviant consonant makes it the most natural choice.

In addition to the above outlined allophonic paradigm, there are several other different types of paradigms in which the glottal stop is charged with the value of deviance. In order to properly understand these paradigms it would be necessary to develop a fuller understanding of how substan-

1. Or as Freud would say, “cathects.”
2. As far as I am aware the unmarked status of /t/ was first pointed out in Trubetzkoy’s *Principles of Phonology* p. 123, where he reasons as follows. First he observes that the most basic consonantal distinction is in properties of location and the basic series is guttuals, apicals, and labials, and that “We do not know of any language that does not have apicals. Gutterals do not occur, for example, in some Slovenian dialects of Carinthia. Labials are absent in Tlingit (Alaska).”
dard levels of conventionalized deviance is organized in the phonology and in the lexicon, but it would be inappropriate to fully explore this dimension of language in the present context. I will, however, briefly delve into this subject in the section entitled “A Brief Introduction to the Semantics and Pragmatics of Phonology” beginning on page 346. And in the context of that discussion I will explore some of the other paradigms which charge the glottal stop with the value of deviance, so I refer the reader that discussion for more examples which reinforce the decision to use the glottal as the imaginary consonant in this particular phonemic illusion.

In concluding the discussion of this example, I would like to address a possible objection to the explanation of this example which I have offered and at the same time show how the consideration of this example leads us into deeper waters. I have suggested that the glottal stop is chosen both because it is the most empty zero-like consonant and because it is the unmarked deviant consonant and that its value as the unmarked deviant consonant derives from several different paradigms at the same time. This kind of explanation might be thought to be in conflict with the following common premise. It is a commonly held premise that the nature of causality is such for any effect there must be one particular cause. I am not in a position to judge whether this is true of physical phenomena or not, but one must bear in mind that we are working under the premise that language is not a physical phenomenon. Therefore in language, we cannot properly speak of cause, but rather of motive. And in regard to the particular issue at hand, namely, the motive for Sapir’s linguistics students to choose the glottal stop as the consonant that it would be most appropriate to imagine, I am suggesting that there is not one factor that causes it to be most appropriate, but rather that a multiplicity of factors contribute jointly and severally, to use the legal term, to its appropriateness. In this regard I want to suggest that the choice of what consonant to imagine in a phonological illusion is governed by exactly the same set of factors that govern the choice of what thing to imagine in a dream. Further, given that the phoneme is an illusion, then the same factors also govern phonology in general. And thus we can take Freud’s theory of the logic and the dynamics which govern dreams, chiefly set out in his *On the Interpretation of Dreams*, as a theory of the logic and dynamics of phonology as well. And in Freud’s theory one of the general characteristics of the logic of dream images is that they are overdetermined. That is, in the realm of images and illusions and dreams, and phonology, an image is selected on the basis of a confluence of numerous different associations such that a single image is charged with numerous different sign values and thus it discharges numerous different sign functions at the same time. Thus it stands to reason that the illusion of the glottal stop would be motivated by the confluence of numerous different associations, as I have suggested.

Finally, I would like to point out that this is not the first time we have come across this idea in this book. This is an idea that we have encountered many times, but this is a new perspective. This phenomenon of what Freud called overdeterminantion, where many different associations and values and functions come together in a single sign, is another way of looking at what Freud called the primary process function of condensation. This is the semiotic function which Jakobson called similarity. And it the sign function that Peirce called iconicity. And in Peirce’s terminology for the natural logic of categories, it is the logic of the category of firstness.
The Implications of the Phonemic Illusion for the Science of Linguistics

In concluding this discussion of Sapir’s argument for the psychological reality of the phoneme, I would like to point out that the fact that the phoneme is an illusion has profound implications not only for the way we frame the theory of language as a formal, symbolic object, but it also has profound implications for the way we frame the research program of the science of linguistics, and science in general.

First let us look at the scientific quest from the most general point of view. In general, the scientific enterprise is a quest for the secret knowledge of mother nature. The scientific enterprise is commonly thought of in semi-mythological terms as a quest the unknown secret of life or happiness or power or wealth, where the scientist is an adventurer, like Odysseus or Colombus or Neil Armstrong, who dares to go where no man has gone before in order to discover and gather and bring back the golden fleece or just plain gold or a treasure trove of knowledge. Of course this kind of new knowledge is an important part of scientific thinking. It is the empirical foundation of science. It is the food and drink of science. But as a matter of fact from the very beginning of the scientific enterprise, which modern philosophers and historians of science commonly dated from Copernicus and Galileo, the essential problem has never been a lack of factual knowledge, but an inability to digest the body of knowledge that is already available. The problem is that Wisdom hath already prepared her feast, but we human beings have always been inhibited from partaking of the feast by the strictures of conventional thinking. Thus, while new empirical facts are important, the essence of the scientific quest has always been the struggle against the predominant conventional worldview. And this implies that the quest of science in general and of the science of linguistics in particular is essentially the struggle against the illusions of language. Or in other words, the essence of the scientific struggle is between mother nature and our mother tongue.¹

Sapir’s argument fits nicely into this view of the quest of science and of the relation between the conventional point of view and the scientific point of view. And it also demonstrates that the confusions and inhibitions of thinking that are a function of our language are not limited to large and distant things such as planets and stars, but also include small and near things such as the sounds that come out of our own mouths. So the implication of Sapir’s argument for the science of linguistics is that the essential problem of linguistics is not one of gathering more data, but of overcoming the confusions and inhibitions of our own language. So while it is important to go out to new foreign places to discover new languages and to gather new data, the essential task of linguistics to go in to explore the old foreign places in our own minds in order to try to break free of the old illusions, confusions, and inhibitions of our own language.

I would like to point out that Sapir was aware of these implications too. He elaborated the implications of his thinking for the discipline of linguistics in another essay thus:

¹ There is nothing new in this characterization of the quest of science. One can plainly see this dynamic in the story of Galileo’s excommunication for asserting that the earth moves. This is the story of the Trojan Horse. This is the story of Einstein’s rejection of Euclidian geometry. This is the story of Jonas Salk. This is the story of Freud. Etc. The significant events in the history of science have not been the gathering of data, but the breaking of conventional presuppositions. For a philosophical characterization of the scientific struggle see the venerable Burtt’s classic The Metaphysical Foundations of Modern Science (1924). For a more recent characterization in terms of paradigms see Kuhn’s influential work The Structure of Scientific Revolution (1962). And more recently see Paradigms and Barriers: How Habits of Mind Govern Scientific Beliefs by Margolis (1993)
It is highly important to realize that once the form of a language is established it can discover meanings for its speakers which are not simply traceable to the given quality of experience itself but must be explained to a large extent as the projection of potential meanings into the raw material of experience. (SW p. 10)

Language is a heuristic... in the sense that its forms predetermine for us certain modes of observation and interpretation. This means of course, that as our scientific experience grows we must learn to fight the implications of language. (p. 10, emphasis added.)

Language is at one and the same time helping and retarding us in our exploration of experience (p. 11)

So the linguistic enterprise is essentially the struggle to escape from the illusory seductions, or the seductive illusions, of language, which begin with the most basic illusion in language, which is the phoneme. Thus we see that the phoneme is a duplicitous representation.

And, of course, as we have seen, there is another level of representation below the phoneme in the thinking of linguists, which is the phonetic level of representation. And this representation, like all representation, is also problematic.

**The Phonetic Illusion**

From the very beginning of the science of linguistics, that is, as soon as linguists had realized that the basic element of language is the phoneme, and as they were trying to understand what sort of thing the phoneme is and how it is related to reality, they discovered that there are systematic sub-phonemic variations, which came to be called “allophones” and which were represented in terms of what is commonly called an allophonic or broad phonetic transcription. We can illustrate the type of facts that are at issue here and the line of reasoning by comparing the sonograms of the word “see” and the word “sIn terms of the example we have before us, if one compares the sonogram of the sound underlying the phonemic sequence /si/ “see” with the sonogram of the sound underlying the phonemic sequence /su/, written “Sue” or “Sioux”, as represented in Figure 39, it is obvious that the sounds of the vowels are different, as would be expected, since they are different phonemes, but the
sound of the /s/ in one word is also different from the sound of the /s/ in the other word, although the two are instances of the same phoneme.

So there are some differences in the sound that count in language as differences in distinguishing meaning and some differences that do not count. In other words, the former differences are unpredictable, and the latter are predictable. In this case the difference in the pronunciation of the /s/’s is predictable as a function of the difference in the pronunciation of the following vowel. So in order to sort out the differences that are there in the sound but don’t count from the differences that are there in the sound and do count a sub-phonemic level of representation was posited. At this new level of representation we can represent the predictable phonetic differences. In this case the voiceless unrounded apical sibilant (the one that occurs before [i]) can be represented as [ç] and the voiceless round blade sibilant (the one that occurs before [u]) can be represented as [s]. And in order to distinguish levels of representation the orthographic convention was adopted such that letters bounded by the slash represent phonemes, e.g., /i/ and letters bounded by square brackets represent allophones, e.g., [i]. It is in terms of this system of conventions for representing the phonology of language that linguists typically think of the lowest level of the phonology of language. Thus linguists normally think about the basic phonology of language in terms of an allophonic or broad phonetic transcriptions in relation to a phonemic transcriptions as represented in Figure 40.

FIGURE 40. The Sophisticated View: The Phonemic/Allophonic Relation

Now the point I want to make is that allophonic representations are representations, just as much as phonemic representations are representations, and as such they are just as duplicitous as any other representations. So when linguists think about the basic phonology of language in terms of allophonic or broad phonetic transcriptions, they are committing exactly the same kind of error as when the naive speaker thinks of the phonology of language in terms of phonemes or letters. Allophones are not sounds, they are categories or types of sounds. So when linguists think of the basis of phonology in terms of allophones they are unconsciously superimposing those categories over the real basis of phonology and thus exclude the real basis of phonology from their awareness. To put it another way, the sophisticated conceptualization of the basis of phonology in Figure 40 covers over and represses the real basis of phonology as represented in Figure 34 just as effectively as the naive conceptualization in Figure 35 does.

In pointing out this error I do not mean to imply that linguists are totally unaware of the fact that allophonic representations are not the real basis of phonology. But the fact of the matter is that the allophonic level of representation is another level of representation that does in actual practice sometimes obfuscate our thinking about the fundamental basis of phonology. When linguists become
aware of the limitations imposed and the misconceptualization induced by the allophonic level of representation and when they try to get at the reality underlying the allophonic level, they usually focus upon the sound that underlies the allophonic level taking that as the basis of the phonology of language. If we let a sonogram of the sound represent the actual sound itself, then we could represent this more adequate conceptualization of the basis of phonology as in Figure 41.

This view of the basis of phonology is obviously deeper and more comprehensive. A sonogram such as the one represented here is a representation of the energy that is actually expended in a particular speech act. The shading represents the amount of energy (the darker the shading the more the energy), the vertical scale represents frequency (the higher the higher), and the horizontal scale represents time (left to right). So what I am trying to represent here by using a representation of a sonogram of these two pronunciations is the idea that the basis of language underlying an allophonic or broad phonetic transcription is the energy of vocal sound.

This conceptualization is better because a sonogram is not a representation of a category of phenomena, but is rather a representation of an actual specific event, a real thing that really happened in real time. It came, it happened, and it disappeared, never to be heard again. In this way the fact that the fundamental basis of language is not types of things, nor tokens of things, but individual actual real things is at least within the scope of our awareness. This forces us to be aware of the fact that each time the same word is pronounced what occurs in reality is a distinct individual unique event. In other words, it forces us to be aware of the fact that language functions by imposing judgements of sameness upon streams of sound that are actually different. Thus it forces us to see the illusionary function of language: it is an illusion to think that two things are the same when they are actually different.

While this way of looking at language is better, it is still does not quite get down to the most fundamental basis of language. It is true that language is embodied in and conveyed in the medium of sound, but it would be a mistake to take sound itself as the ultimate basis of language. The conceptu-
The Raw and the Cooked

I would like to return to consider in more detail the fact, mentioned above, that the ordinary conventional conceptualization of food in English in terms of the opposition “raw/cooked” is used in the technical language of linguistics as a metaphor for the “phonetic/phonemic” opposition. For example, linguists commonly refer to sonograms and even broad phonetic transcriptions as “raw data.” As I also mentioned above, the raw/cooked conceptualization of food is misleading, and here I want to point out that the linguistic conceptualization of phonology in terms of the “phonetic/phonemic” relation as represented in Figure 40 and/or Figure 41 is also misleading in exactly the same way. Therefore, I suggest that we can use the raw/cooked misconceptualization of food as a metaphor to help us understand the phonetic/phonemic misconceptualization of phonology.

The misconceptualization implicit in the raw/cooked metaphor as used in this way is that it is equivalent to the natural/processed distinction, but the fact is that it is not equivalent. “Raw data” is commonly supposed to be the empirical basis of scientific inquiry, the unprocessed natural brute facts; but it only takes a moments consideration to realize that in the realm of food the “raw” state is not the same as the natural unprocessed state. The difference is clearest in regard to meat: a living cow is the natural unprocessed state of the type of food we call “beef”, but we cannot speak of a cow as being raw. In order to be called “raw” or “meat” or “beef” a cow has to be processed, transformed in a culturally prescribed way that converts it into a form that is considered to be suitable for food. In a word, the cow has to be civilized. This process of transformation is as follows. First, there is a prohibition against eating living things in our culture, so the cow must be killed, and since there is also a prohibition against killing in our culture, the cow should be killed by someone else in some other place, so that at least the killing is out of our sight so that we can keep it out of our mind when we are eating it. So to be precise, the prohibition which motivates this civilizing process is not really against eating living things or killing them, but is rather a prohibition against knowing about it. Then in order to further obscure the crime which we want to dissociate from the food, all of the natural signs of life, such as shit, blood, internal organs, eyes, hair, feet, horns, etc., must be removed. Third, in keeping with this objective, it is considered to be better if the pieces do not retain the shape of the parts of an animal, so that we would not have to buy and eat a “piece of cow leg” but rather we can buy and eat a “steak” or a “roast.” The ultimate stage of the process of civilizing the cow is to grind the pieces of the cow up into a formless mass, which we then call “ground beef” or “hamburger”, but not “ground cow”, so that it retains no resemblance whatever, even in name, to a living animal. So the raw state is far from the natural unprocessed living state; it is in fact the next to the last step in the lengthy process by which we transform food from its natural state to the
civilized form which we require for our food. Then the last step in the civilization of food is cooking. In sum, “raw” does not mean “natural” but rather, precisely, “uncooked.” In other words, the raw state is a situation that is calculated from the point of view of the cooked, and projected back from the finished state to the prior state. So although the raw is chronologically prior to the cooked in any particular situation, the raw state is conceptually subsequent to the cooked state. And, of course, “uncooked” does not mean the same thing as “natural.”

These facts are manifest in the grammar of English in a variety of ways. First, note that the expressions “raw beef” and “raw meat” are grammatical, but “*raw cow” is as incoherent as “*uncooked cow” or “*naked cow.” Second, we have mentioned a number of the euphemistic effects of this dynamic in English food terminology. Third, if “raw” means the same as “uncooked”, then the formal relations between these words implies that the raw is marked in relation to the cooked. That is, if “uncooked” is derived from “cooked” by adding mark “un-”, and if “raw” = “uncooked”, then “raw” is derived from “cooked.” One can see the manifestation of this markedness relation in the paradigm of “un-” negation. The prototypical paradigm is established by the most primitive opposition, which is the true/false opposition, such that the true can be defined as the false, but the expression “untrue” is logically impossible. Here are some other adjectival paradigms.\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>unmarked</th>
<th>marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>positive</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>negative</td>
<td>untrue</td>
<td>*unfalse</td>
</tr>
</tbody>
</table>

As can be seen in the following, the cooked/raw relation conforms to this paradigm.

<table>
<thead>
<tr>
<th>cooked</th>
<th>raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>uncooked</td>
<td>*unraw</td>
</tr>
</tbody>
</table>

And if the raw is marked in relation to the cooked then that implies that the raw is conceptually subsequent to the cooked. But then there would be the following paradox: in terms of the stages of processing meat, the raw state is chronologically prior to the cooked state, but in terms of conceptual priority, it is subsequent. While this paradox might be confusing, and problematic for the conventional worldview, it is not without precedent. For example, it is a matter of common knowledge among linguists that, although in the conventional worldview the past is chronologically prior to the present, in the structure of language the past form of the verb is marked in relation to the present form, and thus in the unconscious semantics of language the past is subsequent to the present. Aside from the compelling empirical evidence\(^2\), this way of thinking about it makes perfectly good sense:

\(^1\) Osgood, et al, (1975) discuss this paradigm, review the literature, and cite evidence from their cross-cultural research, p.363.
the fact is that what is past does not exist any longer; whatever does exist, exists in the present; therefore, the past exists only as a projection from the present. In the same way, the raw state is conceptually subsequent to the cooked state. The raw state is not a natural state in its own right but is a stage in the process of cultural transformation whose end is the cooked state, so the raw is strictly speaking a pre-cooked state.

So in sum, the raw/cooked distinction is subsequent to the living/dead distinction. First is the living state, then the dead state, and the raw/cooked distinction is a distinction within the category of the dead. We can represent this complex of relations in the food metaphor as in Figure 42. And, in order to explicitly represent the food metaphor as it relates to phonology, we have also included representations of the elements of phonology as they correspond to the elements of the food metaphor in Figure 42. Let me explain what I intend to convey by this representation.

First, in order to avoid any possible confusion it should be stated explicitly that not all of the stages in the process by which the living is transformed into the cooked, as discussed above, are represented in Figure 42. The ones that are not represented are not excluded because they do not take place, nor because they are not important, but rather for the sake of simplifying this discussion we

2. Battistella (1990) is a recent review of the evidence: “The past tense is marked with respect to the present.” (p. 3)
will leave out the intermediate stages, because they are not immediately relevant to the raw/cooked metaphor, and the purpose of this discussion of to analyze the misconceptualization of this metaphor. So Figure 42 only represents the three essential points of reference in the food metaphor - the raw, the cooked, and the original state, which is the living animal. The intervening stages between the living and the raw, such as the killing and the gutting of the animal, can be thought of as still being covered and hidden under the cooked and the raw.

**The Breath as the Basis of Language**

So the ultimate point I want to get at in regard to the phonological basis of language, and what I intended to represent in Figure 34, is that language is ultimately grounded in the living human body. And to be specific, language is grounded in the breath of a living human being. Even more specifically, in the words of the phonetician Bertil Malmberg (p. 16):

> The noises utilized in human language are produced by different modifications of the air stream coming from the lungs. The air stream is either constricted so as to produce friction, or else stopped momentarily and then suddenly released (“explosion”). It is known that if we disturb the air contained in a cavity by means of an air current - in our case the pulmonary air current - this cavity emits a sound.

So the sound produced by the manipulation of the breath is the basis of language.

So the point of using breathing as a metaphor for language is that, even at this lowest level of language, when the breath is used in language the breath is cast in a duplicitous role. Prior to language, breathing is a natural process. It is an integral part of the vegetative and chemical processes of life, not only for human beings, but for all other animals as well. So breathing is not only natural, but it much more primitive both ontogenetically and phylogenetically than language.

Further, breathing is a necessary part of the process of living, even more important than eating and drinking, because a person can go without water for a day or so without serious consequences, but if a person could not breath for even a few minutes, he would die. Indeed breathing is so commonly considered in so many different cultures to be the very life-force, that I would venture to suggest that to identify breathing as the life-force is a linguistic universal. In English, for example, the word “spirit”, which was borrowed into English from Latin *spiritus*, meaning “breath”, is defined as “the vital principle or animating force within living beings.” And the fourth definition of “to breathe” in the Oxford English Dictionary is “To draw the breath of life; to live, exist.” Conversely in the same vein, “he expired”, which literally means “he breathed out”, is used in English to mean “He died”. And the same family of associations can be seen in many many other languages. So prior to language the primary value and function of the breath is that of the essential life-force.

So breathing is first a natural and necessary function of life. And thus the use of the breath in language is a secondary, artificial function which is superimposed upon its natural primary function. Like the dove that is used to represent peace, the breath is a vital aspect of human life that is captured and harnessed and put to work representing and conveying symbolic entities, which have no natural body of their own. In this way, the human breath is captured so as to be used as the embodiment of symbolic entities. The breath comes to be manipulated for ends that are totally independent of its natural ends, and in ways that are systematically in conflict with its natural ends. In the words used by
The Breath as the Basis of Language

Malmberg in the above quote, in the service of language “the air stream is constricted”, “modified”, “stopped momentarily and then suddenly released”, and “disturbed.” In general, to use the breath in language is to interrupt or interfere with the natural process of breathing in one way or another. Even the fundamental ground of language, the voice, which is the sound of a vowel, is produced by means of an artificial build up of pulmonic pressure that is created by the conflict between the breath pushing out and the resistance of the partially closed vocal chords. Obviously such artificial conflicts inhibit the free and spontaneous flow of the breath. In this sense the breath is not only used in representing language, but it is to some extent used up, wasted. And in this sense, the breath is spent, one might say, sacrificed, in the service of symbolic ends. The breath, which is the vital force of life, is thus confiscated and colonized and sacrificed by language. And in this process of civilization or politicization of the breath we see the beginning of language and the beginning of the captivity of the subject to which Lacan was referring when he said

**MAN IS THE SUBJECT THAT IS CAPTURED AND TORTURED BY LANGUAGE.**

Here in the deepest level of the phonology of language, where we see the breath used to embody symbols, we find the most fundamental foundation of language, which is the most fundamental duplicity, which is the most fundamental substitutive sacrifice, which is the origin of human confusion and captivity and suffering. And thus in the deepest level of phonology we can see how it is that the two objectives set forth at the beginning of this book - understanding language and liberating ourselves from the captivity and torture of language - are one and the same. And thus it follows that both an adequate theory of language and an effective method of liberating ourselves from the captivity and torture of language must be based on an understanding of the misguided strategy of substitutive sacrifice of the breath. Therefore, as I have been saying from the beginning, there are not two totally different problems here, a theoretical one and a practical one, but one single problem, which is at bottom the problem of the duplicitous sacrifice of the breath.

Nevertheless, the problem is manifest on two distinct levels, and so it makes sense to talk about the implications of this realization on the two levels separately. Therefore I will bring this chapter to a close by briefly discussing the implications of the realization that the breath is the basis of language on these two levels. On the practical level, the essential implication is that the breath is, to borrow Freud’s expression, the royal road to liberation. On the theoretical level, the essential implication is that the form and the semantics and the pragmatics of language are ultimately a function of the breath. Or, in short, language is a function of the breath. I will discuss these implications in the next two sections.

**The Breath as Means of Liberation**

One line of implication that follows from the above argument is this: If the colonization of the breath by language is the way by which man is captured and tortured, then the liberation of the breath is the way by which man can attain freedom and end the torture. As a matter of fact this is not a new discovery. This was discovered by the Buddha some four thousand years ago. And that is why the Buddhist way of liberation centers upon the study of the breath.

We will not be able to explore this line of thought in detail here but I will briefly outline Buddhist reasoning as it relates to the present undertaking. First, let us note that the first teaching of the
Buddha, the first turning of the wheel of dharma, is called “The Four Noble Truths”. Before we even look into this teaching, we can see from its title that the Buddha frames the human problem in the context of truth, and thus by implication in the context of the conflict between the truth and the false. And without going into the details of these four truths let it suffice here to note that the first truth is that there is a universal human problem of suffering, and by implication it is this universal problem that is being addressed. And also let us note that the fourth truth is that the solution to the problem is correctness, which implies, in keeping with the first truth, that the problem is a function of believing false things. What is not entirely explicit in this first teaching is exactly how one gets at truth and correctness. And this is not by chance, for part of the point is to turn one’s thinking away from the theoretical view of the problem so as to focus upon the practical view of the problem.

In order to see the Buddhist characterization of the human situation in more analytic terms, we will consider some of the teachings of Chögyam Trungpa, a renowned contemporary master of the tantric school of Buddhism. To begin with, the human problem is considered to be a function of mind, which is defined as follows.

In Buddhism, mind is what distinguishes sentient beings from rocks or trees or bodies of water. That which possesses discriminating awareness, that which possesses a sense of duality - which grasps or rejects something external - that is mind. Fundamentally, it is that which can be associated with an other (1991, p. 23)

Looking at this in the present context, we can already see intimations of the logic of duplicity. And what is more,

mind is the cause of confusion (1991, p. 21)

Note that the realm of mind as defined here is the same as the realm of signs as defined in Peirce’s theory of signs as discussed above. And note particularly that mind is a function of duality. And the confusion that results from the misunderstanding of dualism is the crux of the problem:

The dualistic misunderstanding occurs right at the beginning so when you try to correct it, it just develops into further misunderstandings. (1991a, p. 79)

Mind contains perception and

Mind develops its own peculiar nature as that perception begins to linger on something other than oneself. Mind makes the fact of perceiving something else stand for the existence of oneself. That is the mental trick that constitutes mind. In fact, it should be the opposite. Since the perception starts from oneself, the logic should be: “I exist, therefore the other exists.” But somehow the hypocrisy of mind is developed to such an extent that mind lingers on the other as a way of getting the feedback that it itself exists, which is a fundamentally erroneous belief. It is the fact that the existence of self is questionable that motivates the trick of duality. (1991, p. 23)

Note that what Trungpa is describing here as the crux of the human error, the “mental trick”, is exactly the same as what Jacques Lacan describes as the crux of human error in terms of the logic of “mirror stage” identification. In another place Trungpa describes this mental trick in terms more directly akin to those used here.

The problem is that we are involved in a continual struggle to survive, to maintain our position. We are continually trying to grasp onto some solid image of ourselves. (1911, p. 22)

So the crux of the problem is the erroneous tendency to take an image of ourselves as a reality.

And the therapy is implicit in the characterization of the problem.
All sects and schools of Buddhism agree that we must begin by facing the reality of our living situations. (1988, p.1)

In other words, truth is the antidote. But how does one get at truth?

we express our willingness to be realistic through the practice of meditation...which is simply the creation of a space in which we are able to expose and undo our neurotic games, our self-deceptions, our hidden fears and hopes. We provide space through the simple discipline of doing nothing. (1988, p. 2)

And the practice of meditation functions something like a magnifying glass. By slowing things down it makes them easier to see. So one comes to focus on bodily conditions such as tension and pains and eventually the continual coming in and going out of the breath. Thus the breath becomes the central focal points in the practice of meditation.

Breath, like bodily existence, is a neutral process which has no “spiritual” connotations. We simply become mindful of its natural functioning. (1988, p. 2-3)

And in another place:

The basic technique that goes with sitting meditation is working with the breath. You identify with the breath. The inbreath is just a gap, a space. During the inbreath you just wait. So you breathe out and then you dissolve and then there is a gap. Breathe out ... dissolve... gap. An openness, and expansion, can take place constantly that way. (1991, p.30)

The benefit of this observation of one’s breathing, which is an increasing awareness of how one’s breathing is inhibited and captivated by imaginary and symbolic functions that have nothing to do with the inherent natural function of breathing, does not come about as a result of something that one does, but rather it comes about as a result of

the force of the actual fact of being there.

In other words, if we let some open space to develop, if we cease from filling in all of the blank spaces with words, if we cease from expending our breath in maintaining the symbolic facade, the force of truth makes itself known spontaneously by itself. Thus the breath leads to the truth and the truth will make you free.

Finally, I would like to point out that the end of Buddhist meditation is nirvana, a Sanskrit word which is commonly understood, or rather misunderstood, as “death” or “annihilation”, but in fact means “to breathe out.” And the word “Buddha” means “awakened.” It is the past participle of bhodati “he awakens.” So to let the breath go is to awaken is to attain freedom. This is how the breath functions as the royal road to liberation.

The Breath as the Basis of Value in Phonology

Three points:
1. Below the level of form there is a level of semantic value and a level of pragmatic value in phonology.

2. Linguists have tended to focus on the formal aspects of the phonology of language to the exclusion of the semantic and pragmatic levels.

3. The ultimate basis of semantic and pragmatic value in language is the breath.

    Phonological value is a function of the relationship between the natural undisturbed flow of breath vs. disturbance of breath, restriction, interruption, conflict, inhibition, etc.

The most natural, and most unmarked, state of the breath is undisturbed breathing. By contrast, the degree to which a phonological element is marked is a function of the degree to which it deviates from natural breathing. See Trubetzkoy p. 146

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**A Brief Introduction to the Semantics and Pragmatics of Phonology**

Jakobson said,

> The phoneme, although it is an element at the service of meaning, it itself devoid of meaning. (Six Lectures, p. 109)

Note by the way that this tripartite categorization follows from Peirce’s logic of categories. The lowest level is first because it involves only one relational element, the speaker. The second level is second because it involves two relational element, the speaker and the addressee. And the third level is third because it involves three relational elements, the speaker and the addressee and a symbolic representation that mediates between them.

In order to understand the sense in which these other usages are deviant we must understand how conventionalized deviance is organized within the conventional framework. The conventional organization of deviance is a general phenomenon, but we will be looking specifically at the way deviance is structured in the lexicon of English. In the naive view the lexicon of English, or any other language, is like a dictionary, i.e., a list of the words that are considered to be conventionally legitimate and well-formed in English. The idea is that the lexicon is a discrete and homogeneous category. That is,
the naive view assumes that for any possible word it either is absolutely legitimate or it is absolutely not legitimate and if it is legitimate, then it is just as legitimate as any other word. In other words, the naive view assumes that there are neither degrees of legitimacy nor degrees of illegitimacy.

However, when you look at the lexicon from the point of view of reality the facts are more complicated. To begin with, there are three categories:

1. The central category of the lexicon, which consists of words that conform to the conventionally prescribed ideal standards of English,
2. A complex system of subcategories and subsubcategories, which consists of words or word-like sounds that deviate from the ideal standards in different ways and to varying degrees, but are still conventionally prescribed in English, and
3. All other sounds not specifically prescribed as English words, which includes words of other languages, animal sounds, and all other natural sounds such as thunder, etc.

Instead to trying to explain this complex system discursively, let us try to demonstrate it in terms of a specific example.

As I said, words can be illegitimate along various different axes. One of the general systems of illegitimacy is a function of the different ways in which words can mean. Referring to the theory of signs as discussed above in Chapter 2, recall that there are three types of signs - iconic, indexical, and symbolic - as represented in Figure 3 on page 75. Recall that these types of signs differ as to the way in which the sign refers to its referent - similarity, contiguity, and convention. Now given this frame of reference, it is only natural that the core of the vocabulary of language, which is a symbolic system, should consist of words that refer to their referents in the symbolic way, i.e., by virtue of convention. Thus from the conventional point of view the only fully legitimate words in a language are those which refer to their referent solely by convention. Or, in other words, from the conventional point of view, which is the symbolic point of view, the ideal type of word is one whose meaning is entirely arbitrary, such as “the”, “dog”, “bark”, and “Monday.”
But below the level of the conventional core of the lexicon there is a vast underground system of meaning, a kind of semantic black market, in which words are endowed with semantic values that are not entirely arbitrary: they have value as a function of natural indexical and/or iconic associations. So from the conventional point of view these words are less than ideal, to put it politely. More bluntly, they are more or less subnormal, deviant, illegitimate. Nevertheless, while these underlying semantic values are illegitimate from the point of view of conventional law, they are motivated and legitimized by natural law, and yet they are not entirely a function of natural law either. The subsystem of conventionally illegitimate words is governed by a subsystem of conventional law, and technically speaking this subsystem of conventional law is a subset of conventional law, and therefore, in so far as conventional value is arbitrary, this subsystem can be characterized as more natural. We will discuss this illegitimate subsystem of value in more detail below in the section “The Breath as the Basis of Value in Phonology” beginning on page 345. For now we will just illustrate the general idea in terms of one particular kind of illegitimate meaning, which is known as “onomatopoeia.”

Let us begin with a concrete example. Consider Figure 44.

**FIGURE 44. An Example of Conventional vs. Onomatopoeic Meaning**

Note prevalence of labiality in onomatopoeic levels, Universe¹ and Universe². Can you imagine a dog saying “rrrruuuk” or “rrrruuus” or “rrrruuut”? 
The first example. As we noted, the glottal stop is not a fully legitimate phoneme in the core of the lexicon. The core of the lexicon consists of words that are symbols, i.e., words that have conventional referential meaning like “duck” and “fly” and “Tuesday.” However the glottal stop does occur as a distinctive phonological element on various substandard levels of the lexicon, where words are heavily freighted with iconic and/or indexical value rather than the conventional symbolic referential type of meaning. One class of substandard words is commonly known as “exclamations.” An example of an exclamation with a distinctive glottal stop is “Oh-oh.” The fact that this is not a fully legitimate word is evidenced by the fact that it is not listed in most dictionaries. For example, it is not in the largest version of the American Heritage Dictionary, third edition, though it is listed in the OED. The fact that it is an abnormal word is also evidenced by the fact that the word cannot be morphologically inflected or otherwise integrated into a standard grammatical context, except as a kind of play. And play is play, of course, precisely because it violates the rules. For example, such sentences as

*He oh-ohed me.
*Three oh-ohs and we run.

are literally ungrammatical. They can only be understood as elliptical derivatives of

He said, “Oh-oh”, when he saw me.
If we hear three people say, “Oh-oh”, then we will run.

Thus the word “Oh-oh” is not a fully legitimate word.

This word is normally pronounced [ô?o] (the second vowel is at least twice as long as the first and there is a distinctive step down in tone from the first vowel to the second vowel, and, with a somewhat less ominous flavor, the last vowel can have a high tone, thus [ô?o]). This word is used to give voice in English to the experience of realizing that something unexpected and unpleasant is about to happen, like when you see a large truck coming at you on the wrong side of the highway. “Oh-oh” is closely akin, in the sense of being opposite in meaning, to the exclamation “Ah-Hah”, [àhà], which is used to give voice to the experience of realizing something that you have been looking for and which is desired, like when you see the restaurant you have been looking for. And also aking to these words is “Ouch”, which is the English word that is used to give voice to the experience of feeling of pain. So taking all three of these words into consideration, the point I want to make here is that although the word “Oh-oh” is not a fully legitimate word from the conventional point of view, it is still a conventionally prescribed word with conventionally prescribed phonological shape. We can represent this situation in the framework of duplicity as in Figure 45.

And it goes without saying that the corresponding expressions in other languages are quite different. Thus even deviant words are conventionally prescribed, so one is not free to give voice to the experience of pain or to the discovery of something bad or something good in any way one chooses. In English one cannot give voice to the discovery of something bad by saying [opo] or [oto] or [oko] or any thing else, either similar or dissimilar. We are obliged to express this experience in English using this exactly specified word, in which the glottal stop is a distinctive element, and thus the glottal stop is one of the ways in which this word is marked as an abnormal word. And thus in this paradigm too the glottal stop is charged with the value of deviance.
The second example. In English the proper and formal and official word for affirmation is “yes” and the proper and formal and official word for denial is “no.” One evidence of the official status of these words is that, if one testifies in a court of law, one is obliged to use these words, as opposed to any of the various less formal and less proper variants. For example, the judge will commonly admonish witnesses who use the informal “yeah” [ya] instead of the formal “yes” [yes]. There is an even more deviant variant of “yes”, namely, “yup” pronounced [yəp], in which the final consonant, being more closed, conveys a stronger degree of certainty in the affirmation. That is, it is possible to pronounce “yes” or “yeah” in such a ways as to equivocate in the affirmation, i.e., [yēes] and [yāa] (with an elongated vowel and rising tone), but [yəp] sounds very strange because the meaning of the vowel and the meaning of the final consonant are in conflict, the one conveying equivocation and the other conveying certainty. And there is an even more curt and thus even more forceful variant
in which the final $p$ is reduced to a glottal stop thus $[\text{yəʔ}]$. And as would be expected, whereas $[\text{yəʔ}]$ is phono-
tically possible, it is so bluntly contradictory that it is just not possible as English. But details aside, the immediate point is that the glottal stop is a distinctive characteristic of one of these sub-
standard and deviant varieties of “yes.” And thus the glottal stop again is charged with the value of devi-
ance from the official conventional point of view.

There is another type of deviation from the standard “yes” and “no” paradigm. Most dictionar-
ies do not even list these words but they are sometimes written “Uh-huh” and “Uh-uh” and they are
pronounced $[\text{ʔhã}]$ (nasalized vowels with a step up in tone) and $[\text{ʔɪʔã}]$ (with a step down in tone). And
there are even more casual or lazy variants of these words $[\text{mɨhɪ}]$ and $[\text{mɪʔm}]$ respectively. Now in
regard to this paradigm the glottal stop is deviant on two levels at the same time. In order to sort these
various levels out I will represent this paradigm in terms of the logic of duplicity as in Figure 46.

First, as in the above examples, these words belong to a deviant sublevel of the vocabulary. Thus, as
in the above cases, the glottal stop is associated with deviance because it only occurs on deviant lev-
els of the vocabulary. Second, both of these pairs of words are phonemic minimal pairs such that the
only segmental difference between them is the contrast between the glottal stop and the glottal con-
tinuant in the first case and between the glottal stop and nothing in the second. So continuity, or con-
tinuing to do the same thing, or doing nothing (which is a different way of looking at continuity$^1$) conveys the idea of agreement or a willingness to go along, whereas the glottal stop conveys the idea of
disagreement or interruption or unwillingness to go along. Thus we can see in this minimal pair
that on the iconic level the glottal stop is charged with the value of deviance.

1. In a court of law for example the lack of an explicitly objection is taken as agreement.
In exclamations and childish words

In a totally different kind of function, and one which is of some relevance to the present case, although the glottal stop does not occur as a phonologically distinctive element in any ordinary referential word, it does occur as a distinctive element in some conventionalized *** such as “Oh-oh!” [ɔʔɔ], which by the way is phonetically identical to the [ɔʔɔ] of “Go open the door.” And in a similar function it occurs in the informal negative “Huh-uh” []. Note that

Of particular relevance to the present case the following two types of glottal stop are most important because they establish the semantic and formal pattern which makes the glottal stop most appropriate to serve as the imaginary consonant in this case. First, the glottal stop occurs in certain variants of foreign words such as “Hawaii” which have been borrowed into English, where the sequence of vowels at the end is forbidden in English, so it is pronounced as [hawayi] or [hawaʔi]