Indefiniteness and the Typology of Implicit Arguments

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1. Introduction

Dating back to Fillmore (1969)'s seminal work, the literature on implicit arguments (IAs) has consistently distinguished two types of IAs : those which can be paraphrased with an overt indefinite, as in (1a)[1], and those which are better paraphrased with a pronoun or definite description, such as (1b).

(1) a. John ate [THEME]. ⇐ **Indefinite Implicit Argument**
b. Maribel noticed [STATE OF AFFAIRS]. ⇐ **Definite Implicit Argument**

This paper upholds this distinction between **indefinite IAs** and **definite IAs**, but argues that many apparent implicit arguments, such as (2), do not uniformly belong to either category, but rather constitute a third category, to which we give the descriptive moniker **flexible IAs**. As we will show below, flexible IAs appear to pattern with definite IAs on some occasions and indefinite IAs on others.

(2) The Giants won [CONTEST]. ⇐ **Flexible Implicit Argument**

The remainder of the paper is organized as follows: §**2** demonstrates the existence of true indefinite and definite implicit arguments according to two diagnostics: novelty and Sluicing; §**3** shows that many implicit arguments belong to a third class – flexible IAs – which do not pattern with either indefinite or definite IAs; §§**4-5** present three possible ways of semantically analyzing flexible IAs, ultimately arguing that they are simply existential lexical/metaphysical entailments, hence not true arguments at all; §**6** begins to explore ramifications of the three-way classification for the semantics and distribution of true indefinite and definites IAs; and §**7** concludes.

2. Indefinite and definite implicit arguments

Fillmore (1969)'s two-way classification of IAs into indefinite and definite is aimed at capturing the observation that definite ones like (1b) generally receive their referent from context, whereas indefinite ones like (1a) introduce a new discourse referent: a meal that John ate. One aspect of indefinite and definite IAs which this characterization makes clear is that the exact nature of the IA – whether definite or indefinite – must be lexically specified along at least two dimensions. First, whether or not the verb allows for an IA at all must be lexically specified. For example, Fillmore (1986) points out that there are many near minimal pairs where one member allows for an IA and the other does not, as in (3-4).

(3) a. John ate [THEME].
b. *John devoured.

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[1] Throughout, we will represent implicit arguments with a bracketed small caps, e.g. [THEME]. The labels in the brackets have no theoretical status, but are merely intended to make clear which apparent IA is being discussed. In particular, we take no stance on the thorny issue of whether and how indefinite and definite IAs are represented *syntactically*. See Bhatt & Pancheva (2006) for a recent survey of the literature on this point.

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(4) a. Maribel found out [STATE OF AFFAIRS].
b. *Maribel discovered.

The second aspect of indefinite and definite IAs that must be lexically specified in some cases is the descriptive content of the IA. For example, Fillmore (1986) notes that the [THEME] IA in (3a) must be something like "a meal" even though the range of overt objects *eat* can take is far broader. The same is true of a verb like *drink*, which allows for an indefinite IA object (e.g. 'Fred drank.'), but requires that object to be an alcoholic beverage. We will not discuss these lexical specifications further, but instead turn to making more precise what exactly we mean by calling IAs "definite" or "indefinite".

We will illustrate this by drawing on data from two properties which distinguish overt indefinites and definites in English: the possibility of apparently anaphoric readings (§2.1) and the ability to serve as the inner antecedent for Sluicing (§2.2).

2.1. Novelty

Following Heim (1982) and many others, we take one of the core properties distinguishing overt indefinites from definites and pronouns to be that whereas the former introduce a new discourse referent (dref), the latter are subject to the opposite condition: their dref should be familiar in the discourse.[2] Given the labels we have given to indefinite and definite IAs, we expect that felicitous uses of indefinite IAs must introduce novel drefs, whereas definite IAs must not. As noted by Fillmore (1986), this expectation is borne out by the asymmetry between the infelicity of the coreferential interpretation of the indefinite IAs in (5) and the felicity of those in (6). The context established by A's utterance in (5a) only naturally allows for a coreferential intepretation, and yet, B's utterance cannot be interpreted as such. B's utterance simply cannot be used to mean "Sorry, I ate [your sandwich]." no matter the context.[3]

(5) a. A: What happened to my sandwich? Fillmore (1986)
B: #Fido ate [THEME].
b. A: I see you've got today's *Guardian*. Allerton (1975)
A: # May I read [THEME]?
c. A: Officer Gutiérrez is a very good detective.
B: #Yeah, I hear the criminal was detained [AGENT].

(6) a. The government has a secret plan.
If they aren't careful, the media will find out [STATE OF AFFAIRS].
b. A: John is really tall
B: I know, I noticed [STATE OF AFFAIRS].

We turn now to our second diagnostic which distinguishes overt indefinites and definites: Sluicing.

2.2. Sluicing

Sluicing is the name given by Ross (1969) to the phenomenon in (7) in which the crossed out material can be elided in the presence of a suitable antecedent clause in prior discourse:

(7) **[** Someone left**]**$_A$, but I don't know **[**who ~~left~~**]**$_E$.

Crucial to the felicity of (7) is the presence of the indefinite *someone*, what they dub the "inner antecedent". As observed systematically by Chung et al. (1995), indefinites can readily serve as inner antecedent whereas definites (and strong quantifiers like *most* and *every*) usually cannot. Given this, we expect that indefinite IAs should license Sluicing while definite IAs should not. Again, this expectation is borne out:

[2] Partee (1989) has pointed out that definite IAs, like overt pronouns (and unlike indefinites), can also have deictic and bound-variable interpretations. We focus mostly on the discourse anaphoric uses in what follows, as these are the most immediately relevant to the examination of flexible IAs in §3.

[3] As with overt indefinites, there exists the somewhat marginal possibility to play coy by using an indefinite IAs to *feign* non-coreferentiality, possibly along with some sort of special intonation (e.g. 'Sounds like *somebody*'s got a case of the Mondays.').

(8) a. The protestor was detained [AGENT], but I don't know who by.
b. Fred baked [THEME], and Lucinda's going to find out what.

(9) a. A: Maribel noticed [STATE OF AFFAIRS]. B: #What?.
b. #After a long journey, Bill arrived [LOCATION], and Jacob wants to find out where.

There are two points raised by these data which are worth mentioning before we turn to flexible IAs. First, the underlined remnant in the felicitous sluices requires a certain amount of similarity in form to the antecedent material. For example, the preposition *by* in (8a) is obligatory in these cases, since it was not present in the antecedent material. This requirement, first described systematically by Chung (2006), can be formulated as in (10) (the name "No New Morphemes" is due to Jason Merchant).

(10) **No New Morphemes:** Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.

The second point is that the inability of Sluicing with definite IAs in (9) is expected because, as observed by Fillmore (1986), the full clausal version is itself infelicitous. Given this, the asymmetry between these two cases is readily predicted by any theory of Sluicing which directly ties the grammaticality of the Sluice to that of its full clausal counterpart.

To sum up, in this section, we have seen confirmation for the two types of implicit arguments distinguished by Fillmore (1969): what we have termed definite and indefinite IAs. Like their overt counterparts, definite IAs can be readily interpreted as coreferential with a familiar dref and cannot serve as the inner antecedent for Sluicing. Indefinite IAs, on the other hand, necessarily introduce novel drefs and can readily serve as inner antecedents for Sluicing. In contrast to these two classes of IAs, however, we will see in §3 that these same diagnostics show that there is a third class of IAs, patterning with neither of these categories.

3. A third kind of implicit argument

In §2, we have seen that data from novelty and Sluicing provide empirical support for Fillmore's classic distinction between indefinite and definite IAs. In this section, we will show that these same two diagnostics reveal the existence of a third class of IAs, which we dub **flexible** IAs. As the name suggests, flexible IAs pattern with definite IAs in some examples and with indefinite IAs in others. This first property can be seen by the felicity of apparently anaphoric interpretations of flexible IAs when the context provides a prior dref of the appropriate sort, as in (11):

(11) a. A: Fred just won the lottery.
B: I am so jealous [STIMULUS].
b. There is a small bull's-eye at the other end of the range.
I've been firing [GOAL] all day, but still haven't hit it.
c. The Nobel prize is a really big deal. It's an honor just to be nominated [AWARD].

While the felicity of these examples on a coreferential interpretation of the IA is parallel to what we have seen with definite IAs, (6), it stands in stark contrast with indefinite IAs, (5). However, while flexible IAs do pattern with definite IAs with respect to novelty, they differ from them with respect to our second diagnostic, Sluicing. Here, we find that flexible IAs pattern instead with indefinite IAs, licensing Sluicing, as in (12).

(12) a. They're jealous [STIMULUS], but it's unclear of who. Chung (2006)
b. They were firing [GOAL], but at what was unclear. Chung et al. (2010)
c. John has been nominated [AWARD], but he still hasn't found out for which award.

What we have seen from our two diagnostics is that flexible IAs allow for a broader range of interpretations than either definite or indefinite IAs or their overt counterparts. While flexible IAs can apparently function either as definites or indefinites, they nonetheless cannot do both simultaneously,

as in (13). If the flexible IA is construed as coreferential with a prior dref, it can no longer serve as the inner antecedent for Sluicing. As in the case of definite IAs above, this is presumably because the non-elliptical control is odd (again, given the coreferential construal).

(13) # I just won the lottery. John is jealous [STIMULUS], but I don't know {who/what } of.

Thus far, we have seen that two empirical diagnostics of (in)definiteness reveal the existence of three classes of implicit arguments. In addition to definite and indefinite IAs, these diagnostics reveal a third class which, descriptively, appears to be "flexible" between definite and indefinite-like interpretations.

(14) **3 types of implicit arguments:**

	DEFINITE	FLEXIBLE	INDEFINITE
Coreferential w/ prior dref?	Yes	Yes	No
Inner Antecedent for Sluicing?	No	Yes	Yes

Having established the existence of these three classes of implicit arguments, we turn in §§4-5 to the semantic/pragmatic analysis of flexible IAs. In §6, we will provide a preliminary look at implications of the proposal for the semantics of definite IAs and for attempts to provide a principled explanation for the distribution of different types of implicit arguments.

4. Three analytical options

In this section, we will explore three different analyses of flexible IAs, ultimately settling on the third of these: that flexible IAs are mere existential entailments, similar to Recanati (2007)'s proposal for certain IAs.

4.1. Option 1: flexible IAs are ambiguous

Given that flexible IAs appear to behave like definite IAs in some examples, (11), and indefinite IAs in others, (12), perhaps the most obvious analysis is to posit that flexible IAs are IAs which are lexically specified as *ambiguous* between a definite IA and an indefinite one. Under this approach, the apparently anaphoric interpretations of flexible IAs in (11) are instances of the definite IA reading, while the Sluicing examples in (12) are examples of the indefinite IA reading. Having resolved the ambiguity one way or the other, the novelty and Sluicing data follow straightforwardly, as does the infelicity of (13).

While it is hard to falsify such an account, it seems clear that it mostly restates the facts, rather than providing a deep explanation. This is especially so since the proposed ambiguity is of an element which is already null in the first place and has no obvious overt counterpart. For the moment, then, the argument against a covert ambiguity analysis largely rests with Occam's razor. Once we consider Sluicing with flexible IAs in more detail in §5, however, a more direct argument against it will emerge.

4.2. Option 2: flexible IAs are Salish-style indefinites

As Matthewson (1996) demonstrates, many Salishan languages have a single determiner which is compatible with both definite-like and indefinite-like uses. She provides pairs of sentences like (15a) and (15b), where the first sentence introduces a novel dref, and the second one refers back to this then familiar dref. In English, of course, the (overt) determiner in (15a) would be indefinite, while in the second, it would be definite. In Sechelt, however, a single determiner *lhe* occurs in both sentences.

(15) a. t'i súxwt-as **lhe** 7úlhka7 slhánay ...
fact saw-he **det** snake woman
'He saw a snake woman ...' ⇐ **Indefinite** Matthewson (1996), p. 34

b. t'i tl'um s-kwal-s **lhe** slhánay ...
fact then nom-speak-her **det** woman
'Then the woman said ...' ⇐ **Definite** Matthewson (1996), p. 34

Rather than posit a covert ambiguity, Matthewson (1996) argues that such determiners have essentially the same semantics as English indefinites[4], but lacking the novelty condition. Given the existence of an overt determiner exhibiting a flexibility superficially akin to that of flexible IAs, we might propose that flexible IAs are Salish-style indefinites, i.e. indefinites which do not impose a novelty condition.

Applying this approach to flexible IAs, however, conflicts with a pragmatic account of the novelty condition. On Heim (1991)'s now standard account (building on insights by Hawkins (1991)), the novelty condition for (overt) indefinites in German and English comes about via pragmatic competition with the competing definite. The definite has the same semantics as the indefinite, but imposes a familiarity presupposition in addition. A general pragmatic principle – Maximize Presupposition – obliges the use of the definite when possible, i.e. when the intended referent is familiar in the discourse. As Matthewson (1996) shows, this account actually extends quite naturally to Salish languages, since there is no definite competitor to the indefinite.

For flexible IAs, however, such an explanation is not readily available since English, of course, does have a definite article. Moreover, it cannot be easily attributed to implicit argumenthood per se since, as we saw in §2, there are also definite and indefinite IAs which have the same familiarity/novelty conditions as their overt counterparts.[5] Since flexible IAs exist alongside indefinite IAs with the usual novelty condition, it appears that this analysis must specify the novelty condition (or lack thereof) in the lexical semantics rather than deriving it pragmatically. Without independent reason to believe this, this seems like an undesirable result.

4.3. Option 3: flexible IAs are mere existential entailments, not arguments at all

The third approach, and the one which we adopt here, is to treat flexible IAs as being existential lexical entailments of particular predicates. In this account, then, despite our descriptive terminology, flexible IAs are not true semantic *arguments* at all, but are instead absent from the semantic representation altogether. More concretely, we propose semantic representations of the following sort:

(16) John ate [THEME]. $\rightsquigarrow \exists x.\text{eat}(\text{J}, x)$

(17) John is jealous [STIMULUS]. $\rightsquigarrow \text{jealous}(\text{J})$

If we were to list out the lexical entailments produced by the predicate *jealous*, they would include the existence of a stimulus alongside other well-known lexical entailments (e.g. that the subject/experiencer be sentient). While the existence of a stimulus is an entailment of (17), this information is not part of the semantic *argument structure* of the predicate itself.

Recanati (2007) has argued for a quite similar approach for the implicit location argument of weather verbs in sentences like 'It is raining.'.[6] While much of his discussion is focused on weather verbs, he argues that the approach extends to all implicit arguments other than the ones we have been calling definite IAs. Applying such an approach to both flexible IAs and indefinite IAs, however, makes it unclear how to capture the asymmetry in novelty behavior between the two classes, repeated in (18).

(18) a. A: What happened to my sandwich?
B: #Sorry, I ate [THEME].

b. A: Fred just won the lottery.
B: I am so jealous [STIMULUS].

[4] There are several other differences, which are not relevant here, having to do with their syntax, scope, etc.

[5] It should be noted that indefinite IAs do pose a bit of a puzzle for Maximize Presupposition since there it is not fully clear what the minimally different presupposing competitor form ought to be. For example, the competing form cannot be the same sentence with a definite IA replacing the indefinite IA since the choice of these is lexically determined by the predicate. We set this issue aside in what follows, as one can find numerous similar puzzles even with overt indefinites, as discussed by Percus (2006)

[6] Recanati dubs such entailments "metaphysical" rather than "lexical". That is to say that the nature of rain is such that it is a metaphysical necessity that it have a spatiotemporal location. While this may well be true for weather verbs it is not clear whether or not this is true for some of the other flexible IAs discussed here. In order to stay neutral regarding such philosophical issues, we will continue to use the more general term 'lexical entailment'.

On the present approach, this asymmetry is readily captured under the assumption that Maximize Presupposition (MP) only applies to indefinites which are present in the semantic representation. This successfully distinguishes flexible IAs from indefinite IAs, which we take to be present in the semantics like overt indefinites (though, of course, with different scopal properties). Since indefinite IAs are semantic arguments, MP applies and obliges the use of a competing presupposing form when its presuppositions would be met. For Recanati (2007)'s conflation to succeed, there would have to be some other way to cause MP to apply to indefinite IAs, but not flexible ones. We leave the exploration of this possibility to future work, as it requires a more careful consideration of MP more generally than space allows presently.

5. Sprouting with flexible IAs as issue-bridging

In the previous section, we argued that flexible IAs are lexical entailments rather than true semantic arguments of any sort. We argued that the novelty data follow under the quite natural assumption that Maximize Presupposition only applies to things present explicitly in the semantic representation. Under this approach, however, one basic question remains: if flexible IAs are not indefinites, how then do they license Sluicing of the sort in (19), repeated from (12)?

(19) a. They're jealous [STIMULUS], but it's unclear <u>of who</u>. Chung (2006)
b. They were firing [GOAL], but <u>at what</u> was unclear. Chung et al. (2011)
c. John has been nominated [AWARD], but he still hasn't found out <u>for which award</u>.

In order to answer this question, we first need to make clear some background assumptions about how Sluicing works in general. Following AnderBois (2011), we distinguish between two subtypes of Sluicing: **(i)** *direct*: cases where the semantic representation provides an inquisitive element directly corresponding to the wh-remnant in the E-clause (whether or not one is pronounced or present in the surface syntax), and **(ii)** *indirect*: cases where there is no such element in the semantics (and therefore, presumably, in the the surface syntax as well).

5.1. Direct Sluicing

Following AnderBois (2011) (which in turn builds on Merchant (2001)) we take Sluicing to be PF-deletion subject to a semantic requirement: symmetric entailment defined over inquisitive semantic denotations.[7] In inquisitive semantics, the denotation of an assertion – like that of a question – is a set of alternative propositions. For example, a sentence like "Someone left." will denote a set of alternatives of the form '*x* left.' This denotation aims to model two aspects of the sentence's contribution to discourse. First, asserting the sentence proposes to add to the common ground the truth-conditional *information* that there is some alternative or other which contains the world of evaluation. Second, it makes salient in the discourse the *issue* of which alternative(s) from this set in fact hold.

(20) $[\![$ Someone left $]\!] = \{ \quad \{w' : \text{Mary left in } w'\}, \{w' : \text{John left in } w'\}, \ldots \quad \}$

(21) Someone left, but I don't know who ~~left~~.

A sluice like (21), then, is licensed because the set of alternatives in the inquisitive denotation of the antecedent, (20), is the same as those in the denotation of the question to be elided, in this case 'Who left?'. In AnderBois (2011), I argue that making Sluicing sensitive to these alternative-rich denotations allows us to distinguish licit inner antecedents, such as indefinites and disjunctions, from truth-conditionally equivalent illicit ones such as doubly negated indefinites and indefinites inside appositive relative clauses. Having summarized the approach for cases with a phonetically overt inner antecedent (Chung et al. (1995)'s Merger), we turn now to cases where no such element is pronounced, instances of so-called Sprouting.

For indefinite IAs as in (22), extending the account is straightforward since we have proposed that the semantic representation of indefinite IAs includes an existential quantifier just like an overt indefinite. Therefore, Sluicing is correctly predicted to be licensed, parallel to (21).

[7] In addition to this semantic requirement, we assume that Sluicing is also subject to Chung (2006)'s morphosyntactic requirement, stated in (10).

(22) Alejandro drank [THEME] at the party, and his mom's going to find out what ~~he drank~~.

While the core of the account is the same as for overt indefinites, there are two important points to be made regarding Sluicing with indefinite IAs. First, as mentioned briefly in §2, it has been long noted that the IAs of a predicate often impose restrictions on their content above and beyond what the predicate imposes on overt arguments. For example, Allerton (1975) notes that the verb *drink* "normally suggests an object beverage that is [+ALCOHOLIC]", rather than any arbitrary liquid. Since this additional restrictor material is present in the antecedent clause, it is inherited by the wh-word, similar to overt restrictors like *from Kankakee* in Ross (1969)'s example (see AnderBois (2011) for detailed analysis of these facts, what Chung et al. (1995) dub 'inheritance of content').

(23) Ralph is going to invite someone from Kankakee to the party, but they dont know who.

The second apparent difference between Sluicing with indefinite IAs and overt indefinites is the lack of island amelioration (first noted in Chung et al. (1995)). Space precludes a detailed discussion here, but in AnderBois (2011), I argue, following Romero (1998) and Merchant (2001), that this asymmetry is due to the independently observable propensity of indefinite IAs to take narrow-scope.

5.2. Indirect Sluicing

Having argued that flexible IAs are mere existential lexical entailments rather than indefinites of any sort, Sluicing with flexible IAs cannot work in the same way as with indefinite IAs. Rather than assimilating flexible IAs to indefinite IAs, then, we propose to assimilate it to another case where sprouting succeeds without a direct inner antecedent: sprouting with adjuncts as in (24).

(24) a. John biked, but I don't know where from.
b. He finished the project, but we don't know with whose help. Chung (2006)

The account of direct sluicing proposed above relied crucially on the presence of an inquisitive element in the antecedent clause (either an overt indefinite or indefinite IA in the examples here). For *indirect* Sluices like those in (24), however, this is implausible. Asserting the antecedent clause "John biked." clearly does not as a matter of semantics, make salient the issue of where he biked from. More strikingly, as Chung (2006) has pointed out, many felicitous adjunct sluices, such as (24b), do not even entail the information of the existential claim (i.e. he could finish the project all by himself). In AnderBois (2011), I propose an account where sprouting with adjuncts is the result of inquisitive existential quantification of a neo-Davidsonian event (or state) argument plus an inferential process which I call 'issue-bridging'.

For direct Sluicing, the inquisitive existential quantification over individuals produced a set of alternatives as in (25). Existential event quantification is parallel, as in (26), producing a set of alternatives differing in events/states rather than individuals.

(25) a. Someone biked.
b. $[\![\exists x.\text{bike}'(x)]\!] =$

$$\left\{\begin{array}{c}\text{John biked}\\ \text{Maribel biked}\\ \text{Alexis biked}\\ \text{Ignacio biked}\\ \dots\end{array}\right\}$$

(26) a. John biked.
b. $[\![\exists e.\text{bike}'(e) \wedge \text{AGENT}(\text{J}, e)]\!]$

$$\left\{\begin{array}{c}\text{e}_1 \text{ is an event of John biking}\\ \text{e}_2 \text{ is an event of John biking}\\ \text{e}_3 \text{ is an event of John biking}\\ \text{e}_4 \text{ is an event of John biking}\\ \dots\end{array}\right\}$$

Returning to the Sluice in (24a), the semantics of the A clause, (26b), includes the information that there is some event or other of John biking and raises the issue of *which event* it is, i.e. it makes the details of the event a salient topic for immediate discussion. The E clause doesn't address exactly this issue, but rather a closely related issue: *what kind* of event is it, and in particular in (24a), what the starting point of the biking event is. The claim, then, is that sluicing of this sort is the result of the A and E clauses denoting sufficiently similar issues, rather than precisely the same one. That is, indirect sluicing is subject to the following condition:

(27) **Covariation condition:** Indirect sprouting is felicitous to the extent that the context allows for the inference that the alternatives in the A clause covary with the alternatives in the E clause.

For (24a), the sluice is predicted to be felicitous as long as the context allows for the inference that events of John biking differ in their starting points. Parallel to direct sprouting with indefinite IAs, the lack of island amelioration is due to the the independently observable scopal properties of existential event quantification (Landman (2000) *et seq.*)

5.3. Sluicing with flexible IAs is indirect sluicing

Extending this approach to flexible IAs of the sort in (28) is straightforward given the similarities between arguments and adjuncts under a (neo-)Davidsonian semantics. The A clause denotes a set of alternatives of the form 'e_x is an eventuality of John being jealous' with the stimulus of this state being a mere lexical entailment.

(28) John is definitely jealous, but everyone is wondering what of ~~John is jealous~~.

The E clause carves up the space of eventualities according to the stimulus of John's jealousy. According to the covariation condition, then, Sluicing should be felicitous to the extent that prospective states of John being jealous covary with the stimulus of his jealousy. In the out of the blue context in (28), this condition is likely to be met or easily accommodated and the Sluicing is therefore predicted to be felicitous. On the other hand, this condition correctly rules out cases like (29), repeated from (13), where context has already supplied a stimulus: my winning the lottery. In this case, the covariation condition is not met and the Sluicing is predicted correctly to be infelicitous.

(29) # I just won the lottery. John is jealous [STIMULUS], but I don't know {who/what } of.

In this section, we have argued that Sluicing with flexible IAs can be accounted for in essentially the same way as sprouting with adjuncts, many of which do not even have a classical existential entailment in the antecedent clause (e.g. (24b)). Under the analysis we have proposed, indirect sluicing of this sort makes crucial use of *inference* to bridge the gap between the issues in the denotations of the A and E clauses. The presence of this inferential leap distinguishes the proposed analysis of flexible IAs in §4.3 from the other two potential analyses considered in §§4.1-4.2. Under both the ambiguity analysis and Salish-style indefinite analysis, flexible IAs are (or at least can be) true indefinites, just like indefinite IAs and overt indefinites. As such, these approaches predict a lesser degree of context-sensitivity for Sluicing with flexible IAs than the lexical entailment approach does. Once we have constructed a context which unambiguously yields the indefinite interpretation, the ambiguity and Salish-style approaches predict that Sluicing ought to be as free as it is for overt indefinites (and indefinite IAs).

One place where we find support for the role of contextual variability for flexible IAs is from predicates which select for both an indefinite IA and a flexible one. One such case appears to be the [GIFT] and [CHARITY] arguments of the verb *contribute*. Under a two-way classification for IAs, Fillmore (1986) claims that these two IAs are indefinite and definite, respectively, consistent with the novelty data in (30).

(30) **Novelty:**

a. A: What happened to my jacket on the table?
   B: # I contributed [GIFT] to the coat drive!

b. Did you give to the fund? I already contributed $20 [CHARITY].

Unsurprisingly, given the novelty data, we find that the [GIFT] IA readily serves as the inner antecedent for Sluicing in (31a), even though the context provides a particular gift, $20, which might plausibly be referred back to subsequently. For the [CHARITY] IA, however, the novelty data are consistent either with it being a true definite IA or a flexible IA. Out of the blue, as in (31b), Sluicing from the [CHARITY] IA is somewhat odd. However, given sufficient context, otherwise similar cases of Sluicing can be quite felicitous, as in (31c).

(31) **Sluicing:**

a. A: The most common amount to contribute is $20.
B: I will contribute [GIFT], but I don't know how much.

b. ?? I will contribute [CHARITY], but I don't know what to.

c. This guy with a clipboard kept pestering me for money, so eventually I contributed, but I'm still not sure what to.

The fact that Sluicing is possible at all with the [CHARITY] IA makes clear that it cannot be a true definite IA, since definite IAs like those of *notice* and *arrive* do not allow for Sluicing regardless of context. On the other hand, the pattern in (31) is consistent with the present account of flexible IAs. Sluicing is possible, but in order to be fully felicitous, it requires a rich context supporting the covariation condition. While this evidence is suggestive, we leave a full investigation of the role of context in determining the felicity of flexible IAs to future work. One main reason for this is that, since the different kinds of IAs being compared are lexically selected, it is not possible to construct true minimal pairs.

6. Implications for definite and indefinite IAs

Thus far, I have argued for a three-way typology of apparent IAs and argued that one of these types – flexible IAs – are mere lexical entailments, rather than being true *arguments* at all. If this is on the right track, then there are fewer true IAs than is generally assumed. In this section, I want to briefly point out the implications of this new picture for two issues from previous literature on implicit arguments.

6.1. Are anaphoric IAs like pronouns or definites?

While we have focused on discourse-anaphoric uses of definite and flexible IAs, it has been observed by Partee (1989) that at least some definite IAs can also have deictic and bound-variable readings, similar to overt pronouns (though she does note some subtle differences as well). Based on contrasts like that in (32), Condoravdi & Gawron (1996) argue that the interpretive possibilities of certain IAs are actually a bit broader than those of pronouns, having more in common with (bridging) definite descriptions. For example, they note that (32) naturally receives an interpretation which can be paraphrased as (32a), but not (32b):

(32) Every man who bet on the Superbowl won [BET].

a. $\approx$ Every man who bet on the Superbowl won the bet he placed.

b. $\not\approx$ Every man who bet on the Superbowl won it.

More recently, Pedersen (2011) has proposed an analysis of definite IAs in a variable-free semantics, in which he assimilates them to pronouns rather than definite descriptions. About the data in (32), Pedersen suggests that the IA of *win* appears to allow indefinite interpretations in some examples and therefore does not bear on the semantics of definite IAs at all. Given the three-way typology of IAs and diagnostics we have proposed, we can now put some teeth on Pedersen's observation. The fact that it allows for Sluicing, as in (33), gives clear evidence that the [BET] argument of *win* cannot be a true definite IA.[8] At the same time, however, it equally cannot be an indefinite IA, as the apparently anaphoric interpretation of (34) shows. Neither true indefinite IAs nor overt indefinites allow for this possibility, as we have seen.

(33) Fred definitely won [BET], but I'm not sure which bet.

(34) That was quite a game! I can't believe the Giants won [CONTEST]!

Taken together, then, these two data points lead us to conclude that the [BET] argument of *win* here is a flexible IA, not a definite one. The interpretive possibilities for the IA of *win* are broader than

[8] Pedersen (2011) does mention Sluicing as a diagnostic for indefinite IAs, but provides stripping data rather for *win* rather than Sluicing. Depending on the proper analysis of the stripping in question, this data may well make the same point.

for definites or pronouns and therefore have no direct bearing on the semantics of true definite IAs of the *notice*-type. If this pattern proves to hold of such cases more generally, then, the argument against treating definite IAs as pronouns goes away.

Determining if this indeed holds generally, however, is not straightforward. First of all, some of the elements most discussed in previous literature which introduce the implicit arguments in question do not readily allow for overt arguments at all such as *local*. Given this, we cannot even construct the overt wh-question in isolation (e.g. #"To where is the bar local?"), and therefore cannot make use of the Sluicing diagnostic. Note that this contrasts with definite IAs where we generally can construct the overt wh-questions (e.g. "What did John notice?").

More problematic, however, is that many of the IAs discussed by Condoravdi & Gawron (1996) are temporal and locative ones. Because we can talk of about times and locations at different levels of granularity, even overt referential arguments allow for Sluicing as long as the alternatives in the E clause are at a more fine-grained level than the time/location of the A clause.

(35) Alejandro lives in California, but I don't know where ~~Alejandro lives~~.

(36) Maribel left Sunday, but I don't know when ~~Maribel left~~.

Since Sluicing with overt arguments is not clearly sensitive to whether they are definite or indefinite, we cannot use this to diagnose the indefiniteness of implicit arguments, at least not straightforwardly. As such, we leave further investigation of this issue to future work as it involves more careful consideration of the semantics and temporal and locative expressions than is possible here.

6.2. Is the distribution of IAs predictable in some way?

The second implication I would like to briefly mention has to do with the distribution of definite and indefinite IAs and whether it is in some way predictable. One thing which remains clear is that whether or not a predicate allows for an IA in the first place is not predictable from the lexical semantics. For example, Fillmore (1986) gives numerous pairs of near synonyms, (37), where one member allows for an IA, but the other requires an overt argument.

(37) a. She {promised / tried / found out / looked / objected }
b. *She {pledged / attempted / discovered / sought / opposed }

While it is plainly not possible to predict whether an IA is possible at all, the question of whether it is possible to predict whether a given IA will be definite or indefinite is less clear. While Fillmore (1986) does not propose a concrete account of the two classes, he does note certain trends, most notably the fact that [THEME] IAs are always indefinites. Furthermore, previous literature does not provide minimal pairs with indefinite and definite IAs of the sort in (37).[9]. Having argued that there are far fewer true indefinite/definite IAs than often assumed, two tentative generalizations emerge about the distribution of indefinite vs. definite IAs in English.

(38) a. **Generalization 1a:** Indefinite IAs only occur in two positions:
(i) implicit themes whose overt counterparts are DP direct objects without prepositions
(ii) implicit causers/agents of passives.
b. **Generalization 1b:** Definite IAs do not occur in these positions.

(39) **Generalization 2:** No predicate selects for more than one true IA.

Generalization 1 builds on Fillmore (1986)'s insight, but is a bit more restrictive since some of the seeming counterexamples appear to be flexible IAs – and hence, not be true IAs at all (e.g. the [CONTEST] argument of *win*, the [RECIPIENT] of *flirt*). Generalization 2 is a bit more preliminary, but seems to stand up against putative counterexamples from previous literature. For example, we have seen in (30-31) that *contribute* has an indefinite [GIFT] IA (as originally claimed by Fillmore (1986)), but a

[9] The only putative minimal pair I am aware of is British English *telephone* vs. *ring up*, which Allerton (1975) claims to contribute indefinite and definite IAs respectively.

flexible [CHARITY] IA. Similarly, we can see in (40-41) that the musical sense of *play* has an indefinite [SONG] (as claimed by Allerton (1975)), but that the [INSTRUMENT] appears to be a flexible IA.

(40) **Novelty:**

a. A: My favorite song is "Rainbow Connection".
B: # You should have been here yesterday, Willie Nelson played [SONG].

b. A: My favorite obscure musical instrument is the harpsichord.
B: Oh really, because there's some guy playing [INSTRUMENT] in the lobby.

(41) **Sluicing:**

a. Willie Nelson is playing [SONG], but I don't know what song.

b. ? Jane can play any instrument! I saw her play a song at last week's recital [INSTRUMENT], but I don't remember (on) which instrument.

7. Conclusion

In this paper, I have used Sluicing and Novelty as diagnostics to show that in addition to indefinite and definite IAs distinguished by Fillmore (1969) and others, there is a third class, which I have dubbed 'flexible' IAs. Although they superficially appear to be ambiguous between definite and indefinite uses, I have argued that they are best treated as lexical entailments of particular predicates (following Recanati (2007)) rather than as true arguments of any sort. Under this analysis, then, there are far fewer true IAs than generally assumed, a conclusion which has significant implications for various issues in the syntax and semantics of IAs. We have taken a preliminary look at two of these issues – the semantics of definite IAs and the distribution of true IAs of all sorts – but obviously much more work remains.

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