Sluicing on free choice*

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Abstract I explore the implications of the Tense Phrase deletion operation known as *sluicing* (Ross 1969) for the semantic and pragmatic literature on the Free Choice effect (Kamp 1973, von Wright 1969). I argue that the time-honored 'I don't know which'-riders on Free Choice sentences, traditionally taken to show that the effect is pragmatic, are sensitive to scope. Careful attention to such riders suggests that these sluices do not show cancellation on Free Choice antecedents in which disjunction scopes narrower than the modal.

Keywords: free choice, sluicing, modality

1 Introduction

My purpose in this note is to explore the implications of the Tense Phrase ellipsis operation known as *sluicing* (Ross 1969) for the semantic and pragmatic literature on the so-called Free Choice effect (Kamp 1973, von Wright 1969) — or "FC" for short. FC is the phenomenon whereby a modalized sentence like

(1)   You may have coffee or tea.
       ◇ (*you have coffee or you have tea*)

is interpreted as entailing (or otherwise communicating)

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(2)   You may have coffee and you may have tea.
      ($\diamond$ *you have coffee*) $\land$ ($\diamond$ *you have tea*)

…a transition which is surprising because it is not valid in any normal modal logic. Note that, in setting out FC in this way, I assume that 'or' scopes below 'may' on the Free Choice interpretation of (1). While there is no consensus on this in the literature, it is a mainstream assumption.

Since Kamp's time, semanticists have argued that the felt entailment of (2) by (1) is cancellable — thus prima facie a pragmatic, rather than semantic, phenomenon.[1] One such argument is made by appeal to constructions like (3):

(3)   a.   You may have coffee or tea…
      b.   but I don't know which.

The discourse in (3) is clearly not felt to communicate (2).[2] The claim that both coffee and tea are permitted is, on the contrary, in clear Moorean tension with (3), since (3b) features the speaker's subsequent declaration of ignorance regarding what is permitted. Call this *the cancellation argument*. The cancellation argument appears to show that FC is pragmatic, rather than semantic.

(3b) is a sluice: a deleted Tense Phrase under the *wh*-word 'which', comparable to the *wh*-word 'who(m)' in (4) and the *wh*-phrase 'which cat' in (5):

(4)   a.   She needed to talk to someone,
      b.   but they couldn't figure out [[who(m)]$_1$ [~~she needed to talk to~~ t_T]].

(5)   a.   Lola adopted a cat at the shelter,
      b.   but I don't know [[which ~~cat~~]$_1$ [~~Lola adopted~~ t_T]].[3]

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1 It has been suggested to me that the term "cancellation" is no longer current in the linguistics literature for the effect of, e.g., (3b) on (3a). However, it has wide currency in philosophy (probably due to an influential discussion of such an example by Grice (1978: p. 45)). For more recent uses of "cancellation", see Simons 2005 and Zimmermann 2000.

2 A *locus classicus* of this observation, as well as the hypothesis that it is due to scope, is Kamp 1978: pp. 271–274.

3 In (5), why is 'cat', which is not part of the embedded TP, nonetheless elided? There is widespread agreement in the sluicing literature that the NP complement of 'which' in the fronted DP is capable of undergoing a separate process of ellipsis — NP ellipsis — when its

Moreover, (3b) is a certain *kind* of sluice: what I will call an *ignorance sluice.* Other types of sluices, such as the *indifference sluice* (under 'doesn't matter' in (6a)) and the *encouragement sluice* (under 'free to choose' in (6b)), do not appear to cancel FC.

(6)   You may have coffee or tea...

      a. It doesn't matter which.

      b. Feel free to choose which.

How does the nature of sluicing bear on the cancellation argument, resting as it does on (3b)? The position on FC I think is best supported by the literature is one I will call the No-Cancel-Narrow (or "NCN") thesis:

> (NCN): If the Free Choice interpretation of 'You may ϕ or ψ' depends on 'may' scoping over 'or', then the apparent cancellation induced by the sluice continuation 'But I don't know which' is not a pragmatic cancellation but a structural reinterpretation. This is because the sluice continuation 'I don't know which' is only compatible with 'or' scoping over 'may'. Hence, the scopally ambiguous antecedent $\ulcorner S$ may ϕ or $\psi\urcorner$ is being reinterpreted in the presence of the sluice as $\ulcorner (S$ may $\phi)$ or $(S$ may $\psi)\urcorner$.

In the context of Free Choice, the NCN has been suggested in previous work by Simons (2005) and Aloni (2007). If it is correct, then the cancellation argument does not go through.

I will sketch the case for the NCN as follows. In Section 2, I present two preliminary arguments. The first is a comparison between English disjunctive Free Choice sentences, like (1), and disjunctive Free Choice sentences in Tiwa (Tibeto-Burman), a language which appears to lexicalize disjunction scope. The second is a comparison between disjunctive ignorance sluices like (3b) and ignorance sluices licensed by indefinites in English and Italian. Neither of these preliminary arguments relies on a hypothesis about the internal structure of deleted tense phrases; rather, they show that where there is a *lexical* way to disambiguate scope, an analogue of the NCN appears to hold.

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content is recoverable from the context. Hence in (5) 'cat' is elided by a process that is distinct from sluicing, and operational in non-sluicing sentences like 'I saw Jessica's dog, and you saw Mike's.' (My reasons for nonetheless using the 'cat'-less version of (5) will become clear below.)

In Section 3, I do turn to claims about the internal structure of (3b). The NCN's reinterpretation claim depends on the hypothesis that 'may' is at-least-semantically present in the deleted material in (3b). I sketch the case for this — explaining what 'at-least-semantically present' means in the context of deletion — with the help of a naive argument from completion in Aloni 2018 and observations about parallelism of logical form between sluices and their antecedents in Chung, Ladusaw & McCloskey 1995.

Section 4 adds an argument for the overall picture — narrow-scope Free Choice 'or', wide-scope structural reinterpretation in (3b), and LF parallelism for ignorance sluices — on the basis of sluices with conjunctively interpreted antecedents. This combination of elements is situated to explain a novel observation about just *which* ignorance sluices are felt to trigger cancellation.

A survey of the literature, especially in philosophy, suggests that the NCN is not widely accepted by formal semanticists. Many authors hold that 'I don't know which'-sluices demonstrate cancellation while maintaining the mainstream assumption that disjunction scopes narrow at LF in Free-Choice triggering sentences (Kamp 1978, Zimmermann 2000, Starr 2016, Willer 2017). Others have embraced the less mainstream position that FC obtains for wide-scope 'or', but nontheless take the cancellation data to be relevant to it (Hawke & Steinert-Threlkeld 2015, 2016, Starr 2016, Willer 2017).[4] Since the NCN holds that the LF targeted by the sluice cancellation is *not* the LF that gives rise to Free Choice, both types of position are in tension with the arguments to be put forth here.

2 Free choice and the NCN: Preliminary evidence

We begin with some cross-linguistic data from a language which lexicalizes disjunction scope. Tiwa (Tibeto-Burman), has two words, *ba* and *khí*, for disjunction. Dawson (2019) reports that it is only the narrow-scope-taking *ba*

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[4] It should be noted that Hawke & Steinert-Threlkeld's papers focus on the case of *epistemic* modals, which may have special features w.r.t. cancellability: to wit, 'I don't know which'-sluices do *not* appear to cancel FC for epistemic modals. *Pace* Hawke & Steinert-Threlkeld's dynamic-semantic account, however, this cancellability profile is consistent with the NCN; see, in particular, Zimmermann (2000), who offers a broadly Gricean account of Free Choice for wide-scope *epistemic* LFs, and notes that the "modal reduction principle" key to deriving the inference is plausible for epistemic modalities only (*op. cit.*, 284). Hence if Zimmermann's account works, *and* the NCN correctly characterizes the landscape of Free Choice with regard to *non*-epistemic modalities, there is a threat that Hawke & Steinert-Threlkeld's dynamic-semantic account is explanatorily redundant.

and not the wide-scope-taking *khí* which gives rise to FC. Dawson explicitly rules out a semantically very similar rider to (3b) — viz., 'we can't remember which one it is' — on *ba* rather than *khí*. I report Dawson's data below.

(7)   Saldi can drink tea or coffee.

    a.   Saldi [sa **khí** coffee] -go   nung-a   phon-o
          Saldi tea or   coffee -ACC drink-INF can-NEUT
          ✓ Saldi is allowed to drink tea, but not coffee, (but we can't remember which one it is)
          ✗ Saldi is allowed to drink tea and she's allowed to drink coffee; it's her choice which.

    b.   Saldi [sa **ba** coffee] -go   nung-a   phon-o
          Saldi tea or coffee -ACC drink-INF can-NEUT
          ✗ Saldi is allowed to drink tea, but not coffee, (but we can't remember which one it is)
          ✓ Saldi is allowed to drink tea and she's allowed to drink coffee; it's her choice which.
          (from Dawson 2019: p. 5, ex. 11)

Unlike Tiwa, English does not lexicalize the difference between wide- and narrow-scope disjunction. Hence an English sentence like

(8)   Saldi may have coffee or tea.

    a.   ◇*(Saldi has coffee or Saldi has tea)*
    b.   ◇*(Saldi has coffee) or* ◇*(Saldi has tea)*

is ambiguous as between a narrow-scope-for-disjunction reading, (8a), and a wide-scope-for-disjunction reading, (8b). Note that if (8) receives the interpretation (8b), then even though the modal 'may' appears only once at surface form, the modal diamond, ◇, appears twice — on either side of the disjunction — at LF.

According to the cancellation argument, the FC pattern ◇*(Saldi has coffee or Saldi has tea)* ⊨ ◇*(Saldi has coffee)* ∧ ◇*(Saldi has tea)* is not semantic, because it can be cancelled by ignorance continuations like 'I don't know which'. But Dawson's data suggests that it is only (8b) that accepts such a continuation, while it is (8a) that gives rise to Free Choice in the first place. If this is correct, and the analogy between English and Tiwa holds, the cancellation argument misses its target. The interpreted LF of (3) (repeated):

(3)   a. You may have coffee or tea…

        b. but I don't know which.

is the analogue of (7a) with *khí*:

(9)   a. *◇(you have coffee) or ◇(you have tea)*

        b. but I don't know which.

The interpreted LF of (3a), (9a), is thus of a kind with sluices where the *only* significant scope-taking element is disjunction, as in

(10)   a. It's raining or it's snowing…

         b. I don't know which.

    The next argument relies on Free Choice sentences with indefinites. In combination with an ignorance sluice, these produce a pattern parallel to (3):

(11)   a. You may sit in a chair.

         b. (But) I don't know which.

When the 'a' in (11a) is replaced by the scope-sensitive English 'any' — indicating the indefinite takes narrow scope with respect to the modal — the discourse becomes noticeably degraded.

(12)   a. You may sit in any chair.

         b. ? (But) I don't know which.

This is noted, for example, in the widely-cited analysis of indefinite sluicing by Chung, Ladusaw, and McCloskey (1995; henceforth "CLM"). The suggestive *a/any* contrast in (11)-(12) recurs with scope-sensitive pronominal expressions in other languages, such as the Italian *qualsiasi* treated at length in Chierchia 2006 (I use Chierchia's suggested translation "whatever" for *qualsiasi* (op. cit., p. 540)):

(13)   a. ∅   Puoi sederti in una sedia.
           ∅.2SG may sit   in a   chair.
           You may sit in a chair.

         b. Ma ∅   non so   quale.
           but ∅.1SG not know.1SG which.
           but I don't know which.

(14)   a.   ∅   Puoi sederti in **qualsiasi** sedia.
            ∅.2SG may sit   in **whatever** chair.
            You may sit in whatever chair.

       b.   ? Ma ∅   non so   quale.
            ? but ∅.1SG not know.1SG which.
            ? but I don't know which.

Pairs like (11)-(12) and (13)-(14) motivate a single theoretical commitment, according to which the combination (narrow-scope indefinite + ignorance sluice) puts conflicting constraints on the scopal interpretation of ∃ and ◇ in discourses like (12) and (14). This commitment can be framed in two ways: the first, SCOPE FACT (SF), is couched just in terms of the FC effect.

> SCOPE FACT (SF). Indefinite Free Choice effects are most apparent in sentences where natural language indefinites scope under (rather than over) a modal diamond.

The second, IGNORANCE SLUICE OBSERVATION (ISO), highlights the consequences for the interpretation of 'but I don't know which':

> IGNORANCE SLUICE OBSERVATION (ISO). Narrow-scope-taking indefinite FC sentences resist ignorance sluice cancellation.

If this is correct, then given the assumption that what logicians might call "existentials" — that is, disjunction and indefinites — pattern alike, (11)-(14) constitute a second preliminary argument that the disjunction in (3) takes wide, rather than narrow, scope.

It should be noted that this second argument-by-analogy assumes — following much, but not all, of the literature on 'any' in the wake of Kadmon & Landman 1993 — that the so-called FCI 'any' (simply put, the *any* that gives rise to a Free Choice reading of (12a)) has the same narrow-scope-taking profile as the negative polarity 'any' in, for example, 'She didn't take any coffee'.[5]

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5 Indeed, given a view like CLM's, the oddity of the continuation (12b) provides evidence for this. Hence the point in (12) is parallel to the oddity of

(15)   a.   She didn't take any of the books.
       b.   ? (But) I don't know which.

See Chung, Ladusaw & McCloskey 1995: p. 255.

However this claim has not gone unchallenged in the literature: for the case that FCI 'any', unlike NPI 'any', can outscope the modal operator, see Sæbø 2004 and Dayal 2004.

3 Sluicing and structural interpretation

In this section I argue 'may' is at-least-semantically present in the sluice (3b). This claim is important for establishing the NCN's thesis about the sluice's antecedent, the Free Choice sentence (3a).

A pair of sentences from Aloni 2018, which feature continuations more explicit than those under full sluicing, illustrate the importance of the claim. Aloni considers the pair (16)-(17):

(16)   You may either eat the cake or the ice cream, I don't know which you **may eat**.

(17)   You may either eat the cake or the ice cream, I don't care which you **eat**.
       (from Aloni 2018: p. 16, emphasis added)

An example from Meyer 2016 makes a comparable suggestion. Meyer considers the ignorance sluice (18b), to which she adds an explicit continuation with 'is allowed to':

(18)   a.   John may eat an apple or a pear....
       b.   I don't know which.
            = I don't know which one he is **allowed to eat.**
            (Meyer 2016 p. 9; "=" notation in the original)

The 'don't know' continuations in (16) and (18), which appear to cancel the free choice effect, both feature a modal construction — 'may'/'is allowed to' — below the negated attitude verb. By contrast, the 'don't care' continuation in (17) does *not* feature the modal 'may'. This is important because the speaker seems to be saying, in the first case, that she doesn't know which of cake or ice cream the addressee *may* eat — her ignorance, in other words, concerns modality — but seems to be saying, in the second case, that she doesn't care which of cake or ice cream the addressee *does* eat — her indifference, in other words, concerns the actual world. The fact that 'which' takes different complements in the different sentences makes explicit that disjunction is interpreted above the world-shifting modal in (16) and (18), but below it in (17).

The NCN seeks to broaden this contrast between ignorance and indifference sluices to free choice antecedents like (19), where there is no verb like 'eat' in common between the two disjuncts:

(19)   You may [[drink tea] or [eat cake]]…

      a. I don't know which.

      b. I don't care which.

These antecedents preclude continuations like Aloni's 'don't know which you may *eat*' and Meyer's 'don't know which one he is allowed to *eat*'. Instead, we find only disjunctive sluices. (19a) is, of course, an ignorance sluice on a Free Choice antecedent, just like (3b), and so falls under the scope of the pattern sketched by Aloni, Dawson, and Meyer.

The claim that 'may' is at-least-semantically present in ignorance sluices on free choice antecedents is the claim that an explicit version of (19a)— if such a thing were grammatically possible—would reveal an occurrence of the permission modal under 'don't know', just as Aloni's (16) features 'may' and Meyer's (18b) features 'is allowed to'. The corollary claim about FC-compatible and FC-encouraging sluices, like (6a)-(6b) and (19b), is that the explicit version of *these* sentences would reveal the *absence* of a permission modal under 'don't care' and 'free to choose', just as Aloni's (17) does.

3.1 Structure and isomorphy

To begin making the argument that 'may' is at-least-semantically present in (3b) and (19a), we return to look at (5) (repeated as (20), below) in more detail. In (20b), the *wh*-word *which* occurs in isolation in a question-embedding environment (viz., under the attitude verb 'know'). Sluices like (20b) are clearly related to the full interrogative in (20c):
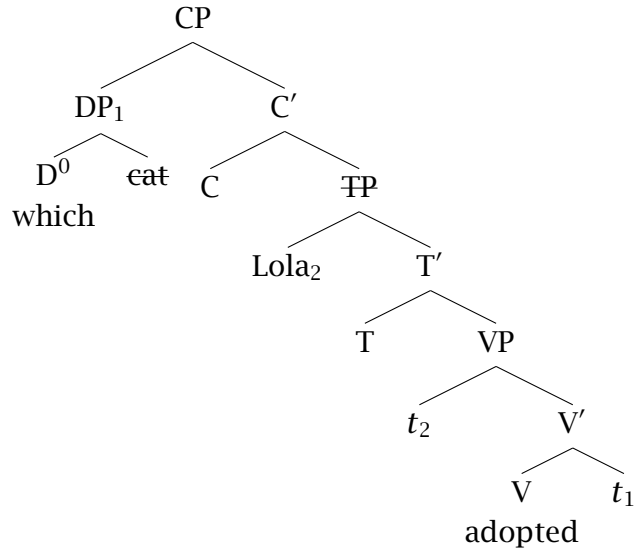
(20)   a. Lola adopted a cat at the shelter…

      b. but I don't know which.

      c. but I don't know [[which cat]$_1$ [Lola adopted t_1]]

in which the embedded question under 'know' is overt. This is elided in the sluice:

(21)   but I don't know [[which ~~cat~~]$_1$ [~~Lola adopted t_1~~]]

Accepting that NP ellipsis is separately responsible for the deletion of 'cat', the standard analysis of (21) is (22):
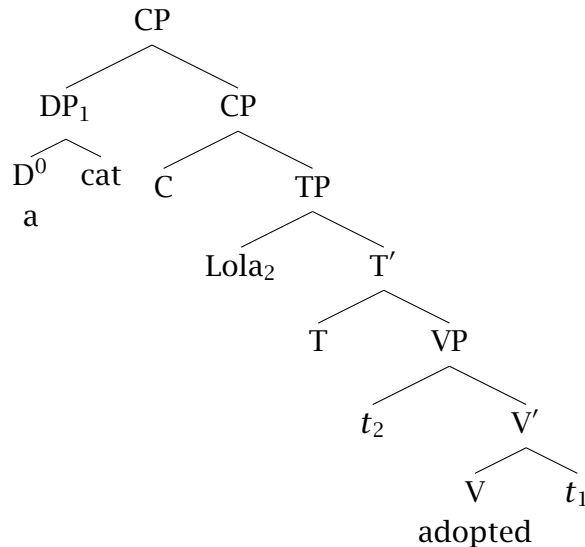
(22) don't know…

This tree shows the hallmark of *wh*-movement: a *wh*-element which originates as a complement of the verb in the sluice's antecedent — viz., the verb 'adopted' — is raised to spec-CP, leaving behind a coindexed trace.

The sluice's antecedent — (20a) — contains a *correlate* (here, the indefinite *a cat*) which corresponds to the *wh*-phrase in (22):

(23)

On the assumption that *a cat* also undergoes quantifier movement to a similar position, the structure of the antecedent TP in (23) matches the struc-

ture of (22). Ellipsis — that is, non-pronunciation of the TP — is held to be licensed by this match, or *isomorphism*, of material. The "dangling" *wh*-phrase, which survives deletion where a full constituent question would otherwise be expected, is sometimes referred to as the *remnant*.

It is widely, though not universally, accepted that ellipsis is the non-pronunciation of fully realized syntactic structure (Ross 1969, Merchant 2001). To see why, consider Ross's argument that it would be wrong for syntactic as well as semantic reasons to take a parsimonious view of the object of the verb 'knows' in a sentence like (4), on which the direct object of the attitude verb is simply the *wh*-phrase. Ross argued for this by showing, for example, that *wh*-elements in sluicing show variable case inflection:

(24) Er will   jemandem   schmeicheln, aber sie   wissen nicht
      He wants someone.DAT flatter.INF,   but   they know   not
      wem   / *wen.
      whom.DAT / *who.ACC.

      He wants to flatter somebody, but they don't know whom.
      (Ross 1969: p. 253)

For English speakers sensitive to the *who-whom* alteration, the same point can be made by (25)-(27):

(25)   John met someone, but I don't know whom/*who.

(26)   Someone met John, but I don't know who/*whom.

(27)   That's someone's prize possession, but I don't know whose/*who.

For philosophers and logicians primarily interested in discourses like (3), the ramifications of the argument from case-marking are worth emphasizing. Without dative case-marking on the *wh*-element in the German (24), for example, the sluice is not grammatical. But case marking is a local phenomenon, and the verb *schmeicheln* in (24) appears *explicitly* only in the antecedent clause — too far away to assign case to the object of *wissen* ('know'). Ross drew the conclusion that there is a silent token of *schmeicheln*, deleted under isomorphy, which assigns case to the remnant.[6]

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6 In particular, the view Ross took from examples like (24) is now known as a "move-and-*then*-delete" view: *wen* is base-generated next to the verb *schmeicheln*, receives its dative case from the verb, and only then is pushed up by *wh*-movement to a position above the tense phrase. There, it survives deletion, while the second token of *schmeicheln* does not.

Because of phenomena like case-matching, few contemporary views hold that semantics or pragmatics alone can account for the acceptability and interpretation of sluices.

On the other hand, Ross's view, which requires not only fully realized syntax to be in the ellipsis site, but an *exact* match between this material and the syntax of the antecedent, has been challenged on the basis of other grammatical instances of sluicing where syntactic isomorphy does not appear to hold.[7] The following well-known example comes from Merchant 2001: in the antecedent, the verb is in the gerund form, but in any grammatical explicit continuation of the sentence, the verb must be in the infinitive.

(29)   a.   [Decorating for the holidays is easy]…
       b.   if you know how.
       c.   * if you know how [**decorating** for the holidays].
       d.   if you know how [**to decorate** for the holidays].
            (Merchant 2001: p. 22, ex. 30)

The right generalization seems to be that *some* purely syntactic features (like case) are required to match between ellipsis site and antecedent for deletion to be licensed. For others — like whether the verb is in the infinitive or gerund form — exact matching is not required. This observation makes explicit continuations less of a guide to deleted structure than they would be under an exact match view.

Importantly for our purposes, disjunction seems to present a clear stumbling block for exact matching: the key datum is that *there is no syntactically isomorphic pre-sluice structure* for disjunctive antecedents (Barros 2014, AnderBois 2010). To see the point, contrast the ungrammatical (30) and (32) with the grammatical (31) and (33):

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(28)   Er will   jemandem   schmeicheln, aber sie   wissen nicht [[wem$_1$]
       He wants someone.DAT flatter.INF,   but they know   not   [[whom$_1$.DAT]
       [er t_1 schmeicheln will]].
       [he t_1 flatter.INF wants]].
       He wants to flatter somebody, but they don't know whom.

7 Again, Ross's view should be taken as positing an exact match only after *wh*-movement has taken place.

(30) a. It's raining or it's snowing…

    b. * I don't know which [[it's raining] or [it's snowing]].

(31) a. It's raining or it's snowing…

    b. I don't know which.

(32) a. Either there's no bathroom here or it's well-hidden …

    b. * I don't know which [[there's no bathroom] or [it's well-hidden]].

(33) a. Either there's no bathroom here or it's well-hidden …

    b. I don't know which.

This is why the NCN's generalization of the pattern in Aloni's (16) was stated above in such cautious terms — in terms, that is, of what explicit versions of e.g. (19a) would reveal *if* they were made explicit. Because it is not generally the case that a syntactically explicit, isomorphic pre-sluice structure can be offered for disjunctive sluices, (19a) cannot be given an uncontroversial "struck-through" form, as (21) can be given for (20b). Nonetheless, we can step back from purely grammatical features and ask about the *logical form* of (3b) and (19a), showing that there is evidence for the presence of 'may' at LF in each. This we do in the next subsection.

3.2   Logical form

As emphasized by Chung, Ladusaw & McCloskey (1995), when a sentence with multiple quantifiers is followed up by an indefinite sluice, the licensing indefinite must be interpreted — sometimes, re-interpreted — as having wide semantic scope with respect to the other quantifiers. CLM make the argument on the basis of examples like (34):

(34) a. She always reads a book at dinnertime…
      we can't figure out which one.

    b. Each student wrote a paper on a Mayan language…
      but I don't remember which one.
      (Chung, Ladusaw & McCloskey 1995: p. 255)

If the isomorphy conditions for ellipsis were purely syntactic — "blind to semantics", in the helpful phrasing of Jacobson (2018) — then surface-ambiguous strings like

(35)   a.   She always reads a book at dinnertime
          (Always $<$ $\exists$) / ($\exists$ $<$ Always)

       b.   Each student wrote a paper on a Mayan language
          ($\forall$ $<$ $\exists$) / ($\exists$ $<$ $\forall$)

would be serviceable antecedents to sluicing regardless of which LF interpretation — one which assigns wide or narrow scope to 'a book'/'a Mayan language' — the string ultimately receives. CLM's point is that this is simply not the case. Their conclusion was to recast isomorphy: sluicing, they hold, requires the copying of a *semantic* object into the ellipsis site, rather than the reproduction of a *syntactic copy* of the relevant Tense Phrase.[8]

For assessing the full case for the NCN, it is worth being precise about the limits of CLM's claim. While it is common to say that sluices on indefinites require the licensing operator to take *widest* LF-scope in the antecedent, this is not quite right, because multiple landing sites for both the indefinite and the *wh*-phrase may be available. CLM's thesis merely requires that the two are interpreted in tandem (*op. cit.*, 256): the licensing indefinite must be interpreted as having wide scope *with respect to the logical form under the remnant*.

An example will be helpful in making the point. Suppose that, after hearing (36):

(36)   Reginald wants to marry a millionaire.
        (want $<$ $\exists$) / ($\exists$ $<$ want)

we are unsure whether a de re or a de dicto desire is being ascribed to Reginald. Two different sluices — the ignorance sluice (37) and the indifference sluice (38) — on an antecedent with the surface form of (36) can push scope interpretation in one way or the other.

(37)   Reginald wants to marry a millionaire…guess which.
       (De Re desire)

(38)   Reginald wants to marry a millionaire…he doesn't care which.
       (De Dicto desire)

In (39c) and (40c), I sketch the "struck-through" completions of these matching reinterpretations of (36):

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8 The view is now known as "LF copying".

(39)   a.   Reginald wants to marry a millionaire …

　　　 b.   Guess which.

　　　 c.   *Sluice:* Guess [which ~~millionaire~~]$_1$ [~~Reginald wants PRO to marry t_1~~]
　　　　　 (Re)interpreted antecedent: [[$\exists x$ millionaire x]$_1$ Reginald wants PRO
　　　　　 to marry t_1]　　**Indefinite has wide scope in the antecedent**

(40)   a.   Reginald wants to marry a millionaire …

　　　 b.   He doesn't care which.

　　　 c.   *Sluice:* He doesn't care [which ~~millionaire~~]$_1$ [~~PRO to marry t_1~~]
　　　　　 (Re)interpreted antecedent: [Reginald wants [[$\exists x$ millionaire x]$_1$
　　　　　 PRO to marry t_1]]　　**Indefinite has narrow scope in the antecedent**

In the contrast between (40c) and (39c), we see CLM's qualified wide-scope
thesis at work. (40) is not interpreted as a statement of Reginald's indiffer-
ence about which millionaire he *wants* to marry.[9] Hence, the existential cor-
relate ⌜$\exists x$ millionaire x⌝ is not (re-)interpreted as taking *widest* scope in the
antecedent. It is, however, (re-)interpreted as taking scope *over the material
that is recycled in the sluice* (which is subsentential and does not include the
scope-bearing operator 'want'). To put the point more neutrally — in a way
that does not literally read the struck-through material in (39c) and (40c) as
syntactically present — the *meaning* of the deleted tense phrases are inter-
preted *as if* the *wh*-phrase took scope parallel to the interpreted scope of
the existential.[10] In each case, structural disambiguation of the antecedent
is being driven by the meaning of the verb ('guess' vs. '(don't) care'). The ab-
sence of 'want' under the existential in (40c), as well as its presence under
the existential in (39c), is analogous to the absence of 'may' in Aloni's (17),
and its presence in her (16).

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9 While not impossible, this would be a bizarre, second-order mental state to be in. For exam-
ple: Reginald can swallow one of n pills, each of which will induce in him a different de re
desire to marry millionaire x_i for $1 \leq i \leq n$. If, even though Reginald wants to swallow a
pill — since he cares to be in a de re state of wanting to marry some particular millionaire —
he is indifferent to which such state he cares to be in, and hence which such pill he will take,
then he might be in the state corresponding to ⌜$\exists x$ millionaire x⌝ taking widest scope in
the antecedent of (40).

10 The careful reader will note that like (30b) and (32b), (40c) in fact *cannot* be read grammati-
cally as written without the strikethrough: it would be

(40)   d.   *Sluice:* * He doesn't care which millionaire to marry.

Hence (40c) provides another apparent counterexample to the "exact syntactic match" con-
dition on sluicing. Thanks here to Gary Thoms.

3.3 Free choice antecedents

We now return to Free Choice antecedents, including the contrasting sluices (3b) and (41b):

(3)   a. You may have coffee or tea …
      b. I don't know which.

(41) a. You may have coffee or tea …
      b. I don't care which.

What we wanted to investigate was whether 'may' is present in these sluices; a clue was provided by the observation that while the ignorance sluice (3b) apparently cancels the free choice effect, the indifference sluice (41b) does not. My suggestion is that we apply CLM's hypothesis about parallel scope. Recall the contrast between (39) and (40): these sluices trigger incompatible reinterpretations of their shared antecedent. Moreover, while a sluice-licensing existential need not take *widest* scope in the antecedent to be interpretable, it must take wide scope *with respect to the the material present in the sluice.* We can apply the same pattern to (3b) and (41b). Disjunction will take wide scope with respect to the modal just in case the "material" — whether syntactic or merely interpreted — beneath 'which' in the sluice (41b) includes the modal 'may'. In the style of (40), the deleted material in (41b) is:

(42)   I don't care [which ~~one~~]$_1$ [~~you~~ **have** t_T]
       (FC-compatible sluice)

while, in the style of (39), the deleted material in (3b) is:

(43)   I don't know [which ~~one~~]$_1$ [~~you~~ **may have** t_T]
       (FC-incompatible sluice)

The pattern we find again parallels the contrast between Aloni's (16)-(17). In (42), the speaker expresses *indifference* concerning *worldly* facts. But in (43), the speaker expresses *ignorance* concerning *modal* facts. The latter, and not the former, is in Moorean tension with a free choice reading of the antecedent. This offers an explanation for why the latter, but not the former, would be parsed in a way which does not give rise to Free Choice in the first place.

As noted in Section 2, the NCN extends this analysis to the general case, including Free Choice antecedents like (19) (repeated):

(19)   You may [[drink tea] or [eat cake]]…

      a.   I don't know which.

      b.   I don't care which.

where there is no verb like 'take' or 'eat' in common between the disjuncts. In keeping with my strictures for these examples, I have not provided a "struck-through" parse for the sluices (19a) and (19b). Because an analogy with explicit form is bound to fail, as in (30b) and (32b), the content of the relevant completion is too controversial. Nonetheless, the moral from (39)-(40) and (42)-(43) generalizes. Whatever the copied material in these sluices is — and whether the right interpretation of it is as a fully realized syntactic object, a logical form, or something with the features of both — there is good reason to think that (19a) includes 'may' at LF, while (19b) does not. By CLM's parallel LF scope generalization, 'or' is thus interpreted as scoping *over* the modal when (19) is followed by the ignorance sluice (19a), and under it when (19) is followed by the indifference sluice (19b).

4   Conjunctive sluices

In this section I present some additional data, from non-existential sluice constructions, for the picture of Free Choice sketched above. 'else'-sluices, such as (44), can take conjunctions as antecedents (Merchant 2001: Section 4.2.2):

(44)   a.   William **and** Tom came to the bar…

      b.   But I don't know who else/*who.

While it would be Moore-paradoxical for a speaker to say that William came to the bar *and* that Tom came to the bar *and* that she (the speaker) does not know who came to the bar, the addition of 'else' renders (44) semantically and pragmatically acceptable.

    The additional datum I want to consider is that Free Choice sentences license *both* 'else'- and 'else'-free ignorance sluices.

(45)   You may have coffee or tea, but I don't know which.

(46)   You may have coffee or tea, and I don't know what else.

Strikingly, although it is an ignorance sluice, the sluice in (46) does not cancel Free Choice; in fact, like the indifference and encouragement sluices in (6a)

and (6b), it appears to *presuppose* choice. The question is whether the overall picture of FC sluices sketched above — narrow-scope Free Choice 'or', wide-scope structural reinterpretation in (3b), and LF parallelism — can shed light on this.

It seems that it can. The key is that the addition of 'else' ameliorates, as it does in (44), the threat of Moorean tension with a second available parse of the Free Choice antecedent. Hence that second interpretation again becomes available when 'else' is added.

For a comparison, consider (48)-(49), which share a scopally ambiguous antecedent ('Pontius Pilate refused to pardon Christ or Barabbas') with disjunction and negation. Like free choice antecedents, this antecedent supports both 'else'- and 'else'-free ignorance sluices.

(47)   Pontius Pilate refused to pardon Christ or Barabbas.
       $(\neg < \exists) / (\exists < \neg)$

(48)   Pontius Pilate refused to pardon Christ or Barabbas; I don't remember which.

(49)   Pontius Pilate refused to pardon Christ or Barabbas, and I don't know who <u>else</u>.[11]

While both types of ignorance sluice are supported, however, the 'else'-sluice, (49), favors a different parse of the antecedent than the 'else'-free (48) favors. In particular, it favors the interpretation $\neg(c \; or \; b) \equiv \neg c \wedge \neg b$, on which (49) and the *conjunctive* antecedent in (50) are equivalent:

(50)   Pontius Pilate refused to pardon Christ **and** Pontius Pilate refused to pardon Barabbas, and I don't know who else [~~Pontius Pilate refused to pardon t~~].

As in the case of (19), the syntactic structure of (44) and (50) is controversial. Since 'and' does not undergo quantifier movement, it is mysterious how there would come to be a trace in the struck-through material in (50) for the *wh*-element 'who else' to bind.

Nonetheless, the interpretive facts are clear: even though *both* the 'else'-sluice (49) and the 'else'-free (48) are *ignorance* sluices, they differ with respect to the structural interpretations they favor for their shared antecedent. The 'else'-sluice (49) favors the parse $(\neg(\phi \; or \; \psi))$, because this

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11 It can be helpful to add a pitch accent on 'or' for (49). Thanks here to Chris Barker.

is *semantically* equivalent to the conjunction $(\neg\phi \wedge \neg\psi)$. By contrast, the 'else'-free sluice (48) favors the parse $(\neg\phi \; or \; \neg\psi)$, in which disjunction takes wide scope. Returning to free choice: on the picture offered here, the 'else'-sluice (46), unlike the 'else'-free sluice (45), favors the parse $(\diamond(\phi \; or \; \psi))$ because this is the parse which semantically entails — via free choice — the conjunction $(\diamond\phi \wedge \diamond\psi)$. This is why the subsequent sluice can presuppose, rather than be felt to cancel, FC.

$\neg(\phi \; or \; \phi)$ $\vDash_{\text{DeMorgan}} \neg\phi \wedge \neg\psi$	$\neg\phi \; or \; \neg\psi$	$\diamond(\phi \; or \; \psi)$ $\vDash_{\text{Free Choice}} \diamond\phi \wedge \diamond\psi$	$\diamond\phi \; or \; \diamond\psi$
'or' narrow: conjunctive interpretation goes with 'else'-ignorance sluice (49)	'or' wide: disjunctive interpretation goes with 'else'-free ignorance sluice (48)	'or' narrow: conjunctive interpretation goes with 'else' ignorance sluice (46)	'or' wide: disjunctive interpretation goes with 'else'-free ignorance sluice (45)

Table 1   'else'-sluice data.

The data from (45)-(49), summarized in Table 1, add to our understanding of the conditions under which the apparent cancellation effect obtains for FC. It was already widely known that not *all* sluices on Free Choice antecedents give rise to apparent cancellation; only ignorance ones do. To this, we can add that not even *all ignorance* sluices on FC antecedents give rise to apparent cancellation. Only *'else'-free* ignorance sluices like (3b) do. The view from the NCN suggests that this relies on the following delicate fact: in disjunctive ignorance sluices without 'else', disjunction is naturally interpreted as the locus of ignorance — therefore, disjunction scopes wide in the antecedents of such sluices. Without anything like 'else' to change the relevant pragmatic context, this precludes structural interpretations of the antecedent which are in Moorean tension with such ignorance.

5 Conclusion

I've explored the implications of Tense Phrase ellipsis — that is, sluicing — for the Free Choice effect. In particular, I argued that the time-honored 'I don't know which'-riders on Free Choice sentences, traditionally taken to confine the effect to the farther side of the semantics-pragmatics divide, do not in fact show any such thing. Indeed, the view from sluicing suggests that, when

the scope of 'or' is narrower than the scope of the modal, Free Choice is not cancellable, and hence patterns semantically with indefinite "free choice items" (FCIs) like the English *any*.

Beyond the lexical considerations advanced in Section 2, I made the argument by appealing to two highlights from the indefinite-focused sluicing literature. The first, following Ross and Merchant, was simply that sluicing *is* constrained by form. The second, following CLM, drilled down into the (at least partially) semantic nature of that constraint: to wit, that the licensing operator outscopes anything semantically present in the sluice. Finally, I discussed 'else'-sluices and their ability to target conjunctive interpretations of antecedents featuring 'or'.

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