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# Substance and Structure in Columbia School Linguistics

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## Substance and structure in Columbia School linguistics

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### ABSTRACT

In the debate over the proper roles in linguistics of substance and structure, the Columbia School has taken an explicit position: that both substance and structure are required for a successful analysis. In a particular linguistic problem, the relevant phonetic or semantic substance must be identified, and the structural, or value, relations within it must be specified, for an accounting of the distribution of forms in discourse. The rationale for this position was given by the founder of the school, William Diver, in 1974, and the position has guided research since then. Ongoing research reported here on the Italian clitic *si* provides support for the appeal to both substance and structure.

**KEYWORDS** Columbia School; Diver; substance; value

### 1. Introduction

The question of the roles in linguistics of *substance* and *structure* (also called *value*, depending on the writer) dates back at least to Saussure's ([1916] 1972) insistence in the *Cours* that the language system (*la langue*) consists purely of value and not at all of substance. For Saussure, substance – both phonetic and conceptual – would be relegated entirely to speech (*la parole*), thus outside linguistics proper.<sup>1</sup> Since Saussure's time, major developments in linguistics, both formal and functional, have adopted positions on this question, more or

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<sup>1</sup>This is the lesson of Chapter IV (*La valeur linguistique*) of the *Cours*. No mere excerpt can do justice to the fully elaborated distinction, but consider the following: “[L]a langue [distincte de la parole (p. 31)] ne peut être qu’un système de valeurs pures ... [D]ans la langue il n’y a que des différences *sans termes positifs*. Qu’on prenne le signifié ou le signifiant, la langue ne comporte ni des idées ni des sons qui préexisteraient au système linguistique, mais seulement des différences conceptuelles et des différences phoniques issues de ce système” (155, 166, emphasis Saussure’s). That is, for Saussure, *la langue* consists *purely* of value, of just the *differences* between conceptual substances and between phonetic substances. Those substances are confined within the individual *signes*, sheltered from *la langue*, which is the domain of *la linguistique*. It is only in an act of speech (*la parole*) that one makes use of substantive phonetic sound to signify substantive concepts. See Davis (2004, 317–322).

less implicitly or explicitly, as described elsewhere in this volume. The contribution of this paper is to describe the development within a perhaps less well-known framework, the Columbia School, based upon the work of the late William Diver.

Over 40 years ago, Diver ([1974] 2012) explicitly addressed the question of substance and value. Diver, even while claiming a direct intellectual line back to Saussure, faulted Saussure and his successors Trubetzkoy ([1939] 1969), Jakobson (1936), and Hjelmslev ([1943] 1961), for eliminating substance from linguistics and over-emphasizing value. At the other extreme, Diver faulted Chomsky's (1957) reintroduction of the sentence and its parts into linguistics as an uncritical reliance on traditional substance, the presumed content of universal thought.<sup>2</sup> According to Diver, Saussure's insistence that *la langue* is a system of *valeur pure* appeared in Saussure's day to be justified by the nineteenth-century preoccupation with substance and by Saussure's own insight that certain linguistic problems could be solved with no appeal to substance. But that insistence, Diver claimed, was overplayed: Both structure and value must be taken into account if linguistic analysis is to achieve success. To the extent that modern linguistics is indebted to Saussurean thought, then, Diver's evaluation needs to be taken into consideration even today.

## 2. Saussure on substance and structure

Long before his now-famous *Cours*, Saussure (1878) had proposed – based entirely upon structural relations, not phonetic substance – that the Indo-European parent language must have had a series of consonants whose unknowable phonetic substance had entirely disappeared from the known daughter languages. Only with the discovery of Hittite, a quarter-century later, was Saussure's proposal supported by evidence of phonetic substance. The problem had been solved with no appeal to substance; the solution became merely more convincing to people once it was backed up by substance. That is, substance was not essential to the solution.

Grammar too received a Saussurean corrective: for instance, rather than an uncontrolled proliferation of notional “uses of the cases” – a list of universal conceptual substances such as causer, agent, instrument, recipient, patient, inner object, and possessor – the linguist should let *la langue* itself establish what structural oppositions are relevant. So, Russian might have an instrumental case for nouns, but Latin might not; Latin might have an ablative case, but German might not; and German might have a dative case for nouns, but French might not.

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<sup>2</sup>It mattered little to Diver that Chomsky redefined the sentence and its parts in ostensibly purely formal, as opposed to conceptual, terms. The sentence and its parts, reflecting explicitly or not the presumed content or substance of a universal thought, had been reintroduced.

As a consequence of Saussure's influence, his successors promoted structure, in both phonology and grammar, as the only thing of true importance and relegated substance to fields outside linguistics proper, such as phonetics and psychology. But in Diver's view ([1974] 2012, 33), Saussure's "antithesis" – pure structure – quickly "led to difficulties ... as insurmountable as those of the thesis" – pure substance. In particular, Diver faulted Trubetzkoy's purely negative definition of phonemes and his device of the neutralization of oppositions (Trubetzkoy [1939] 1969). And, Diver faulted Jakobson's assumption of the a priori structural devices of binary opposition and markedness (Jakobson 1936).

### 3. Diver on substance and structure

Diver proposed that both substance *and* structure have their place in linguistics, in both phonology and grammar.

Diver ([1974] 2012) argued, contra Trubetzkoy's *neutralization of opposition*, that the total absence of voiced obstruents in final position in German – thus the lack of an opposition of voice in that position – is but an "extreme case" of a tendency seen elsewhere, as in English. The figures appear in Table 1.

In both English and German, voiced obstruents are disfavored in final position. Diver's account of the favoring in the lexicon of voiceless over voiced obstruents appealed to the need for the language user to control only one articulator – oral – in the former but two articulators – oral and laryngeal – in the latter. Thus, phonetic substance is required for a solution to the problem. Tobin (1997) applies this and similar ideas involving phonetic substance, plus general principles of human behavior, across several languages, and offers clinical applications.

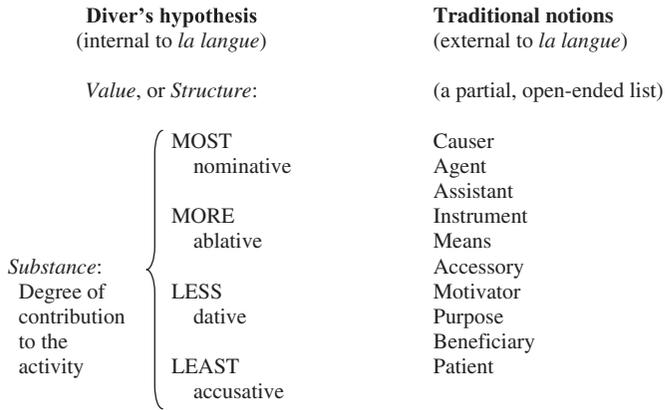
Diver argued, contra Jakobson's *allgemeine Kasuslehre*, that conceptual substance is required – in addition to value relations – to account for the distribution of the cases in a particular language. Diver's account of the distribution of Latin noun cases appealed both to value and to a semantic *substance* that Diver called "degree of contribution." That is, certain of the cases "rank the participants in terms of their relative importance in the particular activity" represented by the verb. Diver's language-specific hypothesis appears in Diagram 1. Ranged along the right, for comparison, is a list of familiar "uses" of the cases, consisting of what others might consider universal conceptual notions; the point is that Diver's value relations do not line up exactly with these notions.

Yes, says Diver, structure, or value relations, must be taken into account, but it is also crucial to get the right substance which is thus categorized. And that

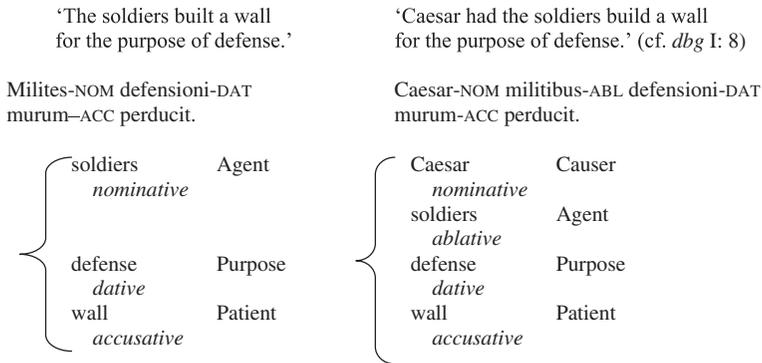
**Table 1.** Frequencies of final obstruents in the English monosyllabic lexicon.

-p	144	-t	261	-k	211	= 616	Oral articulator only
-b	87	-d	192	-g	78	= 357	Oral <i>and</i> laryngeal articulators

Notes: Adapted from Diver ([1974] 2012).



**Diagram 1.** Diver's hypothesis for the Latin cases. Source: Adapted from Diver ([1974] 2012).



**Diagram 2.** Lack of correspondence between the Latin cases and traditional case roles. Source: Adapted from Diver ([1974] 2012).

substance is not the familiar language external notions of agent and so forth; it is rather, in Latin, the substance of Degree of Contribution to the Activity.

Consider how the Latin cases would be used to communicate the two ideas “The soldiers built a wall for the purpose of defense” and “Caesar had the soldiers build a wall for the purpose of defense,” Diagram 2.

The point here is the lack of correspondence between the cases and any “real-world” roles such as causer or agent. Instead the substance of Contribution is divided up into relative values. The substance remains, but the language imposes structure upon the substance.

Diver uses the same hypothesis to argue against an appeal to case government. For example, rather than saying that the verb *satisfacio* “satisfy” governs the dative – as opposed to the expected accusative – as direct object, Diver would hold that the party satisfied contributes substantially to the activity of satisfying by having to “agree that the reparations are sufficient,” as in Example (1):

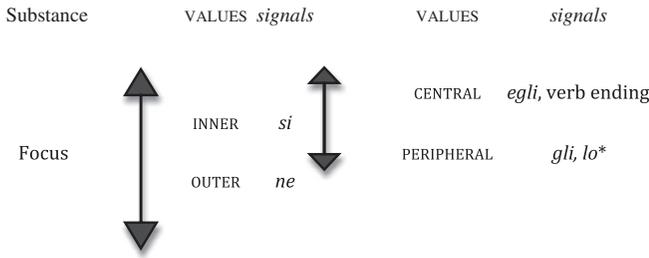
(1) si *Aeduis* de iniuriis quas ipsis intulerint ... satisficiant (*dbg* I: 14).

“if they would satisfy *the Aedui*-DAT in respect of the outrages that they had inflicted on them.”

The wronged Aedui contribute substantially to the activity of satisfying in that the Aedui must consent to the terms of satisfaction. The values of the substance of Degree of Contribution to the Activity, not case government, are responsible for the observed distribution.

In his summative work, Diver ([1995] 2012) continued to rely equally (493) upon substance and structure. His ultimate aim was to provide an account of the observed distribution of physical sound waves (or ink marks). In this way, a structure was imposed upon a substance. The account fell into two parts: *phonology*, the account of the distribution within the morpheme, and *grammar*, the account of the distribution of the morpheme in discourse. In phonology, structure was imposed through the positing of *phonological units* (essentially phonemes with phonetic substance). In the account of their distribution, the substances appealed to were physiological characteristics (e.g., number of articulators). In grammar, structure was imposed through the positing of *meaning-bearing signals* (morphemes, zero, and order phenomena). In the account of the distribution of those signals, there were posited various *semantic substances* (e.g., Degree of Contribution, above, now called “Degrees of Control”), each with its own internal value structure of signals and meanings (e.g., ablative as the signal of the meaning MORE Control). Throughout, “The term *value* ... refers ... to the manner in which the substance is divided up. The substance is of crucial importance for our understanding of how communication takes place” (494). Additionally and crucially, appeal was also made throughout to a *human factor* that included such considerations as economy of effort and the power of inference.

Most Columbia School work has been in this vein, exploring oppositions of value within a certain semantic substance in a given language. For instance, see García (1975) on Deixis in Spanish, Zubin (1979) on participant Focus in German, Gorup (1987) on the interlock of Time and verbal Focus in Serbo-Croatian, Contini-Morava (1989) on the system of Occurrence (including time, probability, and negation) in Swahili, Huffman (1997) on Degree of Control in French, and Reid (1991) on the systems of Number and verbal Focus Number in English. Reid (2011) and Contini-Morava (2011) also engage in a dialog with formal linguistics. Kirsner (2014) engages in a dialog with cognitive grammar.



\* The clitic *gli* here is a stand-in for three datives: *gli* 'him, it' *le* 'her, it' *loro* 'them'; *lo* is a stand-in for four accusatives: *lo* 'him, it,' *la* 'her, it,' *li* 'them-m.', *le* 'them-f.'

**Diagram 3.** The Italian system of focus (on participants in an event).

For an appraisal of Diver's debt to Saussure, see Davis (2004). For an appraisal of Diver's work vis-à-vis post-Saussurean linguistics, particularly Chomskyan generative grammar, usage-based phonology and grammar, and cognitive grammar, see Huffman (2012).

#### 4. Ongoing Columbia School work on substance and structure

Diver's 40-year-old proposal that both substance and structure are required in linguistic analysis finds support too in ongoing Columbia School work. Consider the distribution in discourse of the modern Italian pronominal clitic *si* relative to other clitics (Davis, [forthcoming](#)). *Si* is traditionally known as the third-person reflexive and impersonal clitic "himself, herself, itself, themselves, one."

See Diagram 3, particularly the left-hand side of the diagram.

The distribution of *si* relative to the clitic *ne* reflects an *opposition of value* involving a semantic substance called Focus on participants in the event represented by the verb: *Si* signals the value INNER and *ne* the value OUTER within the substance of Focus. *Ne* is traditionally called the partitive, "of him, her, it, them." The other pronouns subdivide the range of INNER Focus into two more precise values (Davis 1995). In essence, all the pronouns except *ne* place enough Focus on a referent to suit a bona fide participant, someone or something that has a real role to play in the activity, while *ne* places mere bystanders to events at the outer fringes of Focus. The two values of the substance serve to distinguish true participants in an activity from entities that are more remotely associated with the event.

The hypothesis that *si* signals a higher value of Focus than *ne* finds quantitative support from texts in which there is one clearly identifiable principal character. In such texts, the principal character tends strongly to appear in INNER Focus, signaled by *si*, compared with other referents, which tend to appear in OUTER Focus, signaled by *ne* (Table 2).

**Table 2.** FOCUS (INNER/OUTER) associated with character status.

Character status:	<i>si</i>		<i>ne</i>			
	INNER FOCUS		OUTER FOCUS			
	<i>n</i>		<i>n</i>			
Principal	165	.26	2	.02	167	
Other	477	.74	99	.98	576	
	642	1.00	101	1.00	743	OR > 17

Notes: Combined results from three texts – Berto, Montanelli, Calvino – each of which skews in the same direction.

The count confirms that a principal character is rarely referred to by *ne* but is fairly often referred to by *si*. The odds ratio measures the strength of the correlation at 17 (>1).<sup>3</sup> The results are consistent with the hypothesis that *si* signals a higher level of participant Focus than *ne*.

Example (2), below, illustrates the tendency. In CENTRAL Focus (finite verbs *Tendeva, sapeva, stringeva, sentiva, lasciava*) is the principal character, the naive Viscount Medardo, standing pensively at night at some distance from the site of a terrible battle.

- (2) Tendeva lo sguardo al margine dell'orizzonte notturno, dove sapeva essere il campo dei nemici, e a braccia conserte si stringeva con le mani le spalle, contento d'aver certezza insieme di realtà lontane e diverse, e della propria presenza in mezzo a esse. Sentiva il sangue di quella guerra crudele, sparso per mille rivi sulla terra, giungere fino a lui; e *se ne lasciava lambire*, senza provare accanimento né pietà. (Calvino 22)

“He stretched his gaze toward the edge of the night horizon, where he knew the enemies’ camp to be, and with folded arms he squeezed his shoulders with his hands, happy to have certainty both of realities far and wide and of his own presence in the midst of them. He felt the blood of that cruel war, spilled in a thousand streams on the ground, reaching even to him; and he allowed *himself* (*se = si*) to lick *at it* (*ne*), without feeling either rage or pity.”

Here, as often, INNER-Focus *si* refers to the principal character, while OUTER-Focus *ne* refers to something else. Consistent, moreover, with the meaning OUTER Focus of *ne*, the blood of the enemies does not fully participate in the licking. This is not a literal statement: Medardo did not plunge his tongue into the blood running on the ground: not *se lo lasciava lambire* “he let himself lick it,” with both Medardo and the blood at INNER Focus. Rather, he (INNER Focus)

<sup>3</sup>No statistical test of significance is applied here because this is not a random sample and is not representative of some larger population of tokens. That said, an odds ratio of 17 can be considered to be fairly large, since odds ratios range from zero to infinity, with 1 being the tipping point. In words: the odds of a principal character in this text being referred to by *si*, as opposed to *ne*, are 17 times as high as the odds of a secondary character being referred to by *si* as opposed to *ne*. The same rationale for abstaining from a test of significance applies to the absence of a statistical test for the count in Table 3, but all the more so, since the existence of differences among texts is precisely the point there.

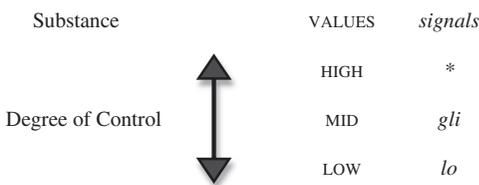
took some pleasure in licking “at it” (OUTER Focus) – pleasure at tasting just a bit of the reality of life and death. This Viscount is a dilettante at war, not fully plunged into it.

Thus, we see the effects of an *opposition of value*, or the importance of structure. This is typical of most Columbia School work, such as that referenced above.

On the other hand, the distribution of *si* relative to the clitics *gli* and *lo* (cf. Diagram 3 again) reflects an *opposition of substance*. By hypothesis, *gli* and *lo* signal grammatical meanings having to do with the substance of Degree of Control over the event while *si* lies outside (or “opts out of”) that substance: *si* does not signal Degree of Control (Davis, *forthcoming*). Note that *si* does not appear in Diagram 4.

The exclusion of *si* from this substance – vs. its *inclusion* in the substance in Diagram 3 – also finds quantitative support. Table 3 gives results of a count made on two chapters from Giacomo Devoto’s history *Gli antichi italici* “The Ancient Italic Peoples.”

Chapter Six, on “Italic Alphabets and Dialects,” has little to say about humans and contains only one personal name at CENTRAL Focus (subject of a finite verb) referring to a human. Chapter Eleven, on “Becoming Part of the Roman World,” contains 54 personal names at CENTRAL Focus referring to humans (54 human grammatical subjects). Since inanimates are routinely viewed by people as exercising less control over events than humans do, we can predict that the chapter on alphabets and dialects, where control is irrelevant, will have a higher ratio of *si* to Control signals than will the chapter about humans, where control *is* relevant.



\* The signal of HIGH Control consists of the *order* of certain clitics.

**Diagram 4.** The Italian system of Degree of Control.

**Table 3.** *Si* - and the opting out of the substance 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>lo</i> (a control meaning) <sup>a</sup>	9	35	
	<b>Ratio</b>	<b>Ratio</b>	<b>OR &gt; 2.4</b>
	<b>14:1</b>	<b>6:1</b>	

<sup>a</sup>Again, *lo* here is a stand-in for four accusatives: *lo, la, li, le*.

The chapter on alphabets has a *si:lo* ratio of about 14:1; the chapter on humans has a *si:lo* ratio of only about 6:1, relatively fewer *si*'s, relatively more signals of Degree of Control. Signals of Degree of Control tend to be used in contexts where distinctions of control are *more* relevant; *si* tends to be used in contexts where such distinctions are *less* relevant.

Thus, we see directly the effects of an opposition of substance, or the importance of substance in linguistic analysis. Substance, like value, has a measurable effect on the usage of the linguistic system.

## 5. Conclusion

In the long and ongoing debate about whether and to what extent linguistics should concern itself with structure vs. substance, the evidence continues to support Diver's conclusion that both structure *and* substance are required if we are to account for our observations of the distribution of forms in authentic discourse. That is the stated goal of Columbia School work. In that framework, the twin analytical questions must be: What is the phonetic or semantic *substance*? And what are the *structural* relations within that substance?

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

*Joseph Davis* is an associate professor at The City College of New York, teaching linguistics in the School of Education. Joseph's research interests include the grammar of Italian pronouns, and methodological and theoretical issues, particularly with regard to the Columbia School of linguistics. Joseph's recent publications include: "Rule, Pattern, and Meaning in the Second-language Teaching of Grammar" (*Acta Linguistica Hafniensia* 2015) and *Language: Communication and Human Behavior. The Linguistic Essays of William Diver*, co-edited with Alan Huffman (Leiden/Boston: Brill 2012).

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