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# SLUICING AND LOGICAL FORM*

This paper presents a novel analysis of Sluicing, an ellipsis construction first described by Ross (1969) and illustrated by the bracketed portion of *I want to do something, but I'm just not sure* [*what* _]. Starting from the assumption that a sluice consists of a displaced Wh-constituent and an empty IP, we show how simple and general LF operations fill out the empty IP and thereby provide it with an interpretable Logical Form. The LF operations we appeal to rely on the influential theory of indefinites developed by Irene Heim and Hans Kamp, and are in harmony with certain aspects of Chomsky's Minimalist Program for linguistic theory. The analysis accounts directly for the familiar properties of Sluicing, as well as some facts which have not previously been observed.

## 1. Introduction

Sluicing is the name given by Ross (1969) to the ellipsis construction bracketed in (1):

(1) a. Somebody just left – guess [who]. (Ross 1969, 252)
b. They claimed they had settled on something, but it wasn't clear [what].

In this construction, a displaced Wh-phrase occurs in isolation in a syntactic environment where one might have expected to find a complete constituent question. Compare the sluices in (1) with the corresponding complete embedded questions in (2):

(2) a. Somebody just left – guess [who *t* just left].
b. They claimed they had settled on something, but it wasn't clear [what they had settled on *t*].

Working within classical transformational theory, Ross argued that Sluicing sentences were derived from complete constituent questions by a deletion transformation. The transformation he proposed was noteworthy in several

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ways: the deleted material evidently did not form a constituent, and the deletion itself, though unbounded, did not observe island constraints.

Our approach to the analysis of Sluicing is different from Ross's. Starting from the assumption that there is no content in the d-structure of a sluice corresponding to the ellipsis, we ask how this radically reduced structure is interpreted. Our answer is that the interpretation is read off a Logical Form which is constructed for the sluice via simple and principled LF operations.

Here we present and motivate the LF operations that supply a Logical Form for sluices. Our overall aims are two: First, we argue that our LF approach offers the best available account of Sluicing (other accounts can be found in Ross 1969; Rosen 1976; Williams 1977; Levin 1982; Chao 1987; Lobeck 1991, 1992; and Ginzburg 1992). Second, we show that the LF operations we appeal to are both general and well-behaved – almost expected – from the viewpoint of current syntactic and semantic theory. If we are correct, then the existence of this ellipsis construction, which seemed rather arcane when first documented by Ross, follows immediately from the overall architecture of the LF component and the operations it makes available. In this sense, our investigation can be read as an extended argument in favor of a certain conception of Logical Form.

A central element of our account is the idea that the Logical Form created for the sluice must supply a free variable for the interrogative operator to bind. This aspect of our analysis depends on the influential theory of indefinites developed by Irene Heim (1982) and Hans Kamp (Kamp 1984; Kamp and Reyle 1991). It leads us directly to an account of some curious restrictions which, as far as we know, have not been observed before, and which constitute our main empirical contribution to the study of Sluicing.

Also central to our approach is the idea that the Logical Form created for the sluice reuses (or recycles) available linguistic structure, which can then be further elaborated. This idea leads us to a specific conception of the relationship between argument structure and syntactic structure – one which clearly violates the Projection Principle of Chomsky (1981), but which is remarkably compatible with the view of grammar sketched in Chomsky's (1993) 'Minimalist Program for Linguistic Theory'. We defend this conception against pure deletion approaches to Sluicing, of the sort advocated by Ross (1969) and (for different sorts of ellipsis) Fiengo and May (1994) and Chomsky (1993). As we show, only our approach handles the empirical complexity of Sluicing's interaction with the constraints on movement – a complexity first observed in unpublished work by Chris Albert.

Section 2 presents Sluicing in a nutshell, classifying the basic facts which



any adequate analysis will have to account for. Sections 3–5 present our analysis and show how it accounts for the facts. The analysis and its conceptual underpinnings are compared with other approaches to Sluicing in Section 6, and then refined further in Section 7. Finally, Section 8 returns to the LF operations that constitute the core of our analysis, drawing out their larger implications for syntactic theory and the theory of Logical Form.

## 2. Sluicing: The Basic Cases

The classical examples of Sluicing discussed by Ross (1969) and others fall into three groups, which can be characterized informally as follows.

In the first group, the *displaced constituent* – the Wh-category which constitutes the only overt material in the sluice – is an adjunct that corresponds to nothing in the surrounding linguistic structure:

(3) a. He's writing, but you can't imagine where/why/how fast/with whom. (Ross 1969, 252)
b. This opera was written in the 19th century, but we're not sure by whom.
c. If Sam was going, Sally would know where.

In the second group, the displaced constituent corresponds to an overt adjunct or argument in the surrounding linguistic structure. In all the examples in the literature, this *inner antecedent* happens to be an indefinite or other weak DP:[1]

(4) a. He's going to give us *one old problem* for the test, but which problem isn't clear. (Ross 1969, 255)
b. She's reading *something*. I can't imagine what.
c. They're going to serve the guests *something*, but it's unclear what.

[1] The displaced constituent in the sluice of (3b) is a PP. Note that P and its object may invert as in (4d) – a fact first noted by Ross (1969, 265–266), who analyzed the inverted P as a stranded preposition. The viability of Ross's original analysis is questioned by Rosen (1976, 208–209), who observes that inversion is more restricted than a preposition stranding analysis would predict. We claim that inversion is (idiosyncratically restricted) movement of P's complement to its specifier (as seen more productively in other Germanic languages). This enables us to maintain – contra Ross – that, even when inversion has occurred, the s-structure of the sluice contains a displaced PP and a completely null IP. In any event, whatever the best analysis, inversion is one of the distinguishing characteristics of Sluicing. For this reason, we often cite sluices with inverted PP's to verify that we are indeed dealing with Sluicing and not some other kind of ellipsis.