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Spooky Grammatical Effects

Joseph Davis

The idea in linguistics that the absence of an overt structural element can have real consequences — that *nothing* can be *something* — may perhaps forever and rightly be analytically suspect. But it does have a long pedigree and a successful track record. For instance, various null elements have been proposed in phonology, morphology, and grammar. And, in addition to discrete null elements, there are broader types of structural distinctions involving the absence of overt structure. Evidence continues to support the position that structural absence has a role to play in linguistic theory. And linguistics is far from unique in this respect; absence plays roles in such other realms of human experience as physics, mathematics, sport, music, and anthropology.

Any misgivings in linguistics about the absence of substance have august precedent. Albert Einstein's discomfort with the idea in quantum mechanics that measurement of a particle in one place can have an effect on a particle in a completely different place was famously expressed in his phrase "spooky action at a distance." Yet experimental evidence has long since backed up the notion of such "entanglement" of particles. Similarly in linguistics, decades of work

have supported the position that nothingness is a force to be reckoned with.

There is no need now, therefore, for a paper laying out a general theoretical consideration of nullity in linguistics, and certainly no need to justify the practical uses that have been made of various nulls. This paper, instead, will trace a development from the very early days of the field to the most recent developments in Columbia School and variationist linguistics. This is the path that leads to the work of Ricardo Otheguy and that stands to inform the work of linguists who will continue to benefit from his influence. This path runs from the American Descriptivist null or zero element in phonological and morphological paradigms, through the empty categories of later formal syntax and — contemporaneously but not compatibly — the organization of Columbia School's grammatical systems, extending then to more recent work that expands Columbia School theory and to Otheguy's own constructive critique of variationist linguistics. In terms of forebears to Otheguy, this treatment will touch upon, among others, Saussure, Bloomfield, Harris, Chomsky, Diver, Labov, and García. Throughout the paper, analogies will be made with other, nonlinguistic human behaviors, in keeping with the view that human language, far from being modular, is instead "entirely

consistent with the way any other form of everyday human activity is carried out” (Diver, 1995/2012, p. 485).

1. The null in mathematics

While quantum mechanics represents human efforts to understand physical phenomena, the null — or empty, or zero — element has played an important role too in fields that deal with human mental concepts. So mathematics, for instance, has its *empty set*. Consider the three simple equations and the sets of solutions each has in real numbers in Diagram 1.

Diagram 1. Null in mathematics

| | I | II | III |
|--------------|--------------|------------|-------------|
| Equation: | $x^2 = 9$ | $2x = 0$ | $x^2 = -1$ |
| Solutions: | $\{-3, +3\}$ | $\{0\}$ | $\{\}$ |
| Size of set: | 2 solutions | 1 solution | 0 solutions |

Equation I has two solutions, -3 and +3; that is, the set of solutions to Equation I has two members. Equation II has one solution, the real number 0; the set of solutions to Equation II has one member.

Equation III has no solutions on the real number line; the set of solutions to Equation III has no members. Mathematics calls $\{ \}$ the *empty set*. Another symbol for the same concept is \emptyset . Of course, mathematics is not linguistics, and empty sets in mathematical set theory do not relate to sets of real numbers in the same ways that null elements in linguistics relate to overt elements in linguistics. Still, mathematics does offer another realm of human experience in addition to linguistics where a full understanding requires the postulation of a kind of emptiness. Besides, in " \emptyset ," mathematics furnishes a handy symbol for linguists to use.

2. The null in semiotics

Conceptual uses of the empty structural element include not only the mathematical but also the semiotic. Consider first baseball and then language.

In baseball, it is the job of the umpire to judge whether each pitch that comes towards the batter is a good pitch or a bad pitch. Those are the only two possibilities. A good pitch is called a *strike*; a bad pitch is called a *ball*. A strike, or a good pitch, is a pitch that the batter should reasonably try to hit. If the batter does not swing at a

good pitch, the umpire calls a strike and thereby penalizes the batter's team. A ball, or a bad pitch, is a pitch that the batter should not be expected to try to hit. If the batter does not swing at a bad pitch, the umpire calls a ball and thereby penalizes the pitcher's team. To convey to the assembled crowd of spectators his judgement of each pitch, the umpire employs visual *signals*—to use the semiotic term—for strike and ball: To signal “strike,” the umpire visibly moves one arm, typically extending it at an upward angle. To signal “ball,” the umpire does nothing. See Diagram 2.

Diagram 2. Null in baseball

@@ Insert file Umpire here

“Strike!”

“Ball.”

In the closed semiotic system that is shared by the umpire, the players, and the spectators, that absence of movement by the umpire is significant; it conveys a *meaning*. Baseball uses a null element.

2.1 Linguistics

Linguistic theory has made extensive use of nothingness. This has been the case even though it has long been recognized that language-users' pragmatic interpretation in discourse goes "beyond what sentences actually say" (Li & Thompson, 1979, p. 312), even to the point that, according to Ono & Thompson (1997, p. 489), if inference in communication were properly taken into account, then the syntactic "notion of 'zero'" that they have in mind "would play no role." That is, linguistic theory under-represents the messages for whose communication humans use language. This view (that grammar falls short of accounting for communication) is essentially compatible with Columbia School's distinction between signaled *meaning* and inferred *message* (Diver, 1974/2012, p. 31, 1975/2012, pp. 48-54).

Nevertheless, the null in linguistics has been heavily relied upon.

Typically, in lexicon, phonological distinctiveness is crucial for keeping lexical items apart. So *bear* needs to be pronounced distinctly from *beer*, if miscommunication is not to ensue. Nevertheless, homonymy — the absence of a phonological distinction — is commonplace in lexicon, as in "bear the burden," "trap a bear," and

“bare one’s soul” — plus “the undertaker needs another bier.” As evidenced by such speech communities as the French and the Mandarin, the human capacity for dealing with homonymy in speech is vast. Homonymy may well be the strongest evidence for what Diver (1975/2012, pp. 53-56) referred to as a “human factor” in language: the fact that human intelligence is what allows language to function as well as it does in spite of the semiotic imperfections built into its structure.

In orthography, a writer may use an alphabet to represent meaningful units such as words. To that end, English orthography typically makes use of twenty-six letters, A-Z. Omission of letters, however, may be indicated by an apostrophe, as in *isn’t* (*is not*) or *fo’c’sle* (*forecastle*). The apostrophe, then, is in a sense sometimes an orthographic null element.

2.1.1 Saussure to Bloomfield to Chomsky and beyond

Linguistics has a long tradition of the use of the null element. Saussure (1878, interpreted in Diver, 1974/2012, pp. 27-30) proposed for historical Greek a zero alternation with /e/ and /o/ (e.g., *leip-* / *loip-* / *lip-*) to account for attested patterns of vowels in Indo-European languages. Bloomfield (1926), in his “Set of Postulates for the Science of Language,” decreed: “Absence of sound may be a

phonetic or formal alternant [§43]. . . . Such an alternant is a zero element [§44].” Bloomfield gave empirical justification: “The postulation of zero elements is necessary for Sanskrit . . . , for Primitive Indo-European . . . , and probably economical for English.” For the last, Bloomfield cited *book* “with affix zero, as opposed to *book-s*.” Here Bloomfield was treating together “phonetic alternation,” involving phonemes, and “formal alternation,” involving morphemes. Zero as a phoneme was taken up by Hockett (1942, §7.8) and achieved a fairly secure place, as phoneme or allophone, in American Descriptive linguistics. Zero as a morpheme was enshrined by Harris (1942, §2.1).

The null element in grammar — though certainly *grammar* is a term of uncertain denotation, depending on the grammarian — rests upon the postulation of a null element in morphology. For instance, once the linguist, with Harris (1946), moves “From Morpheme to Utterance,” the postulation of a zero in morphology leads inexorably to the concept of a zero in syntax (§7.3). Thus \emptyset enters into formal syntax essentially as a morpheme. For instance, in *Syntactic Structures* (Chomsky, 1957, p. 39), \emptyset is an option alongside other verbal affixes denoted *past*, *S*, *en*, and *ing* in a rewriting rule. Then, in *Aspects of the Theory of Syntax*, come the *dummy element* and the *null feature* (Chomsky, 1965, pp. 103, 155). These last are purely formal

elements of syntax with no phonological or morphological content. For instance, one “dummy element” serves for “signifying” that the rule of the passive transformation of a sentence is obligatory, and one “null feature” specifies part of the syntactic environment for a selectional rule involving adjectives that can describe humans or not. The *raison d'être* of such constructs is to represent a syntactic property, something to do with the structure of sentences, not with the structure of morphemes. Likewise, the principle of “recoverability of deletion” (Chomsky, 1965, pp. 179, 182) in transformational syntax leads naturally to the creation of some formalism — a *trace* — to preserve the element that is deleted. For instance, the adjective *clever* would hypothetically have been deleted — leaving a trace — from its application to the noun *Mary* in the sentence *These men are more clever than Mary*. A syntactic slot, furthermore, is free to be occupied by an *empty category* such as PRO in a subject slot: *It is unclear what PRO to do* (Chomsky, 1982, p. 64).

Outside of the realm of formal syntax, too, the recognition of significant absence is longstanding, even if the theoretical basis for the recognition has remained largely unquestioned. In both the variationist and the grammaticalization frameworks — not that these are always separate — significant absence (e.g., null, zero, or null instantiation) is supported by some sort of structural paradigm, be it

communicative (e.g., rhetorical), semantic (e.g., conceptual), traditional (e.g., the paradigm of grammatical person), or still syntactic.

Taking a feature of discourse — quotation — into account, D’Arcy (2012), in a variationist, diachronic study of English, sees a “null form” as a “strategy” of introducing quotation, alongside such overt lexical material as *say*, *think*, *go*, and (forms of) *be like*, to which list D’Arcy appends “Other.” If lexical items such as these — as opposed to grammatical elements — are members of an “open list” (Diver, 1990/2012, p. 69), then such a “null form,” rather than constituting a structurally defined element as above, really amounts to the *absence* of an overt form (see below) in a communicative rhetorical context that is researcher-defined.

As regards the diachronic dimension, Bickel, Witzlack-Makarevich, Zakharko & Iemmolo (2015) assume the “structure of agreement paradigms” to frame their cross-linguistic investigation testing a diachronic universal statistical principle involving the development, through grammaticalization, of “zero forms in the third rather than in the first and second person” (p. 30). Here, obviously, the paradigm of grammatical person provides the frame in which a zero form can be posited or assumed.

Bybee (1994), treating “The Grammaticization of Zero,” proposes that, through usage, something conceptual that is identifiable only in the “universal conceptual space surrounding the communicative context of language use” (p. 251), but not in the linguistic system itself, can develop into a linguistic element that has no phonetic substance but “true semantic content that is equivalent in many ways to” other linguistic elements (p. 242).ⁱ Here, not universal syntactic structure but “universal conceptual space” is guiding the postulation of zero.

In a similar vein, but adding a variationist approach too, Torres Cacoullos & Walker (2009) identify “overt indication of temporal distance” — cf. *no* overt indication — as a conditioning factor in “expression of future time in English.” Zero remains even here a creature of hypothetical structure, semantic even if not morphological or syntactic.

In variationist linguistics, some version of null is much studied, but typically it is assumed as the realization of a syntactic slot, not fundamentally proposed or questioned as a theoretical entity. For instance, Schwenter (2006), assuming, as did Chomsky, the syntactic framework of sentence structure, treats “null direct object” as an “observation” that is empirically “VARIABLE” in Spanish.ⁱⁱ Tippetts (2011) likewise assumes a syntactic framework within which to

identify direct objects in Spanish. Within the “envelope of variation” of verbs that occur with “*a*-marked” direct objects, Tippetts compares these tokens with “un-marked or *a*-less tokens” (excluding other uses of *a* ‘to’).ⁱⁱⁱ

Subject of the sentence, too, counts as a syntactic slot. Within variationist linguistics, the problem of “the variable *absence* and *presence* of subject personal pronouns in Spanish” — in the careful words of Ricardo Otheguy (2015, emphasis added jd) — has an extensive literature. It is an apparently uncontroversial statement that “In Spanish, as with other so-called pro-drop languages, subject personal pronouns (SPPs) are often omitted . . . without changing the basic meaning of the utterance” (Carvalho, Orozco, & Shin, 2015, p. xiii). Leaving aside other theoretical obstacles (or “boulders,” to use Otheguy’s term), the view that a subject personal pronoun is “omitted” can ultimately be traced back, perhaps, all the way to the pioneering variationist study of the “deletion” of copula in English by Labov (1969). Though much that is practical — involving, say, bilingualism, contact, and language acquisition — has been learned through quantitative studies of the phenomenon (as seen in papers in Carvalho, Orozco, & Shin, 2015), few are those scholars who have questioned, as Otheguy has, whether the *absence* — or omission or deletion — of a form (such as *él* ‘he’) is the same thing, theoretically

speaking, as the *presence* of a null form (\emptyset).^{iv} As Otheguy points out, the distinction becomes crucial when, for instance, a researcher is concerned, on the one hand, with syntactic factors such as tense and, on the other, with extra-sentential discourse factors such as continuity of reference (or “switch reference”).

The theme in this intellectual history is the power of postulated structure to compel the postulation of null elements to prop that structure up. So if it is postulated that there exist meaningful forms (morphemes) made up of phonological elements (phonemes), then if these entities sometimes turn up (in alternation or in historical development) without those phonological elements, a null alternate of the physically absent sound will serve the purpose of preserving the postulated morphological structure. And if it is postulated that there exist sentences arranged in rule-governed patterns, then if these sentences sometimes turn up without those patterns (e.g., an infinitive clause without an overt subject), an empty category will serve the purpose of preserving the postulated sentence structure. Or if, instead of syntax, semantics is assumed to be universal, then alternation between the overt and the covert can still be deemed to have been “observed.” When such statements are made, theory—explicit or not—is driving analysis.

2.1.2. *William Diver and the Columbia School*

Not to say that analysis ever should or could be purely bottom-up or ad-hoc. Even the iconoclast William Diver (1993/2012, 1995/2012) — who, like Saussure before him, renounced the nomenclaturism of syntax (Otheguy, 2002) in developing what we now know as Columbia School linguistics and who insisted that “theory be guided by analysis, rather than the other way around” (1995/2012, p. 445) — Even Diver measured analytical success by the goodness of fit of his hypotheses to the data he had chosen, and he explicitly recognized the theoretical *orientations* that held the hypotheses together plausibly and coherently. That is, some overarching consideration always justifies the postulation of a null element. That is true both in what precedes and in what follows.

Diver’s thought, while certainly influenced by his predecessors, is distinct from the paradigms of formal linguistics, grammaticalization, and variationist linguistics.^v

2.1.2.1. *Diver and null.* Diver adopted the American Descriptivist construct of null. He discussed it in Diver (1990/2012) and incorporated it right into his grammar, where it was a *signal* of a *meaning* (cf. Saussure’s *signifiant* and *signifié*), for instance the meaning ONE in the English system of Number, as in *cat-∅* as opposed

to *cat-s*, with *-s* being the signal of the opposing meaning OTHER THAN ONE. Thus, Diver continued the practice of positing a null element to support the postulation of structure, in this case by using null to complete the exhaustive categorization of the semantic substance of Number.

This is not to say that it is always easy to decide whether or not to posit a zero signal, but in principle the decision is guided by oppositional structure, as long recognized (e.g., García & Putte, 1989). Contini-Morava (2006) wrestles with the question of “The Difference Between Zero and Nothing” in the context of a Swahili problem. Certain Swahili noun classes, unlike most of the eleven or so noun classes in that language, lack any identifying overt prefix in certain morphophonemic contexts. Only one of these noun classes, according to Contini-Morava, should be analyzed as having a zero prefix; the others “simply lack a prefix.” This is an analytical decision, not a given. In Contini-Morava’s words (p. 221): “a zero, or significant absence, can be most easily recognized (and therefore can reliably convey its meaning [in Diver’s sense of that term]) within a closed set of oppositions in which all other alternatives are overt marks of some kind.”

But the present paper is not a disquisition on just *null*; it is instead, one might say, a broader *Much Ado About Nothing*. This

paper is an overview of the ways in which linguistic structure can be analytically relevant even when there is no overt sign of it at a certain point in discourse. Among those ways, zero, or the null element, is just one; there are other ways.

2.1.2.2. Diver and homonymy in grammar. Another way for linguistic structure to be absent but relevant, seen already here in lexicon, is homonymy, in which a posited structural distinction is not maintained. Diver had homonymy in grammar too. This in itself is not unusual when one thinks of the homonymy of the English plural noun *-s* mentioned just above, as in *the cat-s*, and the singular verb *-s*, as in *It meows*. These hypotheses regarding the homonymy of *-s* in English are developed in Reid (1991) and further in Reid (2011).

Nor is such homonymy unusual in another of Diver's languages of interest, Latin. There, for instance, the suffix of the nominative plural of the first declension is identical to the suffix of the dative singular of that declension, so *agricolae* could be 'farmer-nom-pl' or 'farmer-dat-sg.' (In other declensions, the nominative plural and the dative singular are phonologically distinct.) For Diver (in Diver & Davis, 2012, pp. 218-219), those cases were signals of meanings in a grammatical system he called Degree of Control. Diagram 3 shows the system in an *interlock* with the system of Number and illustrated with

a lexical item of the first declension (with length indicated by colon), with the two instances of the homonymous *agricolae* highlighted in italic type:

Diagram 3. Diver’s system of Degree of Control in Latin
(simplified)

| <u>meanings</u> | <u>signals</u> | <u>illustration (ONE / OTHER)</u> |
|-----------------|----------------|-----------------------------------|
| MOST | nominative | agricola / <i>agricolae</i> |
| MORE | ablative | agricola: / agricolis |
| LESS | dative | <i>agricolae</i> / agricolis |
| LEAST | accusative | agricolam / agricolis |

It is not too difficult to imagine, in light of Diver’s “human factor” (Diver, 1975/2012, pp. 53-56 *et passim*) how intelligent human beings manage to distinguish one *agricolae* from the other: In a given context, it will often be true that one knows whether one is dealing with one farmer or more, or whether one is dealing with a man (*nominative*) who, say, is selling corn, or with someone lower down on the scale of responsibility, such as a man (*dative*) who is sold corn. This must pretty much be the way modern Spanish speakers decide whether an instance of, say, *canto* is ‘song’ or ‘I sing’: by an intelligent use of context.

The postulation of homonymy in cases such as *agricolae* is fairly straightforward. A more interesting positing of homonymy in Diver's grammar is represented by *agricoli:s* in Diagram 3. Diver would have two signals *agricoli:s*. These are signals of the two distinct meanings MORE and LESS Degrees of Control "exercised by a participant over some activity, usually that indicated by the verb" (p. 215). But here, the two putative signals are adjacent on the scale. Moreover, the ablative plural and the dative plural are always—without exception!—phonologically identical. One might well wonder how language-users manage to distinguish the two signals and thus the two meanings. Obviously, it was the structure of the Control-Number interlock that guided Diver's decision to posit two signals here. Diver (1995/2012, p. 493) justified the decision regarding Latin ablative and dative plural the same way he did "the loss of a singular-plural distinction [in modern English *you*] which was maintained elsewhere in the system": "the distinction made, precisely, in the system as a whole [i.e., *I/we; me/us; he, she, it / they; him, her, it / them*] is used as a reference point for setting up the possibilities from among which to choose where the signalling is imprecise [i.e., *you*]."

Evidently, in the phrase "as a reference point for setting up the possibilities," Diver was not referring (just) to the analyst but to the language-user:

For the reader of the Latin text, the imprecise plural case form [e.g., *agricoli:s*] provides only the information that the word is to be regarded as not nominative, not accusative, not genitive, and what is left in doubt is only the distinction between dative and ablative. The reader, knowing [thanks to the singular, presumably; jd] the ways in which the dative and the ablative are used, can then decide which of the two is the more appropriate to infer. The need for the application of an intelligent appraisal is evident. (Diver, 1995/2012, p. 493)

Regardless of one's confidence in Diver's speculation about the psychological processes of the (proficient) reader of Latin, it is clear that the analyst, in setting up two signals for ablative plural and dative plural, is being guided by structure that is posited elsewhere and deemed to be relevant.

The thinking brings to mind the conception of linguistic structure traceable to Saussure (if through Meillet): a system — *un tout en soi* (Saussure, 1916/1972, p. 25) — in which *tout se tient* 'the whole thing hangs together.' One part of the grammar is related to every other part of the grammar.

2.1.2.3. *Diver's residual member.* That interrelatedness of grammatical elements is particularly striking in what Diver (1978/2012, p. 125 *et passim*) called the *residual member* of a grammatical system, one whose “semantic substance is defined *entirely* by its opposition to the other members.” A somewhat trivial illustration of a residual member, seen already, is the English signal *-s* of the meaning OTHER THAN ONE in the system of Number (e.g., *cat-s*). A perhaps better illustration that the residual member means essentially NONE OF THE ABOVE would be Diver’s (1978/2012, p. 122) hypothesis for the meaning of the Greek genitive case in his system of Relation to a Place, Diagram 4:

Diagram 4: Diver’s system of Relation to a Place in Greek

| <u>meanings</u> | <u>signals</u> |
|--|----------------|
| AT A SPECIFIED PLACE | dative |
| WELL-ORDERED WITH RESPECT TO A SPECIFIED PLACE | accusative |
| OTHER PLACE RELATIONS | genitive |

Basically, the Greek dative, says Diver, is used for a point-like location, the accusative for neat relations such as lines and circles, and the genitive for messier place relations such as the missing of a target or the meandering of a vine around a cave. The meaning of the genitive,

then, is essentially NOT one of the other meanings of the system. In the Greek Place system, the genitive is a null kind of thing, in a way: an absence of something more structurally well-defined.

2.1.2.4. Diver's opposition of inclusion. Another variation on these system-internal relations is represented by Diver's *opposition of inclusion*. To understand this kind of structural relationship, it is necessary first to understand those seen, for instance, in Diagrams 3 and 4 as *oppositions of exclusion*: each meaning of the system excludes all the other members of the system. Such oppositions of exclusion, where one *value* excludes all the other values, are the norm in Diver. Oppositions of inclusion are far less common. One is represented by the system of Number in Greek (Diver, 1987/2012). To make the point, Diagram 5 contrasts the Number system of Greek — with its opposition of inclusion — with those of Latin and Sanskrit — which have only the more routine oppositions of exclusion.

Diagram 5. Three systems of Number

| <u>Latin</u> | <u>Sanskrit</u> | <u>Greek</u> | |
|--------------|-----------------|--------------|-----|
| ONE | ONE | ONE | |
| | TWO | | } |
| OTHER | OTHER | OTHER | |
| | | | TWO |

Latin has the familiar set-up: a signal (the singular) for the meaning ONE and a signal (the plural) for everything else. That is like English or Spanish. Sanskrit has something a bit more unusual but still just straightforward oppositions of exclusion: a signal (the singular) for the meaning ONE, a signal (the dual) for the meaning TWO, and a signal (the “plural”) for everything else, such as three, four, or seventy. But Greek has an opposition of inclusion. Greek has a dedicated signal (the singular) for the meaning ONE and a dedicated signal (the dual) for the meaning TWO, but its signal for numbers such as three, four, and seventy (its “plural”), can be used too when there are only two of something. The Greek meaning OTHER *includes* the meaning TWO. (This is indicated by the curly bracket.) Diver was fascinated by how the Greek writer, Homer, employed this Number system in accordance with an apparent interest in being precise or not, using the *included* signal of the meaning TWO for things that were of special interest to him and the *including* member, the meaning OTHER, for things that were of less interest to him. The point for us, however, is merely that, here again, an element of structure—a precise Number meaning—can be dispensed with. Put another way, a certain element of linguistic structure—the meaning TWO—remains relevant even when it is not

signaled, even when the poet opts out of signaling that precise number.

All the structural relations seen so far might be called *oppositions of value*. In them, a given semantic substance — e.g., Number or Relation to a Place — is exhaustively divided up, by signals, into relative values. One value is defined by its opposition to the others, that is, by being *not* another value in the same semantic substance. We have seen four types of hypotheses in Diver where an element of structure may, at a certain point in the text, be relevantly *not* present: the null signal, homonymy, the residual member in a system, and the including member in a system.

2.1.3. *The opposition of substance*

Another type of structural relation illustrates too, in its own way, the relevance of an absence of structure at a certain point in the text. This is the *opposition of substance*. As defined by Davis (1992, p. 287, summarized in Davis, 1995), an opposition of substance is “a relationship in which two signals have certain meanings in common but differ in that one signal entirely lacks meanings from some semantic substance to which the other signal belongs.”^{vi} This structural relation was defined in order to account for the distribution in texts of two pronouns in modern literary Italian, *egli* and *lui*, both

often glossed 'he.' The meanings that *egli* and *lui* have in common — and so establish a basis upon which the two pronouns can be related — are: Number ONE, Sex MALE, Referent OTHER THAN SPEAKER OR HEARER (i.e., third person), and Attention LOW (as opposed to more highly demonstrative forms). Where they differ — their *opposition of substance* — is in that *egli*, but not *lui*, also signals a meaning from an additional substance: the meaning CENTRAL in a system of Focus on participants in events. Essentially, *egli* is restricted to being the subject (not the oblique) of a particular verb, while *lui* is much more of a free-floater. Consequently, the relevance of *egli* is tied to a particular event in the narrative, while *lui* may conceptually relate to something in addition to — or even instead of — an event in the narrative. For instance, *lui* may suggest a contrast between one man (*lui*) doing one thing and another man mentioned elsewhere in the context. Such a token of *lui* would be relevant both to its own verb and to some noun somewhere else in the context.

As can be imagined, the contrast between *egli* and *lui* is subtle and requires careful validation. Other oppositions of substance, however, are more readily obvious (given knowledge of the morphology). Davis (2002) analyzes the three Italian third-person disjunctive pronouns *ess+* (where '+' indicates a slot for a gender and number suffix *-a, -o, -e, -i*), *loro*, and *sé* in terms of oppositions of

substance. So *essi* 'they / them' is explicitly plural in number and masculine in gender. *Loro* 'they / them / each other' is explicitly plural in number but indifferent to grammatical gender. And *sé* 'themselves / himself / herself / itself' is indifferent to both number and gender. The three forms thus illustrate a one-step-at-a-time reduction in the relative semantic weights that they bear. *Ess+* provides the most information: person, number, and gender. *Loro* provides just person and number. And *sé* signals only person. The analysis shows how these oppositions of substance account for the observed distributions of the three forms in texts, including examples traditionally classed, respectively, as demonstrative, reciprocal, and reflexive: 'they talk in the midst of them (*fra essi*)'; 'they talk among themselves (*fra loro*)'; 'they talk to themselves (*fra sé*).' The distribution of *loro* is accounted for by a language-user's *opting out* of the substance that corresponds to grammatical gender. The distribution of *sé* is accounted for by an *opting out* of substances having to do with number *and* grammatical gender. The relevance of that analysis to the present thesis is, again, that the systematic *absence* of a certain element of structure can be relevant in accounting for the observed presence of a form at a certain point in a text.

The idea of the opposition of substance is carried out more fully in Davis (2017b).^{vii} There, the Italian clitic *si*, traditionally

classed as the impersonal and reflexive pronoun of the third person ('one,' 'himself / herself / itself / themselves'), is analyzed in terms of oppositions of substance. Most of the other clitics (datives *gli/le/loro*, accusatives *lo/la/li/le*, plus the freestanding *egli*) signal meanings from systems of Number, grammatical gender or Sex, and a system called Degree of Control (traditionally, case), which (as above, for Diver) has to do with a participant's level of responsibility for an event. *Si*, by contrast, represents an *opting out* of all of those substances. The presence of *si* at a certain point in the text is a result of a writer's avoidance of those semantic substances. Sometimes they are irrelevant, sometimes they are superfluous, and sometimes they are too categorical and so get "neutralized" by *si*. *Si* signals very little: just that some third person is participating somehow in an event. Just who and just how, is left to inference. Crucial to the thesis here: The distribution of *si* can be accounted for only by an analytical appeal to those very semantic substances in the network of systems of which *si* is a part, which are *not* signaled by *si*. *Si* is present at a point in a text because of what *si* is not. *Si* is a mere specter of a pronoun, hardly a substantial pronoun at all—if one believes in pronouns.

The oppositions of substance that are posited for *si* account not only for individual tokens of *si* but also for statistical patterns across large stretches of text. For instance, in an authentic text, a chapter

about people “Becoming Part of the Roman World” contains more tokens of signals of Degree of Control relative to *si*, while a chapter about “Italic Alphabets and Dialects” contains fewer tokens of signals of Degree of Control relative to *si*.^{viii} This observed difference can be attributed to the *human factor*: People are typically held, by language-users, to bear considerable responsibility for events, while alphabets and dialects have no will of their own. See Table 1.

Table 1. *Si-* and the Neutralization of Control*

| | Ch. VI 'Italic Alphabets and Dialects' | Ch. XI 'Becoming Part of the Roman World' |
|--------------------------------|--|---|
| <i>si</i> (no Control meaning) | 122 | 196 |
| <i>l+</i> (a Control meaning) | 9 | 35 |
| | Ratio 14:1 | Ratio 6:1 |
| | | OR > 2.4 |

*Source of data: Giacomo Devoto. 1951. *Gli antichi italici*. 2nd edition. Firenze: Vallecchi.

In this text, the odds of observing *si*, as opposed to *l+*, in a chapter (VI) devoted to alphabets and dialects is over twice as high as the odds of observing *si* in a chapter (XI) devoted to people. Thus, an element of

linguistic structure that is present here and absent there in a text has very real, measurable effects on the structure of discourse. Or, at least, the opposition of substance provides an account of such correlations in discourse.

The opposition of substance is one more development in a series of linguistic treatments that point to the relevance of the insubstantial in observable phenomena.

3. Unsignaled structure in music

Much as the relevance of the opposition of substance finds support in language, so too the relevance of unsignaled structure finds support in semiotics outside of language: in music. This extra-linguistic support is relevant if, as indicated in the introduction to this paper, the facts of linguistic structure resemble importantly, through and through, aspects of other types of human behavior.

Consider modern western musical notation. Analogize a linguistic element (e.g., *si*) to a certain triad of notes (e.g., GBD) in a musical score; analogize a phrase in a piece of discourse to a musical phrase; and analogize a language-user's grammar (a system of systems) to a whole musical composition. The eighteenth-to-

nineteenth-century convention in music was to indicate the key signature of an entire composition just once, at the very beginning of the piece; it is assumed then that that key signature prevails until it is explicitly changed.^{ix} As a result, accidentals — sharps and flats — do not need to be indicated for each note of the perhaps several pages of a western classical or romantic musical composition, but only once. Wherever the accidentals are not explicitly indicated, they are, actually, missing structures. In terms of performance, this principle of organization entails that a pianist's fingers, for example, will alight on a black or a white key in response to structure that is *not signaled* at that point in the musical text, perhaps not even on that page of text. For instance, consider the triad in Diagram 6:

Diagram 6. Opposition of substance in musical notation

@@ Insert file Gchord here

Three notes — making one chord — are indicated, but exactly what those three notes are depends on the key signature that was established at the very beginning of the composition. There are six different combinations of actual notes potentially played — the

observations that a viewer-listener would make — depending on the overall key of the composition. See Table 2:

Table 2. Musical triads instantiating multiple compositional keys

| <u>notes played</u> | <u>key of the composition</u> |
|--|--|
| • G – B – D | C maj., a min., G maj., e min., D maj., b min. |
| • G#-B – D | A maj., f# min. |
| • G#-B – D# | E maj., c# min., B maj., g# min., F# maj., d# min. |
| • G – B ^b - D | F maj., d min., B ^b maj., g min., E ^b maj., c min. |
| • G - B ^b - D ^b | A ^b maj., f min. |
| • G ^b - B ^b - D ^b | D ^b maj., b ^b min., G ^b maj., e ^b min. |

For the benefit of those who know only that a piano has black keys and white keys: The number of those colors played might be 0, 1, 2, or 3, depending. Now of course a proficient pianist playing a Chopin étude typically will not pause to calculate all this, but the performance — the observable distribution of the movement of the fingers, to put it crudely — gives evidence of his or her implicit knowledge of the semiotic system.

Human beings are capable of operating systematically even when relevant structure is not explicitly signaled.

4. When there's no *there* there

In all the linguistic situations surveyed thus far, a posited structure provides a framework within which to posit a theoretically significant absence: homonymy, the null morpheme, the residual member or the including member in an opposition of value, and the opposition of substance. For Chomsky and his followers, that framework is sentence structure; for Diver and his followers, that framework is a grammatical system (e.g., Number, Degree of Control, Focus, Relation to a Place) and the interlocks into which that system enters with other grammatical systems. This structural framework serves as a kind of analytical control over what gets posited; no linguist would posit a million zeroes all over the place.

That granted, however, it might be worth asking: Can anything interesting be said about situations when a structural element is present versus when it is *absent*, when it is simply *not there*, when nothing is simply nothing? This is the question that Contini-Morava (2006) skirts but rightly avoids. Her chosen problem is, How can we tell a significant null from just nothing? Her chosen problem is *not*, What can we say when there is simply nothing? To address that question would require that we sacrifice the tight analytical control of

a posited structural framework. The fear of that analytical precipice can be expressed with the truism that, throughout a body of discourse, there is an infinite number of absences of whatever structural element one might choose to study (for instance, the absence of *whom* in this paper).

Still, it might be possible to gain some understanding of what is accomplished by interjecting a structural element at a certain point in discourse as opposed to leaving it out at that point altogether. To make the task as manageable as possible, we would need to hold constant some element in the context. Then we could at least get a sense of what effect is achieved by a language-user's introducing our hypothesized semantic substance versus not introducing it at that point in the discourse.^x

Again, an extra-linguistic analogy is not hard to identify. For instance, a serious anthropologist might wish to study presence versus absence of open umbrella. Clearly, the anthropologist would want to hold certain variables constant; for instance, there might be no reason to study open umbrellas (or their absence) in the hands of persons lying in bed, nor open umbrellas carried (or not) by dogs, nor open umbrellas on cloudless days, nor open umbrellas on Antarctica. One could hold variables constant by limiting the study to, say, human pedestrians during rainfall. One could limit the geographical range of

the study to, say, Northampton County, North Carolina; the borough of Manhattan, New York; and the city of Venice, Italy. Conducting such a study might reveal genuinely interesting facts about issues such as: sartorial fashion across generations, gender stereotypes across cultures, the attitudes towards rain among participants in agricultural versus urban cultures, and the design of thoroughfares across jurisdictions.^{xi}

It is indeed feasible to study the presence versus the absence of a thing.

To conduct that as a study in Columbia School linguistics, one would have to ask: Under what circumstances is a given semantic substance not signaled at all?

4.1. Absence studied from a Columbia School linguistic perspective

Consider the distribution in modern literary Italian of *vi* and *ci*, adverbial clitics to the verb, both typically glossed ‘there’ and sometimes incorrectly viewed as “fully synonymous” (Russi, 2008, p. 57). Based on a survey of their distribution relative to each other, one might hypothesize that they are signals with relative values in a system of Restrictedness of Space, with *vi* signaling the meaning RESTRICTED and *ci* signaling the meaning UNRESTRICTED (Davis, 2017a).

Such a survey would include examples that are locative in a straightforward way, such as *vi si annida* 'is hiding out *there* (in Rome)' versus *non ci torno* 'I'm not going back *there* (abroad)' (Silone, *Pane e vino*). But the survey would also include examples that the tradition classifies as existential, where the communicative effect is, putatively, merely to assert existence, as in Examples (1) (Rigoni Stern) and (2) (Calvino), below.

(1) *vi* sono due pecore e un maiale
there are two sheep and a pig
'there are two sheep and a pig'

(2) *C'* era una farfalla morta
there was a dead butterfly
'There was a dead butterfly'

Examination of the actual contexts of those examples reveals that, in (1), the sheep and the pig are *conveniently confined* in a stall where they can easily be slaughtered by hungry soldiers far from home, and that, in (2), the dead butterfly is found on the threshold of a house, one of several signs left *here and there around the countryside* by an evil viscount as omens of his ill intent towards his people. Thus the

precise space in which the sheep and pig exist is relevant: $vi =$ RESTRICTED, while the precise space where the dead butterfly happens to be found is happenstance: $ci =$ UNRESTRICTED. What the grammar of Italian needs to say, then, is not merely that certain examples are existential, but that sometimes the existence of something is asserted in a RESTRICTED Space and sometimes the existence of something is asserted in an UNRESTRICTED Space.

This understanding lays the groundwork for a survey of examples asserting the existence of something, some with vi or ci , and some with neither; that is, some signaling Restrictedness of Space, and some not: some examples with a grammatical *something*, and some examples with grammatically *nothing*, some with *presence* and some with *absence*. To make the survey manageable, one could limit it to examples with forms of the copula. Among such examples, one would find example (3) (Silone):

- (3) sulla groppa dell' asino è allungato
on-the rump of-the donkey *is* stretched-out
'on the donkey's rump *is* stretched out
il cadavere d'un lupo
the body of a wolf
the body of a wolf'

Examination of the context reveals that, in (3), a dead wolf is being displayed to a gaggle of villagers. One of them has shot the wolf and has brought it to show to them, in order to warn them of the existence of danger in the region. The point here is indeed simply that the wolf exists; there is no communicative need to restrict to a greater (*vi*) or lesser (*ci*) degree the space in which the wolf exists. This example, therefore, contains no signal of Restrictedness of Space. In the words of Gertrude Stein, “There is no there there.”

If we in linguistics ever manage to develop a good understanding of structural absence — homonymy, the null morpheme, the residual member or the including member in an opposition of value, the opposition of substance — then we will be in a better position to understand the absence of structure. That is, understanding when nothing is *something* would help us to understand when nothing is simply *nothing*.

4.2. Absence studied in variationist linguistics

An essentially comparable approach is taken by Otheguy & Zentella (2012) in their full-length study of the presence versus the absence of subject pronouns in Spanish in New York City. Variationist linguistics

concerns primarily the differences in output among individuals and groups of individuals. Now different individuals may have different mental grammars, especially if they are identified with different social groups (such as countries of origin). Then, the question of presence versus absence of an element is worth asking only if both individuals possess the element in question and also exhibit the possibility of its absence. For instance, both a Spanish speaker from Mexico and a Spanish speaker from Cuba might exhibit both *Él come* and *Come* ‘He eats,’ and a variationist might well study how the two speakers compare in terms of presence versus absence of *él*. The variationist might investigate whether, in general, speakers from Mexico and speakers from Cuba differ in regard to presence versus absence of *él*, and if so then how so. By contrast, it would hardly be worthwhile to study the presence versus the absence of the partitive clitic *ne* in the output of an Italian speaker from Italy compared to that of a Spanish speaker from Cuba; only the former would exhibit this *ne* at all.

To make their work analytically feasible — that is, so that they can manageably compare presence and absence of pronoun — what Otheguy & Zentella (2012, p. 48) hold constant — the way they define their “envelope of variation” — is the presence of a bare finite verb with an “ascertainable” animate subject.^{xiii} If they did not do this, they

could claim that there are absences of overt pronoun all over the place.

It is worth considering why the problem of *Él come* and *Come* in the output of the Spanish speaker from Mexico and the Spanish speaker from Cuba is a problem of *presence* versus *absence* rather than a problem of *él* versus *null*. While there are certainly empirical reasons related to their study for this decision, Otheguy & Zentella (2012, p. 9) give a theoretical rationale as well: “The notion of a null pronoun reflects a conceptualization that is integral” in one’s theoretical framework. “The postulation of nulls . . . is required by certain analytical claims that would otherwise be difficult to support” (cf. *supra*).^{xiii} This is the question of whether we have to do across the board — in both presence and absence — with structure or not. In the review of linguistics traced so far in this paper, a phonetic null was posited by Harris, by Chomsky, and by Diver as a structural element in its own right, the occupier of a slot in a morphological paradigm, in a sentence, or in a grammatical system comprised of meaningful signals. The opposition of substance too has to do essentially with structure: the systematic opposition between an element that bears a meaning from some semantic structure (e.g., Italian *l+* above, bearing a meaning of Degree of Control) and another element that does not (*si*). By contrast, at this point in this paper, the question is, instead, how to

treat the overt presence of a structural element versus the mere absence of that element, when the absence of that element is not itself a structural element. There's simply nothing *there*, much as when one compares an utterance like *This is a really muggy night* versus *This is a muggy night*. So, it might be argued, the theoretical reason why Otheguy & Zentella (2012) treat utterances such as *Come* as the absence of *él* rather than as the presence of a null subject is because they are analyzing not sentence structure but attested speech. Without the assumption of the framework of sentence structure, the utterance *Come* is just the utterance *Come*, and it contains no *él*.^{xiv}

Adopting this position of presence versus absence, Otheguy & Zentella (2012) do discover interesting facts about Spanish as spoken in New York by members of various social groups. The facts of variation result from differential motivations by the members of the groups to insert into discourse the functional content that a certain pronoun (e.g., *él*) contributes. That insight is possible only if the question is framed in terms of presence versus absence. If “null subject” had its own value — either different from or the same as “overt subject” — then *that value* — a positive thing — would be competing, as it were, with the value of “overt subject,” much as the value of, say *él* ‘he’ competes with the value of *ella* ‘she’ or with the value of *ellos* ‘they.’

In linguistics, absence is not necessarily the same thing as null.
(As, in mathematics, empty set is not the same thing as the real
number zero.)

5. Conclusion

In linguistics, it can be worthwhile to truck in nothingness. That has been shown to be true in structural linguistics, in formal linguistics, in Columbia School linguistics, and in variationist linguistics and in grammaticalization. Moreover, as Diver (1995/2012, pp. 446-447) would have it, language is in some respects like other aspects of intelligent human behavior. So nothingness, if it is important outside linguistics (in mathematics, in sport, and so forth), may be important in linguistics too.

It is a well-known trait of human beings to seek out pattern and even to impute significance where there is none: seeing crabs and bulls in the constellations, finding good luck in a four-leaf clover, or believing in a divine promise on account of a rainbow. This general trait is no doubt an extra-linguistic manifestation of Diver's "human factor" in linguistics. In a finite semiotic system such as grammar, where all the parts of the system interrelate, it is human nature to

behave in ways that are consistent with that system, even when overt signaling of elements of the system is abandoned. The semantic side of language does not cease to exist when the phonetic side falls silent. If this is indeed the way human beings behave when we speak and write, then it will be unavoidable for the linguist sometimes to formulate hypotheses of such insubstantial realities as null signals, homonyms, residual meanings, oppositions of inclusion, oppositions of substance, and indeed to reckon with *absence* itself.

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Notes

ⁱ Already García & Putte (1989) had proposed frequency of usage as the mechanism that drives the diachronic development of an opposition between a nothing and a something.

ⁱⁱ See Otheguy (2002) for a critique of the commonplace view in linguistics that syntactic categories constitute observations.

ⁱⁱⁱ On Spanish *a* with direct objects, see also García & Putte (1989).

^{iv} García & Putte (1989), in proposing a mechanism for the diachronic development of zero, had at least implicitly distinguished between absence (or “nothing”) and zero as a *signifié*.

^v Huffman (2001) and Huffman (2012) offer good, accessible introductions to Diver’s thought. See Davis (2004) for one take on Diver’s debt to Ferdinand de Saussure.

^{vi} García (1983) had accounted for the distribution of the Spanish disjunctive pronouns in a way that looked forward to the opposition

of substance, though she did not use the term and she insisted, unlike Davis (1992), that the forms in question had no meaning in common.

^{vii} For another treatment of a modern reflex of Classical Latin *sē* in terms of an opposition of substance, see Gorup (2006) on Serbo-Croatian *se*. For earlier analyses, not positing an opposition of substance, see García 1975, Diver 1986/2012, and Diver 1992/2012.

^{viii} This result is reported too in Davis (2016) and in Davis (2017b).

^{ix} This is where the analogy, like all analogies, is less than perfect. In music, there is one conventionalized place to indicate key structure, while in discourse, there is no particular conventionalized place to indicate grammatical structure. Musical key structure is typically made explicit by the composer at the beginning of the piece; grammatical structure is typically made explicit only by the linguist, not by the language-user — though language-users do occasionally speak somewhat explicitly about their grammatical structure: “OK, I’m gonna speak English now, not Spanish” or “I’ve probably never heard *egli* in Italian speech, only *lui*.” Anyway, much as an attested segment of a piece of music may lack any indication of still-relevant key signature, so an attested segment of discourse (e.g., a stretch with Italian *si*) may lack any indication of the still-relevant grammatical system (e.g., Degree of Control) being opted out of.

^x See also Tippets (2011). An enlightening treatment that takes a different analytical approach is the examination in Huffman (1997: 293-315) of the system of Degree of Control signaled by the French clitics *lui* and *le/la/les* versus prepositional phrases with *à*.

^{xi} For instance, there are streets in Venice that are too narrow at some points for pedestrians to carry open umbrellas, while that is not a factor in Manhattan, where streets are at least forty feet wide, or in Northampton County, where roads run extensively between peanut fields.

^{xii} See pp. 48-55 of their volume for a full statement of their criteria.

^{xiii} Otheguy & Zentella (2012: 9) actually apply this statement only to formal linguistics, but, as seen above, it in fact applies more broadly.

^{xiv} This is not at all to dispute or dismiss their own carefully thought-out reasons for speaking of “absence” rather than “null subject” but rather to give my own twist to the question, in the service of the point being made in this paper.