

## Copy theory in *wh*-in-situ languages: Sluicing in Hindi-Urdu

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### ABSTRACT

Hindi-Urdu is known to be one of the *wh*-in-situ languages exhibiting a sluicing-like construction. Although many have proposed alternative accounts of such strings in *wh*-in-situ languages (e.g. Kizu 1997, Toosarvandani 2009, Gribanova 2011, Hankamer 2010), I argue that apparent sluicing in Hindi-Urdu can be analyzed in a manner consistent with the notion that the syntax of a sluice is the syntax of a regular *wh*-question (Ross 1969, Merchant 2001). Assuming the copy theory of movement (Chomsky & Lasnik 1993, Chomsky 1993, i.a.), we can understand sluicing in Hindi-Urdu as an exceptional instance of the pronunciation of the top copy in a *wh*-chain, correctly predicting that Hindi-Urdu sluiced structures have properties similar to genuine sluices in languages like English. This article pursues a continued refinement in the implementation of copy theory in *wh*-in-situ languages and importantly, contributes to the current line of work investigating intra-linguistic variation among *wh*-in-situ languages and the ways in which constellations of properties of *wh*-dependencies and ellipsis processes in these languages are best understood.

### 1 Introduction

As has been widely reported in the literature, Hindi-Urdu, traditionally understood to be a *wh*-in-situ language, features a construction that appears to be sluicing:

- (1) mãĩ=ne yahãã kisi=ko dekh-aa  
 1SG=ERG here someone.OBL=ACC see-PFV.M.SG  
 par mujhe nahĩ pataa kis=ko.  
 but 1SG.DAT not know who.OBL=ACC  
 ‘I saw someone there, but I don’t know who.’

Many have suggested that apparent sluicing in *wh*-in-situ languages challenges the influential approach to sluicing which posits that the syntax of a sluice is the syntax of an ordinary *wh*-question (Ross 1969, Merchant 2001), and have proposed alternative strategies for deriving the sluicing-like string. One family of accounts suggests that what looks like sluicing in these languages is in fact an instance of a reduced copular clause (RCC) (Kizu 1997, 2000, Merchant 1998, Gribanova 2011, i.a.). In these accounts the apparent sluice should exhibit properties similar to that of copular clauses or clefts. Another family of accounts claims that the movement feeding the deletion operation in otherwise *wh*-in-situ languages is somehow exceptional — that it is not ordinary *wh*-question formation in the language. For instance, Toosarvandani (2009) and Malhotra (2009) suggest that focus fronting to a dedicated focus projection located between CP and TP is the displacement feeding sluicing-like ellipsis in Farsi and Hindi-Urdu respectively. Manetta (2011) and Bhattacharya & Simpson (2012)

similarly claim that the movement of the *wh*-remnant is exceptional, but they posit that it targets the CP domain. Finally, in earlier work, Manetta (2006) proposed that what appears to be sluicing in Hindi-Urdu might be the elision of a constituent smaller than a TP (vP-ellipsis).

In this article I show that none of the approaches above adequately account for the properties of the apparent sluicing construction in Hindi-Urdu. I propose instead that we can maintain Merchant's (2001) core understanding of sluicing — that it is a non-pronunciation of a clause-sized constituent following ordinary *wh*-movement — if we adopt a novel account of sluicing in Hindi-Urdu. The account I develop here assumes the copy theory of movement (Chomsky & Lasnik 1993, Chomsky 1993, i.a.) and posits that so-called “*wh*-in-situ” in Hindi-Urdu is in fact a preference for pronunciation of the lower copy in a *wh*-movement chain (Groat & O'Neil 1996, Reintges, Lesourd, & Chung 2006, Reintges 2007; see also Bošković & Nunes 2007, Bošković 2011). Sluicing is then an exceptional instance of the pronunciation of the higher copy in the *wh*-chain (located in Spec, CP) under pressure from P-RECOVERABILITY, which requires that a member of a chain associated with phonetic content be pronounced (Landau 2006). The schematic in (2) illustrates the derivation of a regular *wh*-question and a sluice in Hindi-Urdu, with strikethrough representing non-pronunciation.

- (2) I saw someone there, but I don't know. . .
- a. . . ~~kis=ko~~ māī=ne yahāā kis=ko dekh-aa. **Regular *wh***
- b. . . kis=ko            ~~māī=ne~~    yahāā    ~~kis=ko~~            ~~dekh-aa~~.
- . . . who.OBL=ACC 1SG=ERG here    who.OBL=ACC see-PFV.M.SG
- ‘. . .who (I saw there)’. **Sluice**

Section 2 of this article presents detailed evidence that apparent sluicing in Hindi-Urdu is in fact the elision of a clause-sized constituent and has the characteristics of genuine sluicing in *wh*-movement languages. In section 3, I argue that we might best understand regular *wh*-in-situ constructions in Hindi-Urdu as an instance of pronunciation of the lower copy in a *wh*-chain. Section 4 details the analysis of sluicing in Hindi-Urdu as the exceptional pronunciation of the top copy in a *wh*-chain (what I will call top-copy sluicing here). In section 5, I conclude by exploring the intra-linguistic variation in the constellation of properties referred to as “*wh*-in-situ” and the properties of apparent sluicing structures.

This account seeks to extend the explanatory reach of copy theory in two ways. First, data from Hindi-Urdu supports the claim made elsewhere (Reintges, Lesourd, & Chung 2006, Reintges 2007) that there are apparent *wh*-in-situ languages in which *wh*-dependencies exhibit similarities to overt movement chains, and that these languages can be analyzed as exhibiting a preference for lower-copy pronunciation. Second, the approach to sluicing pursued here is harmonious with a line of work suggesting that various constraints on phonetic output might force the overt realization of a copy other than the preferred copy under certain circumstances (Bošković & Nunes 2007, Bošković 2011).

Finally, and perhaps most importantly, this account is part of the larger effort to advance a more nuanced approach to the phenomenon imprecisely labeled “*wh*-in-situ” and to pursue a better understanding of intra-linguistic variation in the properties of *wh*-dependencies in *wh*-in-situ languages.

## 2 Sluicing in Hindi-Urdu

The empirical goals of this section are twofold. First, I present new data from Hindi-Urdu arguing against several existing approaches to sluicing-like structures in *wh*-in-situ languages. Second, I bring together a range of facts concerning apparent sluicing in Hindi-Urdu that have been reported piecemeal elsewhere in the literature (Manetta 2006, 2010, Malhotra 2009, Simpson & Bhattacharya 2012). By pulling this body of evidence together, I seek to develop an analysis that accounts for all of the properties of the apparent sluicing construction discussed here.

### 2.1 Characteristics of putative Hindi-Urdu sluicing structures

There is significant evidence that apparent sluicing in Hindi-Urdu has the properties of sluices from more familiar languages. Displaced *wh*-phrases in Hindi-Urdu must be marked with the case



It is widely assumed by researchers working on the language that the auxiliary *ho* is the overt realization of finite T (Mahajan 1990, Bhatt 2005, Kumar 2006; see also the argumentation in Davison 2002, Kush 2011).<sup>1</sup> If indeed apparent sluicing structures were the elision of a constituent smaller than TP in Hindi-Urdu, we would expect the auxiliary to grammatically appear in (6) above. Further, as is exemplified below in (15)–(16), Hindi-Urdu has no independent process of copula drop. Therefore the elided constituent in (6) is likely to be at least a TP.

The second type of evidence that the sluiced constituent is indeed as large as a TP comes from sentential negation in sluicing structures in Hindi-Urdu. As is clear from (7), sentential negation is interpreted to be within the ellipsis site. Further, negation cannot remain alongside the remnant in a sluicing structure, as in (8)–(9).

- (7) a. arjun kisi=se is daftar=mē nahī mil sak-aa, par mujhe  
 Arjun.M someone=with this office.M.SG=in NEG meet can-PRF.M.SG but 1SG.DAT  
 nahī pataa kis=ko.<sup>2</sup>  
 NEG know who.OBL=ACC  
 ‘Arjun couldn’t meet with someone in that office, but I don’t know who.’  
 = b. Arjun couldn’t meet with someone in that office, but I don’t know who *Arjun couldn’t meet with in that office.*  
 ≠ c. Arjun couldn’t meet with someone in that office, but I don’t know who *Arjun could meet with in that office.*
- (8) ?\*arjun kisi=se is daftar=mē nahī mil sak-aa, par mujhe  
 Arjun.M someone.OBL=with this office.M.SG=in NEG meet can-PRF.M.SG but 1SG.DAT  
 nahī pataa kis=ko nahī.  
 NEG know who.OBL=ACC NEG
- (9) A: koi arjun=se nahī mil sak-aa.  
 someone Arjun.M=with NEG meet can-PRF.M.SG  
 ‘Someone couldn’t meet Arjun.’  
 B: kaun? / ?\*kaun nahī?  
 who / who NEG  
 ‘Who?’

Sentential negation must either immediately precede or follow the main verb in Hindi-Urdu in linear order. Kumar (2006) argues that negation heads a projection beneath TP, and that Neg-V order is derived via a V-to-T movement that picks up Neg along the way, while in V-Neg order the V remains within VP (Mahajan 1990 and Dwivedi 1991 argue for a similar basic syntactic position for negation).

Assuming that negation falls between TP and the vP-layer in Hindi-Urdu, if the *wh*-remnant in (7) were in Spec, vP (or, indeed, the specifier of a Focus phrase dominated by TP), we would not expect the interpretation of (7) to include negation (as in (7a)). Further we might expect negation in either of these positions higher in the clause to survive sluicing and to be able to follow the *wh*-remnant. However, this is strongly dispreferred. The evidence here suggests that the *wh*-remnant is higher than sentential negation, and that the elided clause is TP-sized.

<sup>1</sup>Cf. Bhattacharya et al. (2000), who present an antisymmetric account of auxiliaries as light verbs in Hindi-Urdu and other South Asian languages.

<sup>2</sup>These must be contexts in which the indefinite can scope over negation; otherwise they are ungrammatical as in English (i):

(i) \*She didn’t talk to any student, but I don’t know who.

Also, for reasons unrelated to this discussion, sluices with *why* can appear with negation in both English and Hindi-Urdu (Horn 1978, Merchant 2000).

(ii) She didn’t go to the dance, but we don’t know why not.

The third piece of evidence for this claim comes from testing whether TP-adjoined adverbials are present in the interpretation of sluiced structures and can accompany the remnant in a sluice. Bell (2012) points out that left-adjoined adjuncts to TP cannot be stranded under sluicing in English.<sup>3</sup>

- (10) a. \*One of the employees opted out of the pay raise but I don't know who<sub>i</sub> [TP **unbelievably** [TP ~~*t<sub>i</sub>* opted out of the pay raise~~]].  
 b. Speaker A: One of the employees opted out of the pay raise.  
 Speaker B: \*Who<sub>i</sub> [TP **unbelievably** [TP < *t<sub>i</sub>* > ~~opted out of the pay raise~~]]?  
 (Bell 2012:14)

Bhatia (2006) argues that adverbs evaluating mood, such as *bhaagya=se* 'luckily/fortunately', are adjoined quite high in the Hindi-Urdu clause structure. Though adverbs are known to be challenging to use for diagnosing clausal positioning in Hindi-Urdu, in this case they pattern quite consistently with the rest of the data presented. In short, TP-adjoined adverbials are interpreted to be within the ellipsis site, and cannot comfortably precede a *wh*-remnant in a sluicing structure.<sup>4</sup>

- (11) *bhaagya=se kisi=ne gaari=ko dekh-aa,*  
 fortune=with someone.OBL=ERG car.F.SG=ACC saw-PRF.M.SG  
*par mujhe nahī pataa kis=ne.*  
 but 1SG.DAT NEG know who.OBL=ERG  
 'Fortunately someone saw the car, but I don't know who.'  
 = a. Fortunately someone saw the car, but I don't know who fortunately saw the car.  
 (12) ?\**bhaagya=se kisi=ne gaari=ko dekh-aa, par mujhe nahī pataa bhaagya=se kis=ne.*<sup>5</sup>

This is certainly unexpected in an analysis in which the *wh*-remnant is located in Spec, vP or in a specifier of a Focus phrase below TP since the TP-adjoined adverbial should not necessarily be interpreted within the ellipsis site and should preferentially remain, preceding the *wh*-remnant.

A fourth piece of evidence might potentially come from the types of constituent ellipsis available in Hindi-Urdu. Hindi-Urdu has been claimed (like French and Spanish) to not permit verb-phrase ellipsis (VPE) in general (Sailor 2014). Toosarvandani (2009) has investigated a type of VPE available in Farsi that strands light verbs (eliding their VP complements). This so-called v-stranding VPE is entirely unavailable for Hindi-Urdu:

- (13) A: *aap=ne kitaab=ko phēk di-yaa?*  
 2PL=ERG bookF.SG=ACC throw give-PRF.M.SG  
 'Did you throw the book away?'  
 B: *hāā, phēk diyaa. / \*hāā di-yaa.*  
 yes throw give-PRF / yes give-PRF.M.SG  
 'Yes, threw.' (= 'Yes, I did.')

If Hindi-Urdu does not permit elision of VP-sized constituents, then an analysis of sluicing in which the *wh*-phrase is in Spec, vP and a VP is elided seems even more unlikely. That said, there is some lack of clarity as to whether VPE is completely impossible and more careful work (along the lines of Goldberg 2005 and Gribanova 2013) is certainly needed. For instance, as Gribanova (2013) points out, if the antecedent of VPE contains a disjunction of two VP-sized constituents containing multiple parts, this cannot be explained away as an instance of argument ellipsis (argued to exist in Hindi-Urdu by Simpson, Choudhury, & Menon 2012). In other words, the ellipsis in (14B) below

<sup>3</sup>Notice that sluicing is grammatical in English if the TP host of the left-adjoined adverbial serves as the antecedent exclusive of the adjunct:

(i) [TP **Unbelievably**, [TP one of the employees opted out of a pay raise]], but I don't know who<sub>i</sub> [TP < *t<sub>i</sub>* > ~~opted out of a pay raise~~].

<sup>4</sup>For a similar line of argumentation concerning relative clause ellipsis in Hungarian, see van Craenenbroeck & Lipták (2013).

<sup>5</sup>The judgments exclude the irrelevant (and somewhat odd) interpretation in which *bhaagya=se* 'fortunately' is evaluating the embedding predicate *pataa* 'know' as in 'I don't know who it was, fortunately'.

must be understood as VPE if it is available. Rajesh Bhatt (p.c.) suggests that (14B) may be possible (though not perfect) on the VPE reading:

- (14) A: mujhe lag-taa hai ki ram=ne sita=ko santaraa  
 1SG.DAT seem-HAB.M.SG be.PRS.3SG that Ram.M=ERG Sita.F=DAT orange  
 yaa mina=ko amruud di-yaa hogaa.  
 or Mina.F=DAT guava give-PRF.M.SG be.FUT.M.3SG  
 ‘It seems to me that Ram gave an orange to Sita or a guava to Mina.’  
 B: nahī, ram=ne nahī di-yaa hogaa.  
 NEG, Ram.M=ERG NEG give-PRF.M.SG be.FUT.M.3SG  
 ‘No, Ram didn’t (give an orange to Sita or a guava to Mina).’

Although these facts certainly merit further investigation, I will argue for no particular account of them here. Instead I will simply point out that if indeed the elision of VP-sized constituents is blocked in Hindi-Urdu this might prove challenging to a proposal in which the *wh*-remnant in sluicing structures is understood to be in Spec, vP (Manetta 2006), since it would be mysterious why, just in this special case, a type of VP-elision is allowed. We would then need to explain the mysterious division between sluicing-like cases of VPE and V/v-stranding VPE. On the other hand, if sluicing indeed involves TP ellipsis, this concern does not arise.

### 2.3 Sluicing in Hindi-Urdu is not a reduced copular clause

Sluicing-like structures in a number of *wh*-in-situ languages seem amenable to analysis as a reduced copular clause with a *wh*-remnant. A reduced copular clause (RCC) is derived via dropping of at least a subject and copula (schematized in English in (15b)), in contrast to a sluice in (15a).

- (15) a. I know you saw someone, but I don’t know [who (you saw — )] sluice  
 b. I know you saw someone, but I don’t know [who (it) (was)] RCC

Hindi-Urdu does in fact have a limited cleft strategy, and as in English the pivot of the cleft can be a *wh*-phrase (in (16)).<sup>6</sup>

- (16) kyaa hai jo mez=kii daayii taraf hai?  
 what be.PRS.3SG REL table.F=GEN.F. right side.F be.PRS.3SG  
 ‘What is it that is to the right of the table?’

That said, Hindi-Urdu does not generally permit the copula to be dropped — an operation that we might expect to exist independently if apparent Hindi-Urdu sluices were actually RCCs. As (17)–(19) show, the copula is required except in the presence of negation.

- (17) siitaa mer-ii dost \*(hai/thii/hogii).  
 Sita.F 1GEN-F.SG friend be.PRS.3SG/be.PAST.F.SG/be.FUT.3SG.F  
 ‘Sita is/was/will be my friend.’  
 (18) tum kis=ke saath \*(ho)?  
 you who.OBL=GEN.OBL with be.PRS.2SG  
 ‘Who are you with?’ (Koul 2008)  
 (19) siitaa mer-ii dost nahī (he).  
 Sita.F 1GEN-F.SG friend NEG be.PRS.3SG  
 ‘Sita is not my friend.’

<sup>6</sup>Though some in the literature have claimed that Hindi-Urdu lacks clefts (Malhotra 2009) their properties have been addressed in eye-tracking studies (see Vasishth et al. 2012), and naturally occurring examples with *wh*-pivots are relatively easy to find/overhear. For instance:

(i) kaun hai jo aap=ke dil=kii awaaz sun-taa hai?  
 who be.PRS.3SG REL 2PL=GEN.M.OBL heart.M=GEN.F.SG voice.F hear-HAB.M.SG be.PRS.3SG  
 ‘Who is it that hears the voice of your heart?’  
 (<http://qna.rediff.com/questions-and-answers/kaun-he-jo-apke-dil-ke-awaz-sunta-hai/18247630/answers>  
 accessed 4/25/12)

Given these facts, the basic operations necessary to form an RCC are not independently present in Hindi-Urdu.

Further, properties of apparent sluices in Hindi-Urdu and properties of RCCs diverge. In RCCs the *wh*-pivot is typically nominative or unmarked (Merchant 2001, van Craenenbroeck 2009, Lasnik 2007), but as we have seen above apparent sluices in Hindi-Urdu require full case connectivity (in (3)–(4)). Sluicing with adjunct *wh*-phrases is grammatical in Hindi-Urdu, but clefting with adjunct *wh*-pivots is not (unlike with arguments, as in (22)).

- (20) us=ne            gaarīi=ko        fiks ki-yaa,  
 3SG.OBL=ERG car.F.SG=ACC fix do-PRF.M.SG  
 magar mujhe    nahī pa-taa            kese (\*thaa).  
 but 1SG.DAT NEG know-HAB.M.SG how (be.PST.M.SG)  
 ‘He fixed the car, but I don’t know how (\*it was).’ (e.g. with what tool)
- (21) subhan ali aa-yaa,            magar mujhe    nahī pa-taa            kyōō (\*thaa).  
 Subhan Ali come-PRF.M.SG, but 1SG.DAT NEG know-HAB.M.SG why (be.PST.M.SG)  
 ‘Subhan Ali came, but I don’t know why (\*it was)’
- (22) us=ne            koi gaarīi    fiks kii,  
 3SG.OBL=ERG some car.F.SG fix do-PRF.F.SG  
 magar mujhe    nahī pa-taa            kaunsii (thii).  
 but 1SG.DAT NEG know-HAB.M.SG which (be.PST.F.SG)  
 ‘He fixed some car, but I don’t know which one (it was).’

For clefts with *wh*-pivots, only an exhaustive reading is available (23B). On the other hand, sluices are compatible with a ‘mention-some’ non-exhaustive interpretation (23B’).

- (23) A: aap=ko    kisi            ofisar=se    baat kar-nii    caahiiye.  
 2PL=DAT some.OBL officer=with talk do-INF.F.SG want  
 ‘You should speak with an officer.’
- B: #kaun hai,            masail=ke            tor            par?  
 who be.PRS.3.SG example=GEN.OBL manner on  
 ‘Who is it, for example?’
- B’: masail=ke            tor            par, kis=se?  
 example=GEN.OBL manner on who.OBL=with  
 ‘For example, who?’

If RCCs are an instance of what Hankamer & Sag (1976) call deep anaphora, then material that seems to be missing should be recoverable pragmatically, not necessarily under linguistic identity. In Hindi-Urdu, as in English, sluicing appears to be surface anaphora, requiring a linguistic antecedent.

- (24) [Shown a picture of an unknown woman]
- a. #I don’t know who.
- b. I don’t know who she is.
- c. #mujhe    nahī pa-taa            kaun.  
 1SG.DAT NEG know-HAB.M.SG who  
 ‘I don’t know who.’
- d. mujhe    nahī pa-taa            kaun hai.  
 1SG.DAT NEG know-HAB.M.SG who be.PRS.3SG  
 ‘I don’t know who it is.’

The data in (17)–(24) suggest that apparent sluicing structures in Hindi-Urdu are not reduced copular clauses or clefts of any kind, but instead have some other derivation.

#### 2.4 Sluicing in Hindi-Urdu is not stripping (Hankamer 1979)

Hankamer (2010) proposes that putative instances of sluicing in Turkish can be analyzed as stripping, an ellipsis in which all constituents but one of a second conjunct go missing (Hankamer 1979, Merchant 2003), as in the English example in (25).

(25) Amit left for Delhi, and Jamal too.

First, stripping is not possible in embedded contexts (unless the antecedent clause too is embedded) as in the English example in (26), but apparent sluicing in Hindi-Urdu can be embedded, as in (27).

(26) \*Amit left for Delhi, and I know Jamal too.

(27) amit kahī ga-yaa, aur mujhe lag-taa hai  
 Amit somewhere go-PFV.M.SG and 1SG.OBL strike-HAB.M.SG be.PRS.3SG  
 ki māī jaan-tii hū kahāā.  
 that 1SG.NOM know-HAB.F.SG be.PRS.1SG where  
 ‘Amit went somewhere, and it seems to me that I know where.’

Second, stripping cannot precede its antecedent (backward anaphora), as in (28). Sluicing in Hindi-Urdu, on the other hand, can.

(28) \*Jamal too, and Amit left for Delhi.

(29) mujhe nahī pataa kahāā, lekin māī jaan-tii hū ki amit  
 1SG.OBL NEG know where but 1SG.NOM know-PFV.F.SG be.PRS.1SG that Amit.M  
 kahī ga-yaa hai.  
 somewhere go-PFV.M.SG be.PRS.3SG  
 ‘I don’t know where, but I know Amit went somewhere’.

Therefore it seems that sluicing-like structures in Hindi-Urdu are not likely to be instances of stripping.

#### 2.5 Sluicing in Hindi-Urdu is not fed by movement to a high focus projection

Toosarvandani (2009) claims that sluicing in Persian is fed by movement to a high focus projection (above TP). There is evidence that this position is independently active in Persian for contrastive focus (Karimi 1999, 2003):

(30) [faghat be kimea]<sub>i</sub> man *t<sub>i</sub>* se tâ ketab dâd-am PERSIAN  
 only to Kimea 1SG three PART book gave-1SG  
 ‘It was only to Kimea that I gave three books.’

Similarly, we see high positional focus in languages like Italian and Gungbe, below (see Cinque 1990, Zubizarreta 2010).

(31) Qualcosa, di sicuro, io farò. (Cinque 1990:15) ITALIAN  
 SOMETHING, surely, I do.FUT  
 ‘Surely, I do something’.

(32) Mótò w? Dòsú kù wá. (Aboh 2007:84) GUNGBE  
 car FOC Dosu drive come  
 ‘Dosu came by CAR’.

However, previous work (Butt & King 1996, Kidwai 1999, 2000) suggests that the unmarked position for both interrogative and non-interrogative focus in Hindi-Urdu is low, immediately preceding the clause-final verb.

(33) māī=ne kamre=mē [in=hii tiin larkō=ko] bhej-aa.  
 1SG=ERG room.M.OBL=in [these=only three boy.PL.OBL=ACC] sent-PFV.M.SG  
 ‘I sent *these* three boys to the room.’ (Butt & King 1996)

- (34) *kitabē kal māī laa-yaa thaa.*  
 book.F.PL yesterday 1SG bring-PFV.M.SG be.PST.M.SG  
 ‘I brought the books yesterday (It is I who brought the books yesterday)’ (Kidwai 2000)
- (35) *kitaab kis=ne dekh-ii*  
 book.F.SG who.OBL=ERG see-PFV.F.SG  
 ‘Who saw the book?’

Since we have established above that apparent sluicing in Hindi-Urdu cannot be the ellipsis of a constituent smaller than TP, then the movement that feeds sluicing is unlikely to be typical movement for focus.

Could it instead be scrambling which feeds sluicing-like ellipsis in Hindi-Urdu?<sup>7</sup> Though the term scrambling can refer to a range of optional displacements in Hindi-Urdu with differing characteristics (Mahajan 1990, 1994, Kidwai 2000), we can show that the movement that precedes apparent sluicing is not scrambling either. The *wh*-word *kyaa* ‘what’, resists scrambling and in general is most felicitous in the preverbal position (as in (36)).

- (36) a. *aap abhii kyaa kar-te hāī?*  
 2PL now what do-HAB.M.PL be.PRS.PL  
 Now what are you doing?
- b. *#kyaa aap abhi kar-te hāī?*

In apparent sluices, however, *kyaa* is a completely felicitous remnant *wh*-word (in (37)).

- (37) *māī=ne yahāā kuch dekh-aa par mujhe nahī pataa kyaa*  
 1SG=ERG here something see-PFV.M.SG but 1SG.DAT NEG know what  
 ‘I saw something there, but I don’t know what.’

If the movement feeding apparent sluicing was scrambling, we might expect *kyaa* to be a less acceptable *wh*-remnant, contrary to fact. While there certainly appears to be some kind of displacement from the base position in Hindi-Urdu sluicing-like structures, it is unlikely that this displacement is either movement to a focus position or scrambling.

## 2.6 Summary

The data in this section collectively suggests that putative sluices in Hindi-Urdu feature a displaced *wh*-remnant at the clause edge and involve elision of a clause-sized constituent.<sup>8</sup> The simplest conclusion is that apparent sluicing structures in Hindi-Urdu are just that: sluicing structures. But there must be something exceptional about them, because there is no (visible) regular process of *wh*-movement to the clause edge in the language. In what follows, I propose that sentences like (1) do indeed feature genuine sluicing, and that what is exceptional in their derivation is the copy of the *wh*-element that is pronounced.

<sup>7</sup>Thanks to Veneeta Dayal and Rajesh Bhatt for bringing this question and this data to my attention.

<sup>8</sup>A reviewer points out that it is important to mention the role of the finite clause subordinator *ki* in this proposal, as *ki* can optionally precede a sluice as in (i):

(i) *māī=ne yahāā kisi=ko dekh-aa par mujhe nahī pataa ki kis=ko.*  
 1SG=ERG there someone.OBL=ACC see-PFV.M.SG but 1SG.DAT NEG know that who.OBL=ACC  
 ‘I saw someone there, but I don’t know who.’

This would be surprising if *ki* were a complementizer located in C, and might seem to indicate that sluicing is not fed by *wh*-movement to Spec, CP in Hindi-Urdu. However, I have pursued elsewhere (Manetta 2006, 2011) that the invariant particle *ki* is not in fact a complementizer in the true sense but instead an optional marker of the phase boundary, not located in C. It is not selected for by the verb (appearing optionally before any type of embedded clause including interrogative complements), is transparent to selection, and has no particular semantic content. Further, it cannot appear before a preposed clause. Also, *ki* can co-occur in an embedded clause with the optional yes/no question marker *kyaa* also argued to be in C. For these reasons I will not consider *ki* to be located in C and will not address it further here.

### 3 “*wh*-in-situ” is lower copy pronunciation

#### 3.1 Support for *wh*-movement in Hindi-Urdu

Among languages that exhibit *wh*-in-situ characteristics, recent work has explored the possibility that the copy privileged for phonological realization might be the lowest copy in a *wh*-chain (Groat & O’Neil 1996, Reintges, Lesourd, & Chung 2006, Reintges 2007, i.a.).

There are two types of support for the claim that an apparent *wh*-in-situ language actually has syntactic *wh*-movement that is concealed by lower copy pronunciation. In general, we should look for such a language to exhibit some features of “overt” *wh*-movement. One type of support comes from the morphological evidence known as *wh*-agreement, in which the morphology of complementizers or verb forms indicates that *wh*-movement has taken place (Reintges, LeSourd, & Chung 2006, Reintges 2007). Unfortunately, Hindi-Urdu does not feature this kind of morphology (though see the speculative discussion of *wh*-expletives below).

Another type of support for this analysis comes from the most basic diagnostics for movement. If a seemingly in-situ *wh*-construction actually exhibits properties associated with movement, we might hypothesize that movement has in fact taken place, but the higher copy of the *wh*-chain goes unpronounced. Among traditional tests for A-bar movement is the presence of Weak Crossover (WCO) effects, arising when a *wh*-chain and a pronoun are co-indexed and the tail of the *wh*-chain fails to c-command the pronoun. The WCO properties of Hindi-Urdu are well known (Mahajan 1990, Dayal 1994, Kidwai 2000), as they are of particular interest in accounts of scrambling in the language, so I will provide only a sketch of the basic facts here.

A pronominal coindexed with a lower *wh*-phrase is strongly dispreferred, as in (38). If that *wh*-phrase is displaced to a position preceding the subject, we see an obviation of WCO effects (compare the grammaticality of (39) with the unacceptability of its English translation). Mahajan (1990) takes this to mean that displacement (scrambling) of this type must therefore be A-movement (though see Dayal 1994, Kidwai 2000 for complexities). When a *wh*-phrase is displaced into a higher clause as in (40) (unambiguously A-bar movement in Hindi-Urdu), the expected WCO effects appear.

(38) ???[us=kii<sub>i</sub>                    behin]=ne            [kis            lar̥ke]=ko<sub>i</sub>            dekh-aa.  
 3SG.OBL=GEN.F.SG sister.F.SG=ERG which.OBL boy.M.SG.OBL=ACC see-PFV.M.SG  
 ‘Which boy<sub>i</sub> did his<sub>i</sub> sister see?’

(39) [kis            lar̥ke]=ko<sub>i</sub>            [us=kii<sub>i</sub>            behin]=ne            t<sub>i</sub> dekh-aa.  
 who.OBL boy.M.SG.OBL=ACC 3SG.OBL=GEN.F.SG sister.F.SG=ERG see-PFV.M.SG  
 ‘Which boy<sub>i</sub> did his<sub>i</sub> sister see?’

(40) \*[kaunsa/har aadmii]<sub>i</sub> [[us=kii<sub>i</sub>                    behin]=ne            soc-aa  
 which/every man.M            3SG.OBL=GEN.F.SG sister.F.sg=ERG think-PFV.M.SG  
 ki    ram=ne            t<sub>i</sub> dekh-aa]?  
 that Ram.M=ERG see-PFV.M.SG  
 ‘Which/every man<sub>i</sub> did his<sub>i</sub> sister think that Ram saw?’ (Bhatt 2003:11–19)

Unfortunately this picture has little to tell us about the approach to *wh*-movement in Hindi-Urdu proposed here. If we assume that (38) involves true *wh*-movement in the narrow syntax to Spec, CP, followed by lower copy pronunciation, we would expect WCO effects to arise as a result of the configuration schematized in (41), giving rise to the ungrammaticality of (38).

(41) [CP ~~which boy<sub>i</sub>~~ [his<sub>i</sub> sister [vP which boy<sub>i</sub> see]]]

Then again, if we assume that Hindi-Urdu is a *wh*-in-situ language, or a language with A-bar movement to a position below the subject, then we would also anticipate the ungrammaticality of (38), since the binder does not c-command the bound variable. In general, Hindi-Urdu is a language in which linear precedence determines binding possibilities (Bhatt & Dayal 2007, Manetta 2012).

(39) also fails to provide straightforward information about the present account. This configuration cannot simply represent the pronunciation of the higher copy in the *wh*-chain, which would be

unexpected under our approach, given that there is nothing to force pronunciation of the dispreferred copy here. Instead, we would need to understand (39) as a context in which the copy pronounced is the result of further scrambling subsequent to *wh*-movement. Under a theory of scrambling and binding like that articulated in Kidwai (2000), scrambling as XP-adjunction renders the copy of ‘which boy’ at the top of the *wh*-chain immediately dominating the subject pronominal ineligible to serve as a local binder (as it itself is a bound variable).<sup>9</sup> As Kidwai points out, the same facts hold in the case in which the direct object is a quantificational phrase (e.g. *har laṛke=ko* ‘each boy’), suggesting that the acceptability of (39) tells us nothing in particular about *wh*-movement. For these reasons, WCO facts cannot really inform the analysis proposed here.

Let us now turn to island effects, which prove to be a more useful diagnostic. Hindi-Urdu exhibits the full range of island sensitivities, as in languages with overt movement (Malhotra 2011:6, 86, Bhattacharya & Simpson 2012).

### Complex NP Island

- (42) \*[*kyaa<sub>i</sub>* *ravii=ko* [DP *yeh baat* [CP *ki miiraa t<sub>i</sub> khaa-yegii*] *pataa hai*]?  
 what Ravi.M=DAT this fact that Mira.F eat-FUT.F.3SG know be.PRS.3SG  
 ‘What does Ravi know the fact that Mira will eat?’ (Malhotra 2009:35) ***wh*-extraction**
- (43) \*[*raam=ne kyaa kah-aa* [ki *ravii=ko* [yeh baat [ki *miiraa kyaa*  
 Ram.M=ERG EXPL say-PFV.M.SG that Ravi.M=DAT this fact that Mira.F what  
*khaa-yegii*] *pataa hai*]]]?  
 eat-FUT.F.3SG know be.PRS.3SG  
 ‘What did Ram say that Ravi knows the fact that Mira will eat?’  
 (Malhotra 2009:32–33) ***wh*-expletive construction**
- (44) \**raam=ko ye baat* [ki *siitaa kis=se mil-ii*] *pataa hai*?  
 Ram.M=DAT that fact that Sita.F who.OBL=with meet-PFV.F.SG know be.PRS.3SG  
 ‘Who does Ram know the claim that Sita met?’ ***wh*-in-situ**

### Adjunct Island

- (45) \**raam=ne kyaa<sub>i</sub> kah-aa* [ki *siitaa bazaar jaa-yegii* [kyunki *mohan t<sub>i</sub>*  
 Ram.M=ERG what say-PFV.M.SG that Sita.F market go-FUT.F.3SG because Mohan.M  
*nahī laa-yaa*]]]?  
 NEG bring-PFV.M.SG  
 ‘What did Ram say that Sita will go to the market because Mohan didn’t bring?’  
***wh*-extraction**
- (46) \**raam=ne kyaa kah-aa* [ki *siitaaa bazaar jaa-yegii* [kyunki *mohan kyaa*  
 Ram.M=ERG EXPL say-PFV.M.SG that Sita.F market go-FUT.F.3SG because Mohan.M what  
*nahī laa-yaa* ]]?  
 NEG bring-PFV.M.SG  
 ‘What did Ram say that Sita will go to the market because Mohan didn’t bring?’  
 (Malhotra 2009:32–33) ***wh*-expletive construction**

### Relative Clause Island

- (47) \**raam=ko kyaa<sub>i</sub>* [DP *vo laṛkaa* [CP *jo t<sub>i</sub> laa-yaa*] ] *pasand hai*  
 Ram.M=DAT what DEM.3SG boy.M.SG REL buy-PFV.M.SG liking be.PRS.3SG  
 ‘What does Ram like the boy that bought?’ (Malhotra 2009:58) ***wh*-extraction**

<sup>9</sup>Space does not permit an in-depth exploration of the details of Kidwai’s account of scrambling in these cases in which expected WCO does not arise (though see Kidwai 2000:124–138). The account of *wh*-movement presented here does not necessarily depend on the particulars of any single approach to scrambling in Hindi-Urdu.

**Wh-island**

- (48) \*raam kaunsaa kamraa<sub>i</sub> pataa kar rahaa hai  
 Ram.M which room.M.SG know do PROG.M.SG be.PRS.3SG  
 ki kaunsii larkii t<sub>i</sub> kiraaye=par le-gii?  
 that which girl.F.SG rent.OBL=LOC take-FUT.F.3SG  
 ‘Which room will Ram find out which girl will rent?’ **wh-extraction**
- (49) \*raam=ne kis=ko puch-aa ki kyaa miiraa=ne t dekh-aa?  
 Ram.M=ERG who.OBL=ACC ask-PFV.M.SG that what Mira.F=ERG see-PFV.M.SG  
 ‘Who did Ram ask whether Mira saw?’ (Malhotra 2009:78) **wh-extraction**
- (50) \*raam jaan-naa caah-taa hai agar miiraa=ne kyaa kharid-aa?  
 Ram know-INF.M.SG want-HAB.M.SG be.PRS.3SG if Mira.F=ERG what buy-PFV.M.SG  
 ‘What does Ram want to know whether Mira bought?’ **wh-in-situ**

Further, Hindi-Urdu seems to allow parasitic gaps (Mahajan 1994:317–323; see also Bošković 2002, Lin 2005). For instance, in (51) the parasitic gap (PG) is licensed by the *wh*-phrase *kaunsi kitaab* ‘which book’, that appears to be sitting in its base-generated pre-verbal position.

- (51) ali=ne [paṛh-ne=se pehle] kaunsi kitaab phēk d-ii?  
 Ali.M=ERG read-INF.M.OBL=with before which book.F.SG throw give-PFV.F.SG  
 ‘Which book did Ali throw away before reading?’

At first glance, the status of (51) as a PG is not completely clear, because as Davison (1999) and Bhatt (2003) have pointed out, these gaps seem to be possible in the absence of movement altogether, as in (52). The gap labeled *e* in (52) is best understood as *pro*.

- (52) ram=ne [binaa e<sub>i</sub> paṛhe] [vo kitaab]<sub>i</sub> phēk d-ii  
 Ram.M=ERG without reading DEM.3SG book.F.SG throw give-PFV.F.SG  
 ‘Ram threw that book away without reading (it).’

However, in Manetta (2013), I claim that Hindi-Urdu does indeed exhibit true PGs (I summarize that argumentation here, but for more detail see Manetta 2013). Following Abe & Nakao (2009) and Abe (2011) for Japanese, I suggest that the *pro* strategy is certainly available for Hindi-Urdu, but that real PGs are also present when the *pro* strategy is unavailable.

For instance, PGs into which reconstruction must apply cannot be easily understood as an instance of *pro*. In (53)–(54) the reflexive can be bound by *har laṛke=ne* ‘each boy’.

- (53) [kaunsi apn-ii<sub>i</sub> tasveer=ko]<sub>j</sub> har laṛke=ne [binaa e<sub>i</sub> dekhe] kah-aa ki  
 which self.F.SG picture.F.SG=ACC each boy.M.OBL=ERG without seeing say-PFV that  
 miriam=ne t<sub>j</sub> pasand ki-yaa  
 Miriam.F=ERG liking do-PFV.M.SG  
 ‘Which picture of himself did each boy, without seeing, say that Miriam liked?’
- (54) [kaunsi apn-ii tasveer=ko<sub>i</sub> [har laṛke=ne [jis=ne e<sub>?i</sub> dekh-aa]]]  
 which self.F.SG picture.F.SG=ACC each boy.M.OBL=ERG REL.OBL=ERG see-PFV.M.SG  
 kah-aa ki miriam=ne t<sub>i</sub> pasand ki-yaa?  
 say-PFV.M.SG that Miriam.F=ERG liking do-PFV.M.SG  
 ‘Which picture of himself did each boy who saw say that Miriam liked?’

In fact, the reflexive cannot be bound by *Miriam* in (53)–(54). If this is so, the *wh*-phrase containing the reflexive must be interpreted as though it were reconstructed into the gap preceding the verb *dekhe* ‘seeing’, not into the position of the trace preceding *pasand kiyaa* ‘like’. It seems that the alleged PG in (53)–(54) can then not be understood as a *pro*. In Manetta (2013) I also show that since configurations like those in (53) and (54) must contain a real PG, other properties of real PGs hold, such as case matching. Careful testing therefore demonstrates that *wh*-structures in Hindi-Urdu do license parasitic gaps.

The diagnostics in this section on the whole suggest that *wh*-movement has indeed taken place in apparent *wh*-in-situ constructions in Hindi-Urdu. Importantly, they do not yet allow us to determine that *wh*-movement targets Spec, CP in the narrow syntax, as the data above is consistent with an analysis in which *wh*-movement targets the edge of the vP layer (as in Manetta 2006, 2011). Theoretically there are then two viable alternatives: in line with my previous work, we could assume that *wh*-movement takes place to Spec, vP (or an equivalent position) regularly in Hindi-Urdu in the narrow syntax but that clause-wide scope is obtained by a mechanism other than syntactic movement (for instance, via an Agree relation valuing features on the interrogative C, or via additional movement operations designed to achieve scope at LF). In this view, the syntactic movement required to produce genuine sluicing in Hindi-Urdu must be understood as exceptional. On the other hand, we could pursue an account in which an additional mechanism to obtain clause-wide scope is not required, and sluicing is not fed by exceptional movement. In that analysis, which I lay out in the remainder of this paper, Hindi-Urdu has regular *wh*-movement to Spec, CP in the narrow syntax, but a lower copy in the *wh*-movement chain is typically pronounced. This second approach is not only consistent with the facts presented in this section, but is more analytically parsimonious, as it posits a single mechanism driving overt displacement within the grammar.

The analysis of a typical *wh*-question in Hindi-Urdu being proposed here is schematized in (55).

- (55) [CP ~~kis=ko~~ [aap=ne yahãã kis=ko dekh-aa]]  
 who=ACC 2PL=ERG here who.OBL=ACC see-PFV.M.SG  
 ‘Who did you see here?’

In (55), the *wh*-phrase *kis=ko* ‘who’ undergoes syntactic *wh*-movement to the specifier of CP from its base-generated position as the complement to the verb *dekhaa* ‘see’. However, the upper copy in Spec, CP goes unpronounced at PF (as indicated by the strikethrough). Instead it is the lower copy that is pronounced, giving rise to a structure that resembles *wh*-in-situ.

Importantly, this type of lower copy pronunciation is quite different from that proposed to exist in languages like Romanian or Bulgarian, in that it is not exceptional or as a last resort (Bošković 2002, Nunes 2004). Instead, Hindi-Urdu exhibits a language-wide preference for lower-copy pronunciation in *wh*-chains, as in Coptic Egyptian (Reingtes 2007). As we will see below, what is exceptional in Hindi-Urdu is pronunciation of higher copies, as in the case of sluicing.

### 3.2 Which copy?

As (33)–(35) above illustrate, Hindi-Urdu is in fact a so-called “*wh*-focus” language, like Hungarian or Turkish, in the sense that there is a dedicated unmarked position for both interrogative and non-interrogative focus. This fact complicates the question of which copy is being pronounced.

Previous approaches to *wh*-dependencies in Hindi-Urdu have attempted to capture this property of Hindi-Urdu by claiming that there is indeed a regular process of *wh*-movement in the language, not to Spec, CP, but to a lower (preverbal) position, Spec, vP (Manetta 2006, 2010, Malhotra & Chandra 2007). This movement is sometimes concealed if the *wh*-word is the direct object (in which case *wh*-movement to Spec, vP is string vacuous), or if further scrambling of other constituents for information-structural purposes alters the surface order. If these accounts are on the right track and the criterial position for *wh*-material in Hindi-Urdu is Spec, vP, then under a copy theoretic approach it would not be the bottom-most copy that would be preferentially phonetically realized but an intermediate copy.

Others have claimed that there are languages in which intermediate copies can be pronounced. For instance, Fanselow and Ćavar (2001) analyze data from Bahasa Indonesia in which they claim that an intermediate copy may be realized in the specifier of an embedded CP:

- (56) ~~Siapa~~ Bill tahu [siapa yang Tom cintai ~~siapa~~] BAHASA INDONESIA  
~~who~~ Bill knows [who FOC Tom loves ~~who~~]  
 ‘Who does Bill know Tom loves?’

In this view, Hindi-Urdu would share with other *wh*-in-situ languages a dispreference for phonetic realization of the topmost copy in a *wh*-movement chain (the one in Spec, CP). It would instead favor pronunciation of the copy located in the Spec, vP of an interrogative clause as in (57).

- (57) [CP ~~kis=ko~~ aap=ne yahã [vP kis=ko ~~kis=ko~~ dekh-aa]]  
~~who.OBL=ACC~~ 2PL=ERG here who.OBL=ACC ~~who.OBL=ACC~~ see-PFV.M.SG  
 ‘Who did you see here?’

We will see below that such an assumption may also be useful in understanding long-distance *wh*-dependencies in Hindi-Urdu, as matrix question interpretation can only arise if phonetically overt *wh*-material is present in the preverbal position in the matrix clause.

One could envision a system of optimized constraints at work to encode the language’s preference for phonetic realization of copies in Spec, vP, which is overridden in exceptional scenarios such as in sluicing configurations under pressure from more highly ranked requirements. Just such a system is developed in Fanselow & Ćavar (2001). That said, I will leave a detailed elaboration of this system in this particular case to future work, and turn now to questions of long-distance *wh*-dependencies and top-copy sluicing.

### 3.3 Long-distance *wh*-dependencies

Scope in Hindi-Urdu is clause-bound. In order to take matrix scope out of an embedded clause, *wh*-phrases must either appear displaced into the clause over which they take scope (though not to its edge) as in (58a), or the *wh*-expletive *kyaa* must be used in the preverbal position as in (58b).

- (58) a. sita=ne **kis=ko** soc-aa ki ravii=ne — dekh-aa?  
 Sita.F=ERG who.OBL=ACC think-PFV.M.SG that Ravi.M=ERG see-PFV.M.SG  
 ‘Who did Sita think that Ravi saw?’  
 b. sita=ne **kyaa** soc-aa ki ravii=ne **kis=ko** dekh-aa?  
 Sita.F=ERG EXPL think-PFV.M.SG that Ravi=ERG who.OBL=ACC see-PFV.M.SG  
 ‘Who did Sita think that Ravi saw?’

This data presents at least two questions for the theory of *wh*-in-situ in Hindi-Urdu as lower copy pronunciation. First, why should it be the case that in instances in which the *wh*-phrase takes scope in a clause higher than its own, either the *wh*-phrase or an expletive must appear in that higher clause? Second, what precisely is the *wh*-expletive construction? Is (58b) a sentence in which *wh*-movement into the higher clause has taken place, or not (independent of how the copies are phonetically realized)?

Manetta (2010) answers the first question by claiming that there is a syntactic requirement of v heads in interrogative clauses (that is, clauses at which an embedded *wh*-phrase will take scope) that overt interrogative material appear there. This is encoded syntactically in the form of an EPP feature on v in the scoping clause. Under the present proposal, this requirement would need to be stated in another way, and in fact in another component of the grammar. Since I have posited here an account in which *wh*-movement to the criterial position always takes place in Hindi-Urdu, it is the copy that is ultimately pronounced that is at issue. We would require a constraint favoring overt phonetic realization of *wh*-content in the Spec, vP of interrogative clauses. The formalization of RECOVERABILITY proposed in section 4 below suggests that interrogative Spec, vP is a position associated with special phonetic content and therefore requires that the member of a movement chain appearing there be pronounced. Such a constraint is easily satisfied by pronunciation of the *wh*-copy in Spec, vP in single interrogative clauses, as we discussed above. Further, an ungrammatical version of (58a) in which the matrix clause had interrogative features (in other words, in which the embedded *wh*-phrase should take matrix scope) but the lower copy of the *wh*-phrase (in the embedded clause) was pronounced would violate this constraint and would be ruled out.

Turning to (58b), the question is whether this surface form represents one in which any *wh*-movement into the matrix clause has taken place. In Manetta (2010), the answer is no; the *wh*-expletive *kyaa* serves to satisfy the EPP on the matrix v just in the case that the embedded *wh*-

phrase does not move. On the other hand, the present account gives us a set of tools to look at (58b) somewhat differently. Could *wh*-movement have taken place, as usual, in the narrow syntax, but resulting in the realization of multiple copies? If so, *kyaa* would need to be understood as an alternate pronunciation of a higher copy in the *wh*-chain, as Hindi-Urdu does not exhibit canonical multiple copy realization as in German. Following a particular proposal in Nunes (2004), this alternate pronunciation of the higher *wh*-phrase as *kyaa* could be the result of fusion of an interrogative head (*v* according to Manetta 2010) and the moved *wh*-word. Another analytical approach to the minimal *wh*-word that serves as a *wh*-expletive in Hindi-Urdu might be very similar to Fanselow's (2001) treatment of resumptive pronouns in movement chains.<sup>10</sup>

There is one piece of (as yet unexplained) evidence that this view of *kyaa* might be important to pursue further. Hindi-Urdu *wh*-expletive structures seem to exhibit island effects, as in (43)–(46) above, and here in (59) (Malhotra & Chandra 2007, Malhotra 2011).

- (59) a. \**[raam=ne kyaa kah-aa [ki ravii=ko [yeh baat [ki miiraa kyaa Ram.M=ERG EXPL say-PFV.M.SG that Ravi.M=ACC this fact that Mira.F what khaa-yegii] pataa hai]]]]?*  
eat-FUT.F.3SG know be.PRES.3SG  
'What did Ram say that Ravi knows the fact that Mira will eat?'
- b. \**raam=ne kyaa kahaa [ki siitaa bazaar ja-yegii [kyunki mohan Ram.M=ERG EXPL say-PFV.M.SG that Sita.F market go-FUT.F.3SG because Mohan.M kyaa nahī lay-aa ]]]?*  
what NEG bring-PFV.M.SG  
'What did Ram say that Sita will go to the market because Mohan didn't bring?'

The ungrammaticality of the structures in (59) suggests that *wh*-movement must have taken place, triggering island violations. Under the tentative approach to *wh*-expletive constructions explored in this section, the full version of the lower copy is pronounced, while a modified/minimal version of the matrix clause copy is realized, in the form of the *wh*-expletive *kyaa*.<sup>11</sup>

While the issues explored in this section do not bear directly on the question of sluicing in Hindi-Urdu, they do seem to provide support for a copy-theoretic approach to *wh*-in-situ in the language

<sup>10</sup>Fanselow & Ćavar 2001 (footnote 8) do not consider *wh*-expletive constructions instances of "true partial *wh*-movement", instead reserving this term for configurations in languages like Bahasa Indonesia in which the *wh*-phrase is pronounced in an intermediate position that is neither its scope position nor its base-generated position. It seems from the discussion here that Hindi-Urdu may well be just such a language, however, with unmarked *wh*-material appearing in Spec, vP.

<sup>11</sup>Unexpected under the copy-theoretic account advanced here is the fact that *wh*-in-situ structures in Hindi-Urdu exhibit intervention effects ((ia) and (iia)), while structures with overt *wh*-displacement across the offending quantificational element do not ((ib) and (iib)) (Malhotra 2011:92–93).

- (i) a. \**raam=hii kis=ko dekh-egaa?*  
Ram.M=only who.OBL=ACC see-FUT.M.3.SG  
'Who will only Ram see?'
- b. *kis=ko raam=hii t dekh-egaa?*  
who.OBL=ACC Ram.M=only see-FUT.M.3SG  
'Who will only Ram see?'
- (ii) a. \**raam=ne kyaa kah-aa ki siitaa=ne=hii kis=ko maar-aa?*  
Ram.M=ERG EXPL say-PFV.M.SG that Sita.F=ERG=only who.OBL=ACC kill-PFV.M.SG  
'Who did Ram say that only Sita killed?'
- b. *kis=ko raam=ne kah-aa ki siitaa=ne=hii t maar-aa?*  
who.OBL=ACC Ram.M=ERG say-PFV.M.SG that Sita.F=ERG=only t kill-PFV.M.SG  
'Who did Ram say that only Sita killed?'

This contrast in *wh*-in-situ languages has historically been understood in terms of LF movement (Beck 1996, Pesetsky 2000); it is the required LF movement of the *wh*-phrase over the quantificational element that causes ungrammaticality. The issue of how intervention effects are best treated in a single cycle model in which there is no LF/covert movement is beyond the scope of this work. However we would want such an account to capture the empirical observation that a language may make a distinction between displacement with PF effects and without (in contrast to a *wh*-in-situ language like Coptic Egyptian, which does not exhibit any intervention effects (Reintges 2007)).

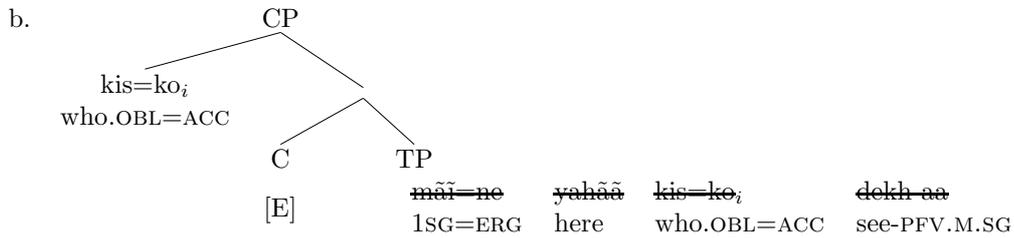
in general. It also seems clear that adopting this account would require a rethinking of various widely-accepted analyses of *wh*-phenomena in Hindi-Urdu, but that this rethinking might result in increased empirical coverage and solutions to unresolved puzzles. I leave the remainder this effort to future work and return now to the account of sluicing.

#### 4 Top-copy sluicing

The core assumption of top-copy sluicing, following Franks (1998) (see also Bošković & Nunes 2007, Reintges 2007, Bošković 2011), is that in a given language the pronunciation of a particular copy in a *wh*-chain at PF is a matter of preference, which can be overridden if pronunciation in the preferred position leads to a PF violation.

Under this account, a sluicing structure in Hindi-Urdu is a marked instance in which the lower copy<sup>12</sup> cannot be pronounced, as it resides in a TP marked for non-pronunciation due to the [E] feature on C (Merchant 2001).

(60) a. I saw someone there, but I don't know. . .



Given this scenario, if the top copy is also not pronounced, the sluiced structure will violate a constraint like RECOVERABILITY that requires that at least one copy of a lexical item to be pronounced.

The primary challenge remaining for the account is to clearly define the mechanisms governing RECOVERABILITY. That is, precisely how do we prevent a scenario in which no copy of a *wh*-chain is phonetically realized? While the reasoning behind recoverability is fairly intuitive, its formalization is not trivial. In particular formulations such as that in Pesetsky (1998) are problematic in that the realization of a copy at PF is contingent on information related to its interpretation — information presumably inaccessible in the PF component.

(61) RECOVERABILITY (Pesetsky 1998)

A syntactic unit with semantic content must be pronounced unless it has a sufficiently local antecedent.

Here I will pursue an alternative formalization in which chain resolution is an exclusively PF process (as in Franks 1999, Bošković 2001, Bobaljik 2002), using the principle of P-RECOVERABILITY developed in Landau (2006).

(62) P-RECOVERABILITY

In a chain  $\langle X_1, \dots X_i \dots X_n \rangle$ , where some  $X_i$  is associated with phonetic content,  $X_i$  must be pronounced.

As Landau points out, P-RECOVERABILITY is a principle that places a lower bound on what must be pronounced in a chain (at least one copy). The upper bound is enforced by an economy condition, preventing all copies in a chain from being pronounced.

(63) Economy of Pronunciation

Delete all chain copies at PF up to P-RECOVERABILITY

<sup>12</sup>In what follows, for simplicity I will continue to refer to the preferred copy for pronunciation in unmarked interrogatives in Hindi-Urdu as the “lower” copy, even though it may in fact be an intermediate copy as discussed in section 3.2 above. As the intermediate copy in Spec, vP would be contained within any TP marked for non-pronunciation (sluiced TP), the distinction is not crucial for this portion of the analysis.

Certainly, P-RECOVERABILITY must always override Economy of Pronunciation, indicating that at least P-RECOVERABILITY is an overarching principle not subject to re-ranking as in an optimal theoretic system. Together, these two principles ensure that at least one copy of a *wh*-chain will be realized.

To complete the definition of P-RECOVERABILITY, Landau defines associated with phonetic content as follows:

- (64) X is associated with phonetic content iff:
- a. X has phonetic content, or
  - b. X is in a position specified with some phonological requirement.

Landau suggests that in the case of V(P)-topicalization in Hebrew, it is the spellout of tense and agreement features and the intonation required for topicalized VPs that require the pronunciation of the two realized copies of the verb. Sturgeon (2008) claims that the intermediate copy in Czech left dislocation is pronounced due to the need to realize associated phonological rise (see also Roberts 2010). Similarly, in the case of a typical *wh*-question in Hindi-Urdu, one could attribute the phonetic realization of the preverbal copy to the need to pronounce the focal stress that appears on immediately pre-verbal *wh*-phrase (Kidwai 2000). It is this requirement to pronounce the member of the chain associated with phonetic content that constitutes the preference in Hindi-Urdu for the pronunciation of the pre-verbal copy in the *wh*-chain, and it is the Economy Condition in (63) that is responsible for the simultaneous non-realization of the top copy.

On the other hand, in a sluicing structure in Hindi-Urdu (the schematic of which is repeated below in (65)), the preverbal copy will no longer be associated with additional phonetic content (focal stress) due to PF-deletion of TP. P-RECOVERABILITY now forces the realization of the phonetic content associated with the *wh*-word for at least one copy of the chain. The only copy now available is that in Spec, CP, resulting in a genuine sluice.

- (65) I saw someone there, but I don't know...
- |    |                                                                        |                |
|----|------------------------------------------------------------------------|----------------|
| a. | <del>...kis=ko māĩ=ne yahãã kis=ko dekh aa</del>                       | *P-RECOVERABLE |
| b. | <del>...kis=ko māĩ=ne yahãã</del> <del>kis=ko</del> <del>dekh aa</del> | SLUICE         |
|    | who.OBL=ACC 1SG=ERG here who.OBL=ACC see-PFV.M.SG                      |                |
|    | ‘...who I saw here’.                                                   |                |

The phonological deletion mechanism that results in a sluice (TP-ellipsis) is independent of the process of chain formation and pronunciation (Landau 2006). P-RECOVERABILITY and Economy of Pronunciation as they are formulated here operate only over chains and therefore cannot force the pronunciation of a segment otherwise designated for non-pronunciation (i.e. undo a sluice or VP-ellipsis). If, indeed, there were no members of the chain outside of the non-pronounced segment that could be realized, the result would be ungrammatical, violating the principle of P-RECOVERABILITY.

Under this account, then, sluicing structures in Hindi-Urdu are, in fact, genuine sluices like those familiar from languages like English. There is full *wh*-movement to the clause edge in the narrow syntax. The C head possesses a feature that calls for non-pronunciation of its TP complement. The only difference between English and Hindi-Urdu is then the manner by which the higher copy in the *wh*-chain comes to be pronounced. In English, this is a matter of course, since English prefers the highest copy in a *wh*-chain to be phonetically realized. In Hindi-Urdu, it is an exception, forced when the copy preferred for phonetic realization, the lower copy, is in a clause already marked for non-pronunciation. The higher copy must then be pronounced to avoid losing phonetic realization of the *wh*-chain altogether.

This analysis then correctly predicts that Hindi-Urdu sluiced structures have properties quite similar to genuine sluices in languages like English, in sharp contrast to other *wh*-in-situ languages which seem to employ other strategies to derive sluicing-like strings (see discussion below of e.g. Gribanova 2011 on the use of the RCC strategy in Uzbek). Properties such as full case connectivity and post-position pied-piping find explanation in the present account since real syntactic *wh*-movement

to Spec, CP does seem to take place. Similarly, it is unsurprising that material in the Tense head is elided in a sluice since a full TP goes unpronounced as in more familiar languages.

Finally, one slightly more controversial property of Hindi-Urdu — the potential for island violation repair — is explained under this approach since it posits full *wh*-movement in the syntax. This property has become emblematic of genuine sluicing and for that reason is important to discuss here. Insofar as island violations can be repaired under sluicing (Malhotra 2011:35; c.f. Bhattacharya & Simpson 2012),<sup>13</sup> we could suggest that the problematic copy, the one inside the island, goes unpronounced in a sluice. The sentence in (66a) shows extraction out of a complex NP island, resulting in ungrammaticality. However, the sluiced version in (66b), leaving behind the *wh*-remnant *kyaa* ‘what’, is acceptable.

- (66) a. \**kyaa ravii=ko* [DP *yeh baat ki miiraa t khaa-yegii*] *pataa hai*  
 what Ravi.M=DAT this fact that Mira.F eat-FUT.F.3SG know be.PRS.3SG  
 ‘What does Ravi know the fact that Mira will eat?’
- b. *raviii=ko* [DP *yeh baat ki miiraa kuch khaa-yegii*] *pataa hai*  
 Ravi.M=DAT this fact that Mira.F something eat-FUT.F.3G know be.PRS.3SG  
*par mǎi nahī jaan-taa kyaa [...]*  
 but 1SG NEG know-HAB.M.SG what  
 ‘Ravi knows the fact that Mira will eat something, but I don’t know what.’

## 5 Conclusions

The primary goal of the analysis presented here is to capture the empirical particulars of sluicing-like constructions in Hindi-Urdu. Adopting the copy theory of movement provides the framework necessary to make two linked claims: (a) normal *wh*-questions in Hindi-Urdu are instances of lower copy pronunciation (a language-specific preference for phonetic realization of a *wh*-chain), and (b) sluices are exceptional instances of top-copy pronunciation. Taken together, these claims offer an explanation for a number of properties of sluicing, as well as other interesting puzzles concerning *wh*-dependencies in the language.

More broadly, this article pursues continued refinement in the implementation of copy theory in *wh*-in-situ languages. The line of research spurred by Groat & O’Neil (1996), Nunes (2004), and Reintges, LeSourd & Chung (2006) (among others) has made important gains in untangling the empirical puzzles presented by *wh*-in-situ languages and the realization of *wh*-chains. The preliminary account of Hindi-Urdu pursued here has suggested that Hindi-Urdu is of the family of *wh*-in-situ languages that typically prefers a lower copy in a *wh*-chain to be pronounced, but requires this preference to be overridden in cases in which scoping pressures or P-RECOVERABILITY demand it.

The present account also represents the early stages of a larger project investigating intra-linguistic variation among the (sometimes radically) different presentations of *wh*-in-situ (Gribanova & Manetta 2013). This project is concerned with the way that certain constellations of properties of *wh*-dependencies and ellipsis processes in *wh*-in-situ languages are best understood. Certainly research up to this point has demonstrated that status as a “*wh*-in-situ” language alone does not predict whether or what kind of sluicing is available in a language (e.g. Takahashi 1994, Ince 2006, Kizu 1997, 2000, Toosarvandani 2009, Gribanova 2011).<sup>14</sup> Even languages with many overlapping *wh*-in-situ properties may not behave precisely the same with respect to sluicing processes — as in, for instance, Hindi-Urdu and Bangla (Bhattacharya & Simpson 2012). Gribanova and Manetta ask if some Indic languages behave like Hindi-Urdu in allowing a structure that looks like genuine sluicing while some Turkic languages seem to use RCC-like strategies (see, for instance, Hankamer

<sup>13</sup>The potential for island violation repair is still controversial in Hindi-Urdu, and though some efforts are currently being made to perform the more delicate empirical research needed to make a clear case (see Malhotra 2010), further work needs to be done. The claim I make is that if indeed island violations are repaired under sluicing, the copy theoretic approach pursued here provides an explanation for these facts.

<sup>14</sup>Conversely, some languages exhibiting overt *wh*-movement have been claimed to exhibit RCC-like strategies to form sluice-like structures (Vincente 2008, van Craenenbroeck 2010)

2010, Griбанова 2011) — from what formal properties of these languages does this split follow? We hope that further investigation can reveal and provide a framework with which to analyze the interface between patterns of *wh*-dependency formation and ellipsis.

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