Could be stronger: Raising and resolving questions with Hindi =to

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Abstract Hindi and several other Indo-Aryan languages contain a discourse marker that has been described as having a wide range of functions including (contrastive) topic marking, intensive, emphatic, contrastive, assertive. In Hindi, this function is realized by the enclitic particle *=to*. Possible English translational equivalents for Hindi *=to* include discourse markers like *in fact, sure, you know, well, as for, at least, finally, but*. This paper investigates the diverse uses of *=to* and argues that the full range can be uniformly accounted for only if *=to* is taken to be a particle that signals that the question resolved by its prejacent is weak. The analysis treats *=to* as a generalized downtoner that comments, not on the strength of the prejacent among alternative answers to a contextually fixed current question, but on the strength of the question that the prejacent addresses, relative to the speaker's information state, prior discourse moves, and assumptions about the common ground.

1 Introduction

Crosslinguistic inquiries into the distribution and interpretation of expressions that track and regulate the flow of information in discourse have yielded a rich understanding of the sorts of functions that may be lexically encoded in this domain. Such expressions, usually called discourse particles, may convey information about speaker attitudes towards propositional content, the assumptions speakers make about their interlocutors' information states, or speaker perspectives on how particular contents fit within larger sequences of discourse moves and the evolving Common Ground. Discourse particles thus provide conventionalized strategies for interlocutors to coordinate on their understanding of the current state of the discourse.

A fruitful approach to analyzing such expressions has involved modeling their meaning in terms of contextually salient questions – Questions Under Discussion (QUD) or Current Questions (CQ). The core idea here is that discourse particles make reference to salient questions/issues in their conventional meaning and comment on how speaker contributions relate to these. For instance, exclusive particles like *only* and *just* in English are taken to convey that their prejacent offers the strongest true answer to the contextually salient question (Rooth 1992, Beaver & Clark 2008,

Velleman et al. 2013, Coppock & Beaver 2014).[1] Additive particles like *also* and *too* in English are taken to convey that the contextually salient question has been partially answered by a salient proposition in the common ground (Beaver & Clark 2008). Structured models of discourse that construe interlocutors' contributions as strategic moves guided by broad discourse or real-world goals offer an even more articulated framework for specifying the meanings of discourse particles. In particular, the construal of questions as part of a hierarchically organized strategy to request and catalogue information required for resolving salient issues allows discourse particle meanings to reference more complex properties of questions in an ongoing discourse – a property that has been observed to be relevant across languages. It has been shown, for instance, that languages may have expressions that signal properties of salient questions such as their complexity or their status in a hierarchy of questions (Jasinskaja & Zeevat 2008, Toosarvandani 2014, Rojas-Esponda 2014a).

A core challenge in this domain from the crosslinguistic perspective is to determine (a) whether there might be a universal core associated with a given discourse meaning (such as exclusivity or additivity or contrast) that recurs across discourse particles in unrelated languages; and (b) the ways in which particles that express discourse meanings might vary in their profiles. I contribute to this research program by investigating an enclitic discourse particle in Hindi, *=to*, that has resisted any unified analysis so far. It is noteworthy that several Indo-Aryan languages (e.g. Bangla, Gujarati, Marathi, Punjabi) also contain functional equivalents of *=to*. This points to the possibility that the particular clustering of discourse effects in Hindi *=to*'s profile is part of an inherited grammatical core from an older proto-system. The stability in this clustering across related languages (and possibly across time) strengthens the hypothesis that it arises from a common core of conventionalized meaning in interaction with specific contextual conditions. In contrast to its stable presence in Indo-Aryan, it appears that *=to*'s profile is not perfectly matched by any particle systematically investigated in formal pragmatic frameworks. The description and analysis offered here thus not only contribute to a better understanding of Hindi and Indo-Aryan languages but also offer a window to expanding our crosslinguistic understanding of discourse-management strategies more generally.

The main claim in this paper is that the discourse function of enclitic *=to* is uniformly to signal that the question addressed by the sentence that *=to* appears in is not a strong one, in a way to be made precise. This discourse function proposed for *=to* is substantively different from a downtoning function where a discourse particle (such as English *at least*) is understood to convey that a weak or partial answer to the salient question is being offered. In contrast, *=to* comments on the strength of

1 The term *prejacent*, as is standard in work on discourse particles, refers to the underlying proposition without the discourse particle of interest. So, in a sentence like *Anu only met three people*, the prejacent would be *Anu met three people.*

the question that is being addressed, relative to the speaker's information state, prior discourse moves, and assumptions about the common ground.

After describing the limited literature on Hindi =*to* in §1.1, and clarifying my basic assumptions in §1.2, this paper proceeds as follows: §2 organizes the core Hindi data for enclitic =*to* and describes how =*to* interacts with the prosodic properties of its hosts. In §3, I present an analysis of =*to* that relies on a model of the context that is sensitive to potential divergence between the speaker's and the addressee's conception of contextual components such as the common ground, the current question, and the salient strategy of inquiry. In §4, I document the distribution of =*to* in declarative responses to prior questions and assertions with different profiles, arguing that all observed patterns can be made sense of if =*to* is taken to comment on the strength of the question that the prejacent addresses. §5 offers an account of the distribution of =*to* and the implications it gives rise to in imperative and interrogative clauses. In §6, I briefly compare =*to* to potential functional relatives crosslinguistically and conclude.

1.1 Enclitic =*to* in Hindi

In grammars of Hindi such as McGregor (1976) and Koul (2008), the enclitic =*to* is discussed in passing with a few illustrating examples. McGregor (1976: 141) notes that "in non-initial sentence or clause position, *to* usually suggests that the given sentence or clause expresses an idea at variance in some way with what precedes (whether the content of a locution, an unexpressed thought or an action), or modifying it in some way." According to Koul (2008: 155) "*to* is mostly used as an emphatic marker and also denotes contrast." Montaut 2015 states that =*to* "constructs a particular kind of theme", which operation involves "either a contrast with another term belonging to the same paradigm, or a contrast in judgements on the same term" (Montaut 2015: 269). Another use of =*to*, for Montaut, is "limiting the relevance of an argument previously proposed by the other speaker, while pretending to confirm it" Montaut (2015: 275). To start off the discussion, I will use some examples of enclitic =*to* from Montaut (2015), which provides a detailed exposition of =*to*'s distribution. Montaut labels this type of occurrence of =*to* where it is a clitic associating to its left, the thematic particle =*to*. In each example in (1), there is a sense in which the use of =*to* evokes contrast with contextually salient alternative propositions to the prejacent, as I have tried to convey with a relevant inference associated with each example signaled by $\rightsquigarrow$. For example, in (1a), the Speaker indicates that the Addressee's current solitary existence contrasts with other times; in (1b) the Speaker indicates that the Hindi book's being given tomorrow contrasts with when the other books are being given; in (1c), the Speaker indicates that their

not being a recipient of $X's$ generosity is in contrast with other individuals being such.

(1) a. **Context:** A is visiting S and gets up to take leave. S indicates that A should stay on:

āj**kəl=to** āp əkele hɛ̃
These.days=*to* you.HON alone.M.PL.NOM be.PRES.3.PL

'These days, you are alone.' (p.267, ex. 3)
⇝ There is nobody waiting for A these days, *in contrast* to other times.

b. **Context:** A wants S to give them S's school books for a few hours, since A forgot their own. S responds:

ye lo! Hindi=ki kitab**=to** tumhẽ
this.NOM take.IMP Hindi=GEN.F.SG book.F.SG.NOM=*to* you.DAT/ACC
kəl dū-ṅgī
tomorrow give-FUT.1SG.FEM

'Take these! As for the Hindi book, I will give it to you tomorrow.' (p.270, ex. 6)
⇝ The Hindi book *contrasts with* the other books, which are being given today.

c. **Context:** An interlocutor in the utterance context has described some individual X as being extremely generous. S responds:

muʤe**=to** us=ne kuʧʰ nəhĩ di-yā
I.DAT/ACC=*to* 3SG=ERG anything NEG give-PERF.M.SG

He didn't give me anything. (p.270, ex. 7)
⇝ S has not benefited from X's generosity, *in contrast* to others.

The contrastive function of *=to* is certainly salient but when one looks systematically, it emerges that contrastive effects are only part of a wider set of effects of *=to*. §2, focusing on *=to* in declarative clauses, classifies many of these effects, considering the role of salient questions in the context as well as the properties of expressions hosting *=to*.

1.2 Background assumptions and terminology

In what follows, I will assume that *=to* uniformly make its meaning contribution at the propositional level regardless of its location in the clause that it appears in.

This means that =*to* comments on the way in which the proposition expressed by its prejacent relates to the larger discourse. The location of =*to* within the clause is understood to provide cues to the nature of the question/issue that the prejacent is taken to address. I will broadly assume the Stalnakerian model of discourse (Stalnaker 1978) according to which discourse evolves against a dynamically evolving set of background assumptions — the Common Ground — that models the shared aspect of the information states of interlocutors. The common ground is thus the set of propositions that the interlocutors mutually take themselves and each other to believe at any point in discourse. The utterance of a declarative sentence with falling intonation by an interlocutor brings about a proposal to add its propositional content to the common ground. The utterance of an interrogative sentence with rising intonation by an interlocutor brings about a request to resolve the question it denotes via future discourse moves.

Throughout this paper, I will use the expressions *question* and *issue* interchangeably. In informal use, both expressions refer to the kind of things that interlocutors raise and seek to resolve in discourse by gaining more information that can be added to their evolving information states. As is usual, I will take questions/issues to be semantic objects that are the denotations of interrogative sentences in a language, but have an existence that is independent of the linguistic devices that may be used to access them. Less standardly, I will distinguish between an *explicitly raised question/issue* and a *speaker-salient question/issue*. The former corresponds to a discourse move (possibly using an interrogative) that is actually made by an interlocutor at a context. The latter is the question that the interlocutor takes their utterance to address at a context. While the distinction I make has not been explicitly made in the literature, work on contrastive topics and how they relate to strategies of inquiry (Roberts 1996 [2012], Büring 1997, 2003) has shown that speakers regularly use prosodic marking to convey that they do not consider the explicit question asked by an interlocutor to be the most salient or strongest question at that context.[2] Krifka (2008) implicitly assumes such a decoupling in introducing *Delimitation* as a

2 For instance, Roberts (1996 [2012]: 48) considers the following exchange in the absence of any prior, related discourse. As she notes, (2b) answers the question in (2a), but it does more than that. Its prosodic profile (contrastive topic marking B-accent on the answer constituent *China*) indicates that B presupposes the Current Question to NOT be the one explicitly raised by A in (2a) but rather a stronger superquestion: *When are you going to which place?*. Contrastive topic marking thus allows the accommodation of a broader, more general question than the one that might have been explicitly raised. Büring (2003: 523) offers similar examples and calls such cases *purely implicational topics*, where the choice of contrastive topic accent conveys the presence of more complex strategies than what is indicated by the explicitly asked question.

(2) a. A: [When are you going to China]$_F$?
b. B: Well, I am going to [China]$_B$ in [April]$_A$.

common ground management function. Delimitation is the indicating by a speaker that the contribution to the common ground effected by a given discourse move is not sufficient for addressing the communicative needs at that point in discourse.[3] We will see that this divergence between the perspectives and priorities of interlocutors with respect to what questions should/can/are expected to be resolved at that context, is something that =*to* exhibits sensitivity to.

2 A wider range of facts: =*to* in declarative clauses

Three aspects of utterances contribute to determining the interpretation of declarative sentences containing =*to*: (a) Whether =*to* attaches to (is hosted by) given or new material; (b) the prosodic realization of the constituent that hosts =*to*; (c) the prosodic realization of the post-=*to* material. In this section, I will introduce the semantic effects of varying these parameters in =*to*-containing declarative utterances in specific contexts.

Consider a context c with interlocutors Anu and Bilal. Let (3a) be a wh-question explicitly asked by Anu at c. (3a) is the explicitly raised current question at c. Such a question will henceforth be notated CQ_c^E. Bilal may answer CQ_c^E using a range of responses (3b)-(3d), with and without =*to*. These are associated with distinct implications, as conveyed by the commentary marked with ⇝.

(3) a. gʰər=mẽ kɔn hɛ?
house=in who.NOM be.PRES.3.SG
CQ_c^E: Who is in the house?

b. gʰər=mẽ [niśa]$_F$ hɛ
house=in niśa.NOM be.PRES.3.SG
Niśa is in the house.
⇝ *Complete or partial answer to* CQ_c^E

c. gʰər=mẽ=**to** [niśa]$_F$ hɛ
house=in=*to* niśa.NOM be.PRES.3.SG
Niśa is in the house.
⇝ *Complete answer to* CQ_c^E
⇝ *Bilal takes the prejacent to be obvious or already resolved in c*

3 Examples of delimitation include the interpretation associated with prosodic marking of contrastive topics, but also the interpretation of frame setters such as *As for his health* in *As for his health, he is fine* (Krifka 2008: 269).

d. g^{h}ər=mẽ [niśa]$_{CT}$=**to** hɛ
house=in niśa.NOM=*to* be.PRES.3.SG
At least Niśa is in the house (I don't know who else).
⇝ *Partial answer to* CQ_c^E
⇝ *Bilal can provide no stronger answer than the prejacent*

(3b), the neutral response, maintains the word order from the interrogative, where the wh-/focused element occurs in preverbal position. (3b) is underspecified: it may be understood to provide a complete answer if Bilal is taken to be a competent source of the relevant information. However, it is compatible with a continuation that implies that the full set of individuals at home is yet to be determined, e.g., Anu may easily follow up with a question like *and who else?*). In (3c), =*to* is cliticized to the constituent conveying given information *g^{h}ər=mẽ* 'at home'; the answer constituent *Niśa* is prosodically prominent and marked by new-information narrow focus.[4] If he uses (3c), Bilal is understood to convey that he considers the prejacent to be obvious, already known, self-evident, or uncontroversial. Using (3d), with =*to* attaching to *Niśa* (which is realized in an intonational pattern that is distinct from narrow focus), Bilal conveys that he is providing only a partial answer to the explicitly raised question CQ_c^E. In other words, (3d), when produced with this distinct pattern (henceforth called Contrastive Topic accent (notated CT)), asserts the truth of *at least* the prejacent and acknowledges that the prejacent resolves only part of the larger issue raised by the explicit question CQ_c^E.[5]

If Anu's question to Bilal is instead about where Niśa is, as in (4a), the effects of =*to* are correspondingly modulated. The explicitly raised question in (4a) differs

4 Hindi intonation is characterized by a series of repeated rising contours, which have been noted as a more general feature of South Asian languages (Féry 2010, Khan 2016). Hindi has structural cues for focus (the preverbal position) and it has been noted that in this position, prosodic marking of focus may often remain unrealized (Patil et al. 2008). Prosodic cues to new information/narrow focus in Hindi have been shown to consistently include post-focal compression (Patil et al. 2008, Kügler 2020) and sometimes higher intensity or a higher excursion in the rising pattern (Féry 2010, Féry et al. 2016). For corrective focus, cues include longer syllable duration, wider F0 span, and lower degree of post-focal compression (Jabeen & Braun 2018). Mumtaz et al. (2021) note that case-marking clitics are integrated in the prosodic phrasing of the nominal head. The interactions between prosody, word order, and information structure in Hindi or, for that matter, other Indo-Aryan languages are far from well-understood and all descriptions provided here must be taken as impressionistic and tentative.

5 In English, contrastive topics are identified intonationally by what is called the B-accent (Jackendoff 1972, Büring 1997, 2003) characterized by a fall-rise (transcribed in Tobi as L+H*) and are associated with distinctive contexts of occurrence and implications about salient superquestions in the context. To the best of my knowledge, there are no studies that examine prosodic cues to Hindi contrastive topics. But impressionistically, there seem to be two ways in which this intonation pattern differs from narrow focus: (a) the rising contour LH within the =*to*-host is more gradual and "scoop-like", with the H sometimes anchored to the discourse particle =*to*; and (b) the material after =*to* does not undergo compression in the pitch range like material in post-focal position.

from the one in (3a) in that determining what constitutes the strongest true answer to (4a) is not purely a truth-conditional matter but involves Gricean considerations of relevance and quantity that may differ across contexts. The *=to*-less (4b) is understood to provide a complete, sufficiently strong response to the CQ in context. (4c), where *=to* attaches to the given *Niśa*, the effect is similar to (3c) — Bilal is understood to take the prejacent to be both sufficiently strong to constitute a complete answer and to incontroversially belong to the common ground from Bilal's perspective. Finally, in (4d), we see that *=to* attaches to the given *Niśa*, which is realized with what I am calling the contrastive topic accent in Hindi. If Bilal utters (4d) with this intonational profile, he is understood to be conveying that the location of other individuals besides Niśa is relevant. The use of *=to* allows Bilal to convey that what he considers to be the issue in need of resolution – the *speaker-salient question/issue* – diverges from the one raised by the explicit question CQ_c^E.

(4) a. niśa kəhã hɛ?
niśa.NOM where be.PRES.3.SG
CQ_c^E: Where is Niśa?

b. niśa $[g^h$ər=mẽ$]_F$ hɛ
niśa.NOM house=in be.PRES.3.SG
Niśa is in the house.
⇝ *Complete, sufficiently fine-grained answer to* CQ_c^E

c. niśa=**to** $[g^h$ər=mẽ$]_F$ hɛ
niśa.NOM=*to* house=in be.PRES.3.SG
Niśa is in the house.
⇝ *Complete sufficiently fine-grained answer to* CQ_c^E
⇝*Bilal takes the prejacent to be obvious or already resolved in c*

d. $[$niśa$]_{CT}$=**to** $[g^h$ər=mẽ$]_F$ hɛ
niśa.NOM=*to* house=in be.PRES.3.SG
Niśa is in the house.
⇝ *Complete, sufficiently fine-grained answer to* CQ_c^E
⇝ *Bilal considers the location of others besides Niśa to be a question/issue that needs resolution*

Things get more involved when *=to* is attached to the new content g^h*ər=mẽ* 'at home.' Letting CQ_c^E be the same as in (4a), if Bilal produces (5a) with the contrastive topic accent on g^h*ər=mẽ* 'at home', he conveys that his answer is not sufficiently fine-grained to completely resolve CQ_c^E. For example, if Anu, Bilal, and Niśa are

in one house and Anu asks the question, wanting to know whether Niśa is in the living-room or the basement or the kitchen of the same house, Bilal's answer in (5a) is of limited help, since it only rules out the possibility that Niśa is not at home. (5b) is similar; in using it, Bilal acknowledges that his answer does not resolve the explicitly raised question in a satisfactory way.

(5) a. niśa [gʰər=mẽ]$_{CT}$=**to** hɛ
niśa.NOM house=in=*to* be.PRES.3.SG
Niśa is in the house, at least. (I can't be more precise)
⇝ *Partial answer to* CQ_c^E
⇝ *Bilal can provide no stronger answer than the prejacent*

b. niśa [gʰər=mẽ]$_{CT}$=**to** nəhĩ hɛ
niśa.NOM house=in=*to* NEG be.PRES.3.SG
Niśa is not in the house, at least. (I can't be more precise)
⇝ *Partial answer to* CQ_c^E
⇝ *Bilal can provide no stronger answer than the prejacent*

Surprisingly, =*to* may also attach to the new content *gʰər=mẽ* 'at home' without it carrying contrastive topic marking accent. In such a case, the final auxiliary verb is stressed, resulting in a falling tone (notated ↓) realized on the verb. Urooj et al. (2020), in their investigation of Urdu intonation, note this H*L pattern as a relatively rare one that appears when the verb is prominent and therefore marked by a rising contour, followed by the intonational boundary tone L.[6] The use of =*to* with prominence on the final auxiliary signals that the speaker considers the explicitly raised question to be inappropriate at *c* because CQ_c^E is already resolvable from information in the context and the addressee should have resolved it themself. Assume that the context for (6) is the same as for (5) above.

(6) niśa gʰər=mẽ=**to** hɛ↓
niśa.NOM house=in=*to* be.PRES.3.SG
Niśa is in the house.
⇝ *Complete, sufficiently fine-grained answer to* CQ_c^E
⇝ *Bilal believes that* CQ_c^E *is inappropriate because it is resolvable from information at c*

6 An anonymous reviewer notes that prosodic prominence on the auxiliary or verb in many languages indicates narrow focus on the polarity of the sentence, which requires special contextual conditions to be felicitous. It is highly likely that this is also the case in Hindi and these conditions could interact with the contextual conditions imposed by =*to*. I leave the study of this interaction for further investigation.

2.1 Constraints on =*to*-hosting

The data above shows that =*to* may be hosted by constituents that contribute both given and new information. Moreover, there are interpretational differences associated with the prosodic realization of the =*to* host as well as the post-=*to* material. On closer observation, we can identify clear constraints on the prosodic marking on =*to* hosts in declaratives. These are stated with illustrations in (7).

(7) a. A constituent that carries new-information focus cannot host =*to*.
CQ: Who is in the house?

#[niśa]$_F$=**to** g^{h}ər=mẽ hɛ
niśa.NOM=*to* house=in be.PRES.3.SG

Niśa is in the house. #focused host

b. A constituent that carries new-information focus cannot precede a constituent that hosts =*to*.
CQ: Who is in the house?

#[niśa]$_F$ g^{h}ər=mẽ=**to** hɛ
niśa.NOM house=in=*to* be.PRES.3.SG

Niśa is in the house. #focus-preceded host

c. A constituent that hosts =*to* may be deaccented or marked as contrastive topic.
CQ: Who is in the house?

g^{h}ər=mẽ=**to** [niśa]$_F$ hɛ
house=in=*to* niśa.NOM be.PRES.3.SG

Niśa is in the house. √deaccented host

g^{h}ər=mẽ [niśa]$_{CT}$=**to** hɛ
house=in=*to* niśa.NOM be.PRES.3.SG

Niśa is in the house. √host marked as contrastive topic

d. Any constituent that precedes a constituent that hosts =*to* must be prosodically deaccented.
CQ: Who is in the house?

#[g^{h}ər=mẽ]$_{CT}$ [niśa]$_{CT}$=**to** hɛ
house=in niśa.NOM=*to* be.PRES.3.SG

Niśa is in the house. #marking-preceded host

It has been said in passing in discussions about information structure in Hindi that =*to* marks topics or partitions the sentences it occurs in into a 'theme' and a 'rheme' or 'topic' and 'comment' (Kidwai 2000, Montaut 2015, Butt 2014). As a particle that is said to signal the "extent" of backgrounded material in a clause, =*to* is not expected to attach to focused constituents (7a) or to be preceded by them (7b). What is surprising is that =*to can* be hosted by constituents that contain new information. But this is *only* if the relevant constituent does not carry new-information focus, as in the second example in (7c). In work on focus and focus-sensitivity, (new-information) focus marking on a constituent in a declarative utterance is standardly understood to provide cues to determining the current question (CQ) in the discourse context. We have already distinguished between explicitly raised questions and speaker-salient questions and shown that the use of =*to* is appropriate in contexts where the two are understood to diverge. The observations regarding =*to* in (7) above allow us to specify a necessary condition on the relation between the =*to* hosts and speaker-salient questions/issues:

(8) **Salience-based constraint on =*to*:** In a declarative utterance, =*to* cannot be hosted by a constituent that completely resolves the speaker-salient issue.

(8) can help make sense of the diverse implications arising from the use of =*to*-containing declaratives that we have already observed (albeit in a scattered way) in the data above. Let us consider in turn each configuration that (8) licenses.

i. =*to* host contributes new information; =*to* host receives CT marking.
Implication: The prejacent is a partial answer to CQ_c^E.
Examples: The partial answers in (3d) and (5a-5b).

ii. =*to* host contributes new information; =*to* host is deaccented.
Implication 1: The prejacent is a complete answer to CQ_c^E.
Implication 2: CQ_c^E is inappropriate because it is resolvable from informa-

tion at c.[7]
Examples: The answer in (6).

iii. *=to* host contributes given information; *=to* host receives CT marking.
Implication 1: The prejacent is a complete answer to CQ_c^E.
Implication 2: A speaker-salient issue is implicitly raised and remains partially unresolved.
Examples: The answer in (4d)

iv. *=to* host contributes given information; *=to* host is deaccented.
Implication 1 : The prejacent is a complete answer to CQ_c^E
Implication 2: CQ_c^E has an obvious resolution or is already resolved in c.
Examples: The answers in (3c) and (4c).

Note that in none of the four configurations permitted by (8) is the prejacent clause understood to completely resolve a speaker-salient question *distinct from* the explicitly raised question.[8] The constraint in (8) thus restrains the complex relationship that may hold between explicitly raised questions, their partial or complete answers, and the (possibly diverging) speaker-salient questions that can be raised or resolved in discourse contexts. Crucially, (8) allows for the decoupling of new information provided in a declarative utterance from the question of whether the new information resolves what the speaker takes to be a salient question.

The relevant effects are tabulated in Table 1. The columns specify whether the *=to* host is deaccented or receives contrastive topic marking in the declarative utterance it occurs in. The rows specify whether the *=to* host contributes new information or whether it denotes content that is previously mentioned/given in the context.

There are two sub-generalizations to be noted from Table 1. *First*, the presence of contrastive topic marking on a *=to* host always signals that there is an unresolved question in the discourse context, whether it is the explicitly raised question or a speaker-salient question. This suggests that *=to* by itself does not conventionally

7 English speakers can get a sense of the difference between the felt effect of *=to* when attached to new vs. given material with these minimally different responses to the question *Where is John?*

(9) a. *John is here at home, duh. (Can't you see?)* corresponds to new *=to* host
b. *Oh, John is here at home. (I thought you knew.)* corresponds to given *=to* host

Although both responses indicate that the speaker believed the prejacent to be accessible in the common ground in the pre-utterance context, there is a qualitative difference. (9a) seems to imply that the question itself is infelicitous given common ground content. (9b), on the other hand, implies acceptance of the question while registering that the speaker's view of common ground content differs from the addressee's view. This is discussed in greater detail in §3.5.

8 Such resolutions do obtain in cases of over-answering where *=to* attaches to deaccented constituents contributing given information (see §4.2). These cases do not violate (8).

=*to*-Host	Deaccented	Contrastive topic
New	CQ_c^E is resolvable given the information in c	CQ_c^E is only partially resolved by prejacent
Given	CQ_c^E has an obvious resolution or is already resolved in c	A speaker-salient question is raised and remains partly unresolved

Table 1 Properties of =*to*-hosts and their discourse effects

signal the presence of an unresolved issue in the context, but rather, co-occurs quasi-categorically with such a signal (contrastive topic marking) elsewhere in the clause. *Second*, when =*to* occurs with deaccented hosts, it conveys that the prejacent, in some way, makes a weak contribution. It is understood to resolve a question that either has an obvious resolution, is already resolved in the context, or to comment on the inappropriateness of the explicitly raised question given common ground content.

2.2 The generalization

The overall generalization so far is that =*to* signals that the question resolved by the prejacent is not a strong one. The question resolved by the prejacent may lack strength relative to the explicitly raised question or the speaker-salient question in virtue of being a subquestion of these. Alternately, it may lack strength in the absolute because it does not shrink the context set in a meaningful way from the speaker's perspective. At the core of the proposal laid out here is the idea that enclitic =*to* uniformly signals that its prejacent resolves a weak question given the context. This is substantively different from saying that =*to* conveys that the prejacent offers a weak or a partial answer to the current question and that a stronger (and complete) true answer is possible. Such a function has been claimed for a downtoner like *at least* by, for instance, (Beaver & Clark 2008: 97–8) and Zeevat (2019). The proposal defended here is that =*to* comments, not on the strength of the prejacent among alternative answers to a contextually fixed CQ, but on the strength of the question that the prejacent addresses, relative to the speaker's information state, prior discourse moves, and assumptions about the common ground. In effect, =*to* is a *generalized* downtoning particle that comments on the strength of explicit and implicit questions and thereby, only indirectly, comments on the strength of the prejacent. The analysis in §3 formally implements this intuition.

3 Analysis

3.1 The relevant components of context

1. Common Ground: Assume that each context c is associated with a body of information INFO_c characterizing the joint, mutually agreed upon public commitments of all interlocutors at c. INFO_c can be construed as a set of propositions or the set of worlds yielded by their intersection (the context set). Discourse moves undertaken by interlocutors are geared towards increasing the set of their joint commitments, which amounts to a progressive reduction of the context set. A declarative sentence S uttered at c embodies a proposal to update INFO_c by adding the propositional content of S to INFO_c (or by intersecting $[\![S]\!]^c$ with INFO_c). An interrogative clause Q embodies a proposal to steer interlocutors towards choosing a proposition to update INFO_c from among a set of alternative propositions in the answer space of the question denoted by Q.[9] A discourse move involving an interrogative at c thus makes public the asker's communicative goals and preferences regarding how INFO_c should evolve through the immediately following discourse.

While much of the literature assumes INFO_c to be identical across all interlocutors, given that interlocutors only presume to know what is shared between them, unfolding discourse often reveals divergences between assumptions about INFO_c. Accommodation of presuppositions is required precisely in contexts where there are such divergences in the common ground across interlocutors before accommodation. Moreover, there may be situations in which some information that is publicly accessible in the discourse context (e.g. a goat enters the room) is not added simultaneously to each interlocutors' public discourse commitments. In such a situation, content may be assumed to be in the shared common ground by one interlocutor without that actually being the case. In order to capture these potential discrepancies between what is in fact common ground between interlocutors and what is assumed to be the common ground by a given interlocutor, we will distinguish between INFO_c^S (the common ground according to the speaker's perspective) and INFO_c^A (the common ground according to the addressee's perspective). We will also identify a distinguished set of propositions that collects the *publicly accessible sensory evidence* at any context c – INFO_{pub_c}. INFO_{pub_c} will include propositions such as the goat entering the room or the siren of a passing ambulance. The actual common ground will be $(\text{INFO}_c^S \cap \text{INFO}_c^A) \cup \text{INFO}_{pub_c}$, represented as INFO_c.

9 Following Groenendijk & Stokhof (1984) a question is formally modeled as a partition that divides a set of worlds into some number of mutually exclusive alternatives. The set of worlds in each cell of the partition agree with respect to the answer to that question. Thus a question Q corresponds to a symmetric, transitive, and reflexive binary relation on the set of worlds W.

2. Current Question: Each context c also provides a question/issue CQ_c that at least one of the interlocutors takes to need resolution in order to update INFO_c. The prosodic structure in a declarative contribution is both constrained by and constrains the CQ_c, by principles that require focus alternatives to be evoked by some part of that contribution. Adapting the model developed in Roberts (1996 [2012]), Beaver & Clark (2008: 48–51) introduce two core principles that regulate the felicitous flow of discourse in terms of the contextually given current question:

(10) a. **Discourse Principle:** Utterances should be maximally relevant to the CQ.
b. **Focus Principle:** Some part of a declarative utterance should evoke a set of alternatives containing all the Rooth-Hamblin alternatives of the CQ.

It is fully recognized in the literature that the question–answer sequence based picture presented in formal models of discourse is vastly limited in terms of connecting to the complex structuring of dialogue in real inter-human interactions. Declarative clauses may not obviously answer explicitly raised questions and few declarative utterances occur as responses to utterances of interrogative clauses. To approximate realistic discourse, any model must allow for unuttered but inferred-and-accommodated, implicit questions. Such questions can be made salient in the context (be construed as the CQ_c) by aspects of the prior utterance or by the utterance of declaratives that convey post-facto that a particular question was salient to the speaker at the immediately preceding context. Answers regularly allow interlocutors to accommodate the CQ_c. As Beaver & Clark 2008: 51 note, "it is only after such accommodation that the Discourse Principle and Focus Principle are satisfied."
The fact that an implicit question can be inferred on the basis of a contributed answer and accommodated in discourse is represented here by distinguishing between CQ_c^E (the question raised by an explicit move in the discourse; the CQ according to the questioner's perspective) and CQ_c^S (the CQ according to the speaker's perspective). In many contexts, it will be the case that $\text{CQ}_c^S = \text{CQ}_c^E$, and CQ_c will suffice to represent this mutually agreed upon question.

3. Strategy of inquiry: Each context c also provides a strategy of inquiry SI_c, which at least one of the interlocutors considers optimal for satisfying joint discourse goals at c. Roberts (1996 [2012])'s model takes discourse to be a *strategic investigation* into the way the world is. The primary goal of interlocutors in any discourse is to determine the ways that things are, but the exchange of information that leads towards this goal must be structured and parceled into manageable portions. A strategy of inquiry, in this model, is a structured sequence of questions designed to systematically refine the context set by breaking up larger conversational goals into subgoals. The idea is that once the interlocutors have mutually accepted a question, they may successively raise and resolve several smaller, more specific questions in

order to resolve this larger, logically stronger question. Strategies of inquiry are thus sets of questions, partially ordered by the relation of entailment. The entailment relation between questions is defined as in (Groenendijk & Stokhof 1984: 16): one interrogative q_1 entails another q_2 iff every proposition that (completely) answers q_1 (completely) answers q_2 as well. In what has become standard terminology now, Roberts terms q_1 the *superquestion* and any q_2 it entails a *subquestion*. For example, a question like *Who is at home?* entails *Are Niśa and Anu at home?*, as well as *Is Niśa at home?*. Intuitively, an entailed question (a subquestion) is weaker (has less informative answers) than an entailing question. Roberts already suggests that a strategy of inquiry constituted by a partially ordered set of questions is not signaled in discourse only via a sequence of explicitly raised questions. Just like implicit questions, strategies of inquiry can be inferred and accommodated as being salient at a context. We will therefore allow for the possibility of diverging perspectives on the contextually salient strategy of inquiry by distinguishing between SI_c^S (the strategy of inquiry according to the speaker's perspective) and SI_c^A (the strategy of inquiry according to the addressee's perspective). Again, in many contexts, it will be the case that $\text{SI}_c^S = \text{SI}_c^A$, and SI_c will suffice to represent this mutually agreed upon strategy of inquiry.

3.2 The formal setup

Assume a set of worlds W, a set of propositions *Prop*, and a set of questions *Ques*.

(11) a. $Prop \subseteq \wp(W)$

b. $Ques \subseteq \wp(Prop)$, s.t. $\forall q \in Ques$:

i. $\forall p, p' \in q : p \cap p' = \emptyset$ if $p \neq p'$ AND

ii. $\cup\{p \mid p \in q\} = W$

(12) A context is a tuple $\langle \text{INFO}_c, \text{CQ}_c, \text{SI}_c \rangle$, such that

a. $\text{INFO}_c \subseteq W$

b. $\text{CQ}_c \in Ques$

c. SI_c is a pair $\langle Q_{\text{SI}_c}, \leq_{\text{SI}_c} \rangle$ s.t. :

i. $Q_{\text{SI}_c} \subseteq Ques$

ii. $\leq_{\text{SI}_c}$ is a partial strength ordering on Q_{SI_c}

iii. $\text{CQ}_c \in Q_{\text{SI}_c}$

iv. $\forall q, q' \in Q_{\text{SI}_c} : q \leq_{\text{SI}_c} q'$ iff $\forall p : p \in q \rightarrow \exists p' \in q' : p \subseteq p'$

v. $\exists q \in Q_{\text{SI}_c} : \forall q' \in Q_{\text{SI}_c} : q \neq q' \rightarrow q <_{\text{SI}_c} q'$

According to (12c), a strategy of inquiry is a set of contextually relevant questions Q_{SI_c} with a strength ordering $\leq_{\text{SI}_c}$, such that Q_{SI_c} includes CQ_c (12c.iii), $\leq_{\text{SI}_c}$ is an entailment-based ranking over questions (12c.iv), and Q_{SI_c} includes some question that is stronger than every other question in Q_{SI_c} (12c.v).[10] Once a hierarchical structure of questions such as a strategy of inquiry is included in the representation of the context, it becomes possible to characterize in a straightforward way, the contribution of devices that are sensitive to strength/weakness among such questions.

3.3 Lexical entry for =*to*

The generalization in §2.2 was that the presence of =*to* signals that the question resolved by its prejacent is weak. This can be expressed straightforwardly using the lexical entry in (13).

(13) $[\![= to]\!]^c = \lambda p \lambda w :\ p \in \text{CQ}_c \wedge \text{WEAK}_c(\text{CQ}_c).\ p(w)$

As expected, =*to* combines with a proposition but adds nothing to its truth-conditional content. Its not-at-issue component simply specifies that the CQ_c (which the prejacent addresses) is weak – which means that it is informationally weak relative to the context. Of course, the usefulness of this lexical entry depends crucially on what it means to be a weak question relative to a context. We define this in (14):

(14) $\forall c, q : \text{WEAK}_c(q) \leftrightarrow$

a. $\exists q' \in Q_{\text{SI}_c^A} : q' <_{\text{SI}_c^A} q$ OR

b. $\exists q' \in Q_{\text{SI}_c^S} : q' <_{\text{SI}_c^S} q$ OR

c. $\exists p \in q : \text{INFO}_c^S \subseteq p$

According to (14), a question q can be considered to be weak at a context c iff one of the three conditions hold; q is not the strongest question in the strategy of inquiry assumed by the addressee (14a); q is not the strongest question in the strategy of inquiry assumed by the speaker (14b); one of the answers to q is entailed by the common ground on the speaker's perspective (14c). This last possibility amounts to saying that q is weaker than even the least inquisitive or trivial question at INFO_c^S.[11] The fourth logical possibility, that of a question being weak at a context because it is entailed by the common ground of the context according to the addressee, cannot

10 Note that this definition allows for a trivial strategy of inquiry in which Q_{SI_c} is a singleton set containing only CQ_c. This is not a problem since there will be contexts in which there is no structured multi-question strategy that guides interlocutors' discourse.

11 The least inquisitive or trivial issue on any information state is one that requires no information beyond the information that is already available in INFO_c^S (Ciardelli et al. 2019).

arise in discourse, since the addressee is expected to not ask superfluous questions (Groenendijk 1999).

Before moving on, let me (again) point out that commenting on the weakness of a question that one is responding to using the prejacent is quite different from commenting on the weakness of an answer that one is contributing using the prejacent. An answer is weak relative to a mutually agreed upon question; whether a question is weak depends on the speaker's perspective on the broader context. In tagging her answer as weak, the speaker takes the common ground INFO_c and the strategy of inquiry SI_c to be shared by the interlocutors and signals that her contribution may not resolve every question in SI_c – i.e. there are possible stronger resolutions. On the other hand, tagging the question which the prejacent addresses as weak can signal that the interlocutors are not perfectly coordinated with respect to the content of INFO_c, CQ_c, or SI_c. This is because questions raised at a context are expected to be non-superfluous and aimed at resolving issues that are not already resolved in INFO_c, and, if possible, resolving the strongest issues that may be reasonably resolved at that context (an instance of Grice's Quantity maxim, as Groenendijk (1999) notes). If the speaker, in offering a *complete* answer to an explicit question from the addressee, signals that the addressee's question is weak, this amounts to signaling that the question has flouted Quantity on the speaker's perspective, i.e. the raised question is already resolved in INFO_c^S, obviously resolvable at c, or that it is not the strongest question in SI_c^S. If the speaker, in offering a *partial* answer to an explicit question from the addressee, signals that the question answered by the prejacent is weak, that amounts to signaling that the prejacent answers a weaker question than the explicitly raised question. That is, $\text{CQ}_c^E < \text{CQ}_c^S$.

There are logically three classes of contextual conditions where a speaker may seek to signal that the question resolved by the contribution they make is not strong. Given that every such class of cases will be such that the speaker and the addressee are not perfectly coordinated on some contextual component, we specify (non)-coordination for each component. In each case in (15) below, CQ_c^S represents the question the speaker answers through their utterance of the prejacent.

(15) a. The speaker is answering a subquestion of the explicitly raised question CQ_c^E. The explicitly raised question is stronger than the speaker-answered question in the addressee's strategy of inquiry. That is:

i. $\text{CQ}_c^S \neq \text{CQ}_c^E$ — S & A do not agree on current question

ii. $\text{SI}_c^S = \text{SI}_c^A$ — S & A agree on strategy of inquiry

iii. $\text{INFO}_c^S = \text{INFO}_c$ — Actual common ground doesn't differ from S expectations

iv. $\exists q \in Q_{\text{SI}_c^A} : q <_{\text{SI}_c^A} \text{CQ}_c^S$ — $q = \text{CQ}_c^E$

The question answered by the prejacent is weak according to (14a).

b. The speaker considers a stronger question than the explicitly raised question CQ_c^E to be relevant. That is:
   i. $\text{INFO}_c^S = \text{INFO}_c$ Actual common ground doesn't differ from S expectations
   ii. $\text{CQ}_c^S = \text{CQ}_c^E$ S & A agree on current question
   iii. $\text{SI}_c^S \neq \text{SI}_c^A$ S & A do not agree on strategy of inquiry
   iv. $\exists q \in Q_{\text{SI}_c^S} : q \neq \text{CQ}_c^E \wedge q <_{\text{SI}_c^S} \text{CQ}_c^E$
   The question answered by the prejacent is weak according to (14b).

c. The explicitly raised question CQ_c^E is already resolved in the common ground from the perspective of the speaker. That is:
   i. $\text{CQ}_c^S = \text{CQ}_c^E$ S & A agree on current question
   ii. $\text{SI}_c^S = \text{SI}_c^A$ S & A agree on strategy of inquiry
   iii. $\text{INFO}_c^S \neq \text{INFO}_c$ Actual common ground differs from S expectations
   iv. $\exists p \in \text{CQ}_c^E : \text{INFO}_c^S \subseteq p \wedge \text{INFO}_c \not\subseteq p$
   The question answered by the prejacent is weak according to (14c).

The reader will notice that the classes of contextual conditions outlined in (15) correspond to the effects described in Table 1. However, there are two connections that remain to be made in order for the analysis to yield a (more) complete understanding of those effects. First, the interaction between contrastive topic marking and the location of =*to* in explicating the salient strategy of inquiry must be spelled out. Second, (15c) does not distinguish between the subtly different effects associated with deaccented new and given =*to* hosts; both effects are attributed to a mismatch between the interlocutors' understanding of the content of the common ground. I make these connections in §3.4 and §3.5.

3.4 Interaction between contrastive topic marking and to= hosting

One observation from §2.1, summarized in Table 1, is that the presence of contrastive topic marking on a =*to* host always signals that there is an unresolved question in the discourse context. In the analysis above, this unresolved question is taken to be a stronger question belonging to a strategy of inquiry salient in the context. There are three possible loci of contrastive topic marking in a declarative utterance that answers a constituent question – the constituent that contributes given information, the constituent that contributes new information, and the post-verbal position in the verbal complex. Each of these, we see, induces different implications about the contextually salient strategy of inquiry. For example, to an explicitly raised question like *Where is Niśa?*, there are three possible responses that contain contrastive topics with accompanying =*to* marking.

(16) a. [niśa]$_{CT}$**=to** g^{h}ər=mẽ hɛ
niśa.NOM=*to* house=in be.PRES.3.SG
Niśa is in the house.
CT marking and =to on given information

b. niśa [g^{h}ər=mẽ]$_{CT}$**=to** hɛ
niśa.NOM house=in=*to* be.PRES.3.SG
Niśa is (at least) inside the house.
CT marking and =to on new information

c. niśa g^{h}ər=mẽ [hɛ]$_{CT}$**=to** səhī
niśa.NOM house=in be.PRES.3.SG=*to* correct
It is correct that Niśa is in the house.
CT marking and =to in post-verbal position

(16a) implies that according to the speaker, the salient strategy of inquiry is one in which the strongest question is *Where is everyone?*, of which the explicitly raised question *Where is Niśa?* is a subquestion. (16b) implies that the salient strategy of inquiry is one in which the strongest question is the explicitly raised question *Where (exactly) is Niśa?* of which *Is Niśa inside the house?* is a subquestion. (16c) implies that the salient strategy of inquiry is one in which the strongest question is something like *Where is Niśa and is she available for a meeting?* of which the explicitly raised question *Where is Niśa?* is a subquestion.

The felicitous use of contrastive topic marking and *=to* placement is determined by the rules in (17). (17a) and (17b) are loosely based on relevant rules for well-formed discourse in Büring (2003) but adapted to the purpose at hand.

(17) a. An utterance u containing a contrastive topic is a felicitous move at a context c iff u indicates a salient strategy of inquiry in c.

b. u indicates a salient strategy of inquiry in c iff the constituent n, marked as contrastive topic in u, evokes a non-singleton set of questions Q, such that (i) for some $q \in Q$, u is a complete answer to q and (ii) there is a $q' \in Q$ s.t. $q' < q$.

c. In any utterance u containing a constituent n marked as contrastive topic, if *=to* is present, *=to* must be hosted by n. If present, *=to* signals that u does not answer the strongest question in the set of questions Q evoked by n.

(17a) states that contrastive topic marking on some constituent in an utterance is only felicitous if there is a contextually salient strategy of inquiry that is indicated by the utterance. (17b) states that the contrastive topic marked constituent must evoke a

set of questions such that the utterance is an answer to one of the questions, but not an answer to the strongest question. Finally, (17c) requires that if =*to* is present in the utterance, it should be hosted by the contrastive topic.

3.5 Deaccented =*to* hosts: contrasting given and new

Another observation from §2.1, summarized in Table 1, is that the presence of =*to* on deaccented hosts gives rise to subtly distinct effects depending on whether the =*to* host contributes new or previously mentioned/given information. To understand the problem, assume a context in which Anu, Bilal, and Niśa are all in different parts of the house. Anu goes to Bilal and asks: *Where is Niśa*? The two minimally different answers to the question in this context with accompanying =*to* marking are in (18).

(18) a. niśa=**to** [g^hər=mẽ]$_F$ hɛ
niśa.NOM=*to* house=in be.PRES.3.SG
Niśa is in the house. (I thought you knew.)
=to host contributes given information and is deaccented

b. niśa g^hər=mẽ=**to** hɛ
niśa.NOM house=in=*to* be.PRES.3.SG
Niśa is in the house. (Duh.)
=to host contributes new information and is deaccented

In (18a), the =*to* host is a constituent contributing given information while in (18b), the host is a constituent that contributes new information – the answer. The contextual profile for an answer like (18a) was already described in (15c). Uttered at a context c, (18a) implies that, according to the speaker, the explicitly raised question either has an obvious resolution or is already resolved in c. (18b) not only implies that the speaker considers the explicitly raised question to be already resolved in c from their perspective, but additionally that they think there is no reason for there to be this discrepancy between the speaker and the addressee. The speaker takes Niśa's whereabouts to be information that is publicly accessible in the broader context and therefore included in what is commonly known. Using (18b), the speaker conveys that the addressee already has all the resources at their disposal to resolve the question they have raised; they have simply not made use of these resources. It is as if the speaker were saying: *Have you tried looking around and figuring out where Niśa is from all the evidence surrounding you?* There is an additional constraint on this particular use of =*to* with any prejacent p. It seems that for =*to* be felicitous in an answer, the questioner be biased towards $\neg p$. The English question-answer sequences below with =*to* host specified and the full Hindi answer given without

glosses will illustrate these uses of *=to* and give English speakers a sense of its effects.

(19) a. i. **Context:** Anu and Bilal had ordered a yellow umbrella online and the color of the umbrella that arrived does not accord with Anu's expectations. She asks Bilal:
Q: What color would you call this?

ii. A: It is yellow**=to**. Hindi: *ye pīlī=to hɛ.*

iii. **Contextual conditions:** The expected color was yellow; the actual umbrella (and the sensory input it provides) is publicly accessible; addressee does not take *This umbrella is yellow* to be true.

b. i. **Context:** Anu likes the biryani that Bilal makes and doesn't eat it if it is made by anyone else. She tastes the biryani that she thinks he made, but something about it is different. She asks Niśa suspiciously:
Q: Who made the biryani?

ii. A: Bilal**=to** made it. Hindi: *bilal=ne=to bənaji.*

iii. **Contextual conditions:** The expected biryani-maker is Bilal; the actual biryani (and the sensory input it provides) is publicly accessible; addressee does not take *Bilal made the biryani* to be true.

In both cases in (19), the constituent question is uttered in a context c in which its resolution is directly entailed by information that is publicly accessible at c. The questioner, moreover, is biased against (the proposition denoted by) the prejacent being true. The speaker's response, where *=to* is hosted by the answer constituent, conveys that the prejacent is not only true but that its truth is determinable from publicly accessible information. Remember that we introduced the notation INFO_{pub_c} in §3.1 in order to represent that subset of sensory information at a context that is assumed to be commonly known by virtue of it being publicly accessible. The actual common ground, INFO_c, is taken to be $(\text{INFO}_c^S \cap \text{INFO}_c^A) \cup \text{INFO}_{pub_c}$. The contextual conditions associated with this class of cases can be represented as follows:

(20) The questioner is biased against the prejacent. Publicly accessible information in the context indicates that the prejacent is the answer to the explicitly raised question CQ_c^E. That is:

a. $\text{CQ}_c^S = \text{CQ}_c^E$ S & A agree on current question

b. $\text{SI}_c^S = \text{SI}_c^A$ S & A agree on strategy of inquiry

c. $\text{INFO}_c^S = \text{INFO}_c$ Actual common ground doesn't differ from S expectations

d. $\exists p \in \text{CQ}_c^E : \text{INFO}_{pub_c} \subseteq p \wedge \text{INFO}_c^A \not\subseteq p$
Publicly accessible information at c resolves the question although this information is

not contained in the common ground on the addressee's perspective.
The question answered by the prejacent is weak according to (14c).

The main difference between the profile of the context in (20) and the context in (15c) is that in (20), the speaker does not note any discrepancy between their conception of the common ground and the actual common ground. Rather the use of =*to* serves to comment on the addressee's version of the common ground and its failure to include relevant publicly accessible information at the context. The explicitly raised question CQ_c^E comes out as weak in such a context because the issue it raises is already resolved given the publicly accessible information at c (INFO_{pub_c}).

It should be noted that this analysis of the use of =*to* in (18b) does not explicitly say anything about why the questioner must be taken to be biased against the prejacent in the context in order for =*to* to be felicitous. However that is the empirical observation. Consider two minimal variants of the contexts in (19a) and (19b) in (21a) and (21b). In (21a), as soon as there is no bias on Anu's part against the umbrella being described as yellow, the use of =*to* with the deaccented new-information-contributing host becomes infelicitous.[12]

(21) a. i. **Context:** Anu and Bilal had ordered an umbrella online and the color of the umbrella that arrives is hard to clearly name. She asks Bilal for help in identifying the correct label:
Q: What color would you call this? (I am finding it hard to name).

ii. A: #It is yellow**=to**. Hindi: *#ye pīlī=to hɛ.*

iii. **Contextual conditions:** The actual umbrella (and the sensory input it provides) is publicly accessible. The addressee is not biased against *This umbrella is yellow* being true.

b. i. **Context:** Anu likes the biryani that Bilal makes and doesn't eat it if it is made by anyone else. She enters the kitchen and the smell of biryani wafts up to her nose. She asks Niśa:
Q: Who made the biryani?

ii. A: #Bilal**=to** made it. Hindi: *#bilal=ne=to bənaji.*

iii. **Contextual conditions:** The actual biryani (and the sensory input it provides) is publicly accessible; The addressee is not biased against *Bilal made the biryani* being true.

At this point, I leave this additional felicity condition on =*to*'s use with deaccented new-information contributing hosts as an unsolved problem that may or may not require additional assumptions.

12 Of course Bilal could use =*to* in this sentence if it is attached to the pronoun *ye=to pīlī hɛ* without a problem. The same goes for Niśa's answer in (21b).

3.6 Summary

This section sketched out an analysis that attempts to capture the intuition that *=to* signals that its prejacent does not resolve a strong question. Conceptually, the main innovation was to assume that components of the context such as the current question, the salient strategy of inquiry, as well as the common ground may not be perfectly coordinated for interlocutors in unfolding discourse. Thus, while it is possible (and indeed frequently the case) that speakers straightforwardly accept a raised question or an initiated strategy of inquiry and respond fully to it in a single turn, it is also possible that they break down the raised question into an articulated strategy of inquiry or introduce a new strategy of inquiry that subsumes the explicitly raised question. The lexical entry for *=to* proposed in (13) accounts for the fact that *=to*, in conjunction with contrastive marking on particular constituents, signals the presence of a broader strategy of inquiry, of which the question resolved by the prejacent is a proper subquestion. Moreover, the same lexical entry accounts for the fact that speakers may convey that an explicitly raised question is weak relative to the common ground if the question has an obvious resolution in or is already resolved in the common ground. Further, as discussed in §3.5, the effect of *=to* attaching to hosts contributing new information is strictly stronger than the effect of *=to* attaching to hosts contributing given information. When *=to* attaches to new hosts, it conveys that the explicitly raised question is resolvable from publicly accessible information that the addressee should have added to their version of the common ground.

A range of empirical facts about *=to*'s distribution can be made sense of once we assume that it uniformly signals the weakness of the question its prejacent resolves. I turn to the documentation and accounting of some of these facts in the domain of declarative clauses in §4. To the best of my knowledge, these patterns have not been systematically documented yet. Then, in §5, I provide a preliminary account of the use of *=to* in interrogative and imperative clauses.

4 More contexts of (in)felicitous use

4.1 Responses to assertions

All examples in §2 and §3 involved the use of *=to* in the answer part of an explicit question–answer sequence. However, *=to* may also occur in responses to assertions. Assertions are standardly understood as proposals to update the common ground in a way compatible with their content (Farkas & Bruce 2010, Farkas & Roelofsen 2017). In the discourse model presented in Farkas & Bruce (2010), an assertion has the effect of adding the denoted proposition to the Conversational Table for consideration for addition to the common ground. An assertion thus raises an issue by "placing an item on the Table and it directs the conversation towards a unique

resolution of that issue, namely, confirmation of the assertion." (Farkas & Bruce 2010: 92). If the assertion receives confirmation by interlocutors, the proposition is added to the common ground, otherwise not. For our purposes, any sequence of conversational turns in which =*to* is used in a move asserting p that responds to a prior move asserting q, the explicitly raised question CQ_c^E will always be the same: whether it is appropriate to add q to INFO_c.

Consider a context where Anu asserts (22a) denoting proposition g, thus raising the issue of whether g can be added to the common ground. Let this be CQ_c^E in the context. Bilal can respond to Anu's assertion using =*to*, as in (22b), (22c) or (22d).

(22) a. niśa gʰər=mẽ hɛ
niśa.NOM house=in be.PRES.3.SG
Niśa is in the house.

b. niśa**=to** bəmbəi=mẽ hɛ
niśa.NOM=*to* Bombay=in be.PRES.3.SG
Niśa is in Bombay.

c. [muʤʰe]$_{CT}$**=to** nəhĩ dikʰ rəhi hɛ
I.DAT/ACC=*to* NEG appear.GER PROG.F.SG be.PRES.3.SG
[I]$_{CT}$ can't see her.

d. vo**=to** hər.vəkt gʰər=mẽ ho-ti hɛ
She.NOM=*to* always house=in be-IMPF.F.SG be.PRES.3.SG
She is always at home (...big deal).

In (22b), Bilal conveys that g cannot be added to the common ground because it is inconsistent with it. CQ_c^E (whether g should be added to the common ground) is already resolved in the negative in INFO_c^S (Bilal's version of the common ground). CQ_c^E thus lacks strength in the absolute because its resolution fails to meaningfully shrink the context set from Bilal's perspective. Using (22c) Bilal conveys that he does not have the evidence to take on g as a public discourse commitment but does not rule out (modulo further evidence) adding g to his public discourse commitments. The prejacent here resolves the question of whether Bilal can take g on as a public discourse commitment – a subquestion of CQ_c^E.[13] The question resolved by the prejacent thus lacks strength relative to CQ_c^E because it only resolves CQ_c^E partially. By using (22d), Bilal conveys that CQ_c^E does not raise a strong issue in the context. Given that Niśa is always at home, it is no surprise that she is at home at the time of

13 A proposition can be added to the common ground iff it is taken on as a public discourse commitment by all interlocutors; i.e. iff it is a joint commitment of all interlocutors.

c. In other words, CQ_c^E has an obvious resolution in c; g can be easily added to the common ground.

4.2 Over-answering

=to is perfectly felicitous in cases of over-answering, where a speaker answers a question with a response that is finer-grained than the alternatives in the denotation of that question.[14] This is illustrated here with polar interrogatives and responses to them.[15] To a question like (23a), Bilal may respond with (23b), (23c), or (23d), all of which completely answer the question expressed by the polar interrogative and also provide further information. Notice that in each case, *=to* attaches to a deaccented constituent that contributes given information – the third person pronoun *vo* in (23b-23c) and the definite description in (23d).

(23) a. niśa tumharī bəhɛn hɛ (kya)
niśa.NOM your.F.SG.NOM sister.F.SG.NOM be.PRES.3.SG POL-Q
CQ_c^E: Is Niśa your sister/cousin?[16]

b. hɑ̃̃, vo=**to** meri [səgī-bəhɛn]$_F$(#**=to**) hɛ
yes she=*to* my.F.SG.NOM sibling.F.SG.NOM=*to* be.PRES.3.SG
Yes, (in fact), she is my sibling.
$\rightsquigarrow$*Over-answer to* CQ_c^E

c. nəhĩ, vo=**to** meri [dost]$_F$(#**=to**) hɛ
no she=*to* my.F.SG.NOM friend.F.SG.NOM=*to* be.PRES.3.SG
No, (in fact), she is my friend.
$\rightsquigarrow$*Over-answer to* CQ_c^E

d. nəhɑ̃̃, meri bəhɛn=**to** [mīra]$_F$(#**=to**) hɛ
no my.F.SG.NOM sister.F.SG.NOM=*to* Mīra=*to* be.PRES.3.SG
No, (in fact) my sister is Mīra.
$\rightsquigarrow$*Over-answer to* CQ_c^E

14 The response thus proposes to update the common ground by not only eliminating one of the cells in the partition corresponding to the question but also additional worlds that are incompatible with the content of the answer.

15 Polar questions in Hindi are optionally marked by an interrogative particle *kya*, which has a complex distribution and discourse pragmatics (Butt et al. 2017, Bhatt & Dayal 2020). The responses with *=to* in (23), (25), and (27) are felicitous with a polar interrogative with or without the polar *kya*.

16 The term *bəhɛn* in Hindi subsumes the kinship relations of biological female sibling and female cousin. The term *səgī-bɛhɛn* in (23b) unambiguously refers to a biological female sibling.

Attaching =*to* to the predicate constituents in (23b) or (23c) – whether deaccented or with contrastive topic marking – is ruled out. So is attaching it to *Mīra* in (23d). Note that in each unacceptable case, the relevant constituent contributes new information. As discussed in §3.5, =*to* can be hosted by a deaccented constituent contributing new information only if the speaker takes CQ_c^E to be resolvable from publicly accessible information. The infelicity of =*to* when attached to the predicate constituents is thus accounted for naturally given the discourse context.

How can an over-answering response contain a particle that conveys that the question answered by the prejacent is weak? Here is a way to think about this. At any context, an over-answering response means that there is divergence between CQ_c^E and the question that the prejacent addresses (CQ_c^S). In some contexts, both interlocutors may be aware that CQ_c^E is part of a strategy of inquiry SI_c^A initiated by the addressee. For instance, Bilal may be aware that (23a) is being asked in order to determine the relationship between him and Niśa or to determine the identity of his sister and take that to be SI_c^A. In such a context, Bilal does not unilaterally take CQ_c^S to be salient but rather recognizes it as the strongest question in $Q_{\text{SI}_c^A}$, the set of questions constituting the addressee's strategy SI_c^A. (23b) and (23c) indicate that Bilal takes SI_c^A to be aimed at identifying the relationship between him and Niśa while (23d) indicates that Bilal takes SI_c^A to be aimed at determining the identity of his sister. In either case, the over-answer conveys that the question resolved by the prejacent is not a strong one. The contextual profile is given in (24). Let $Max(\text{SI}_c)$ denote the strongest question in the set of questions Q_{SI_c} in any salient strategy of inquiry.

(24) The strongest question in $Q_{\text{SI}_c^A}$ (of which CQ_c^E is a subquestion) is already resolved in the common ground from the perspective of the speaker. That is:

a. $\text{CQ}_c^S \neq \text{CQ}_c^E$ — S & A do not agree on current question

b. $\text{SI}_c^S = \text{SI}_c^A$ — S & A agree on strategy of inquiry

c. $\text{CQ}_c^S = Max(\text{SI}_c^A)$ — S addresses the strongest question in *A*'s strategy

d. $\text{INFO}_c^S \neq \text{INFO}_c$ — Actual common ground differs from S expectations

e. $\exists p \in Max(\text{SI}_c^A)$: $\text{INFO}_c^S \subseteq p \wedge \text{INFO}_c \not\subseteq p$
The question answered by the prejacent has an obvious resolution according to S
The question answered by the prejacent is weak according to (14c).

A context in which the speaker signals the "recognition" of the strategy of inquiry initiated by the addressee and addresses its strongest question is a cooperative over-answering context. Over-answering can also occur uncooperatively if the speaker unilaterally assumes a strategy of inquiry and proceeds to resolve its strongest question without making the prior move of raising the question. To illustrate, if Bilal uses (25a) to ask Anu if he looks reasonably dressed for a routine zoom meeting

with his collaborator, Anu might respond with the over-answers in (25b) or (25c) – both containing =*to*.

(25) a. mɛ̃ ʈʰīk ləg rəha hū̃ (kya)
I.NOM okay appear.GER PROG.M.SG be.PRES.1.SG POL-Q
CQ_c^E: Am I looking okay?

b. hā̃, tum=**to** [hīro]$_F$(#=**to**) ləg rəhe ho
yes you.NOM=*to* hero.NOM=*to* appear.GER PROG.M.PL be.PRES.2.SG
Yes, you are looking very dashing (lit. like a film hero).
⇝*Over-answer to* CQ_c^E

c. nəhī̃, tumhari kəmiʤ=ko=**to** [istrī]$_F$(#=**to**) nəhī̃
no your.GEN.F.OBL shirt.F.SG.OBL=DAT/ACC=*to* iron.NOM=*to* NEG
hɛ
be.PRES.3.SG
No, your shirt is not (even) pressed.
⇝*Over-answer to* CQ_c^E

Given the context, we might assume that Bilal does not have a high threshold for what counts as reasonably dressed and is not deeply interested in resolving the question of the degree to which he is well-dressed, as long as he doesn't look terrible at the meeting. Anu's evaluative responses in (25b) and (25c) signal that she assumes a broader strategy of inquiry SI_c^S whose strongest question $Max(\text{SI}_c^S)$ is *How well-dressed is Bilal relative to the contextual standard for well-dressedness?* The explicitly raised question CQ_c^E is a subquestion of $Max(\text{SI}_c^S)$.[17] The associated contextual profile is in (26).

(26) The strongest question in $Q_{\text{SI}_c^S}$ (of which CQ_c^E is a subquestion) is already resolved in the common ground from the perspective of the speaker. That is:

a. $\text{CQ}_c^S \neq \text{CQ}_c^E$ S & A do not agree on current question
b. $\text{SI}_c^S \neq \text{SI}_c^A$ S & A do not agree on strategy of inquiry
c. $\text{CQ}_c^S = Max(\text{SI}_c^S)$ S addresses the strongest question in S's strategy
d. $\text{INFO}_c^S \neq \text{INFO}_c$ Actual common ground differs from S expectations
e. $\exists p \in Max(\text{SI}_c^S)$: $\text{INFO}_c^S \subseteq p \wedge \text{INFO}_c \not\subseteq p$
The question answered by the prejacent has an obvious resolution according to S
The question answered by the prejacent is weak according to (14c).

17 The question *How well-dressed is Bilal relative to the contextual standard for well-dressedness?* is a superquestion of *Is Bilal reasonably dressed relative to the contextual standard for well-dressedness?* because the former entails the latter; i.e., every complete answer to the former entails a complete answer to the latter.

4.3 Under-answering

=*to* is also felicitous in cases of under-answering in polar interrogatives. In this class of cases, the speaker may either provide some evidence in support of one of the answers without providing definitive resolution of the issue or convey total ignorance regarding the truth-value of the embedded sentence radical. =*to* is totally at home in such responses, which fail to resolve CQ_c^E. These cases are somewhat parallel to the cases in (3) where (only) partial resolution of an explicitly raised issue can be signaled by =*to* attached to a contrastively-marked new-information carrying constituent, as in (3d). But the cases diverge in that the responses in under-answering cases, although informative in the sense of refining the context set, do not offer a partial answer to CQ_c^E. For example, if someone wants to know the relationship between Niśa and Bilal, and uses the interrogative in (27a) to pose the question, an ignorant Anu might respond with (27b) or (27c).[18] Neither response constitutes a partial answer to the CQ_c^E in the sense of answering a subquestion in the strategy defined by CQ_c^E, but both do signal a related but distinct strategy on the part of the speaker that is relevant to answering the CQ_c^E.

To explicate, we can assume uncontroversially that a felicity condition for a discourse move involving any interrogative at a context is that the questioner takes their addressee's information state to entail a true answer to the question posed by the interrogative. If this is the case, then any context in which a polar question ?p is put up for resolution is also a context in which questions such as *Who knows whether p is the case?* or *What evidence is known to be available for/against p?* are assumed to have been resolved appropriately. In a sense ?p presupposes these latter questions.[19] Now, if these questions are not already resolved appropriately at c, the speaker may undertake a strategy of inquiry, SI_c^S to resolve these questions. In (27b), the strongest question in SI_c^S is *What is the evidence for the highlighted proposition in* CQ_c^E *'Niśa is Bilal's sister.'?*. The prejacent resolves a subquestion of this question: *Do Niśa and Bilal live in the same house?*. In (27c), the strongest question in SI_c^S is *Who knows the answer to* CQ_c^E*?*. The prejacent resolves a subquestion of this question: *Does Anu know the answer to* CQ_c^E*?*.

(27) a. niśa bilal=kī bəhɛn hɛ (kya)
niśa.NOM Bilal=F.SG.GEN sister.F.SG.NOM be.PRES.3.SG POL-Q

18 If (27c) is produced with contrastive topic marking on *muʤe* 'I.DAT/ACC' (c.f. *[I]$_{CT}$ don't know*), Anu would be taken to signal that there might be individuals besides her in the context that can resolve CQ_c^E. Through this response, Anu would indicate that the strategy of inquiry SI_c^S that is relevant is *Who knows what the relationship between Niśa and Bilal is?*.

19 The relation of presupposition between questions is left at a completely informal level for the purposes of this paper. But one might say that Q_1 presupposes Q_2 at c if an utterance u can be used to answer Q_1 at c only if Q_2 has been resolved appropriately at c.

CQ_c^E: Is Niśa Bilal's sister/cousin?

b. vo(#**=to**) us=ke=sat$^{\text{h}}$ [rɛh-ta]$_{CT}$**=to** hɛ
he=*to* she.OBL.GEN=with live-IMPF.M.SG=*to* be.PRES.3.SG
Well, he lives with (in the same house as) her.
⇝*Under-informative answer to* CQ_c^E*;* CQ_c^E *remains unresolved*
⇝*Anu can provide no stronger response than the prejacent*

c. muʤe**=to** nəhĩ̃ malūm
I.DAT/ACC=*to* NEG known
It is not known to me (I have no idea).
⇝*Under-informative answer to* CQ_c^E*;* CQ_c^E *remains unresolved*
⇝*Anu can provide no stronger response than the prejacent*

In either case, the question resolved by the prejacent is weak because it is not the strongest question in $Q_{\text{SI}_c^S}$, which is one of the conditions for weakness as defined in (14b). The contextual profile for under-answering cases is in (28).

(28) The prejacent does not address the strongest question in $Q_{\text{SI}_c^S}$. SI_c^S is a strategy to answer a question presupposed by the explicitly raised question CQ_c^E. The prejacent provides information about the speaker's information state wrt resolving CQ_c^E. That is:

a. $\text{CQ}_c^S \neq \text{CQ}_c^E$ S & A do not agree on current question

b. $\text{SI}_c^S \neq \text{SI}_c^A$ S & A do not agree on strategy of inquiry

c. $\text{INFO}_c^S = \text{INFO}_c$ Actual common ground doesn't differ from S expectations

d. CQ_c^E presupposes $Max(\text{SI}_c^S)$
The question answered by the prejacent is a subquestion of the strongest question in S's strategy of inquiry.
The question answered by the prejacent is weak according to (14b).

4.4 *=to* in private mental state questions

A straightforward prediction of the analysis proposed here is that *=to* (with deaccented hosts) should be unacceptable in responses to interrogatives that raise questions about the speaker's private preferences or thoughts in the utterance context. This is because, as established in §2.1, when *=to* attaches to such hosts contributing new or given information, the implication is that the question answered by the prejacent is easily resolvable or already resolved in the common ground on the speaker's perspective. It is difficult to see how a speaker could consistently maintain that some

proposition is part of their private mental state at the utterance context while at the same time being part of their conception of the common ground, predicting that =*to* is infelicitous in such contexts. This prediction is borne out, as exemplified in contexts such as in (29).

(29) a. **Context:** Bilal hasn't decided if he will get the groceries today or tomorrow. Anu asks if he can decide now so she can plan ahead. He says:

mɛ̃(#=**to**) aʤ ɠa-ta hũ
I.NOM=*to* today go-IMPF.M.SG be.PRES.1.SG

I will go today.

b. **Context:** Bilal is dreading going to his office because he risks having an unpleasant encounter with his boss. Anu, not knowing this, asks him why he hasn't yet left for office. Bilal says:

muʤʰe(#=**to**) ɖər ləg rəha hɛ
I.DAT/ACC=*to* fear.M.SG.NOM attach.GER PROG.M.SG be.PRES.3.SG

I am feeling scared.

4.5 =*to* in information acquisition reports

Another discourse effect closely related to contrastive uses of =*to* is when it occurs in declaratives that report the recent acquisition of some piece of knowledge. In these cases, =*to*-containing declaratives respond, not to an explicitly raised question in the context, but rather to information obtained directly from the larger discourse context. In examples such as those in (30a) and (30b), the presence of =*to* adds counter-expectational flavor; it signals that the recently acquired information expressed by the prejacent contrasts with the speaker's prior expectations.

(30) a. **Context:** The blanket that Anu uses everyday ripped slightly recently. Anu notices the rip only now:

əre, ye ʧadər=**to** pʰəʈī hɛ
Oh, this.NOM blanket.F.SG.NOM=*to* tear.PERF.F.SG be.PRES.3.SG

Oh, this blanket is torn!

b. **Context:** Anu does not know that Bilal has given up meat. She sees him at a party, avoiding the meat dishes and piling salad on his plate. She says:

ərе, tum=**to** əb ʃakaharī ho gəje
Oh, you.NOM=*to* now vegetarian become.GER go.PERF.M.PL
ho
be.PRES.3.PL

Oh, you have now turned vegetarian!

These uses are straightforwardly assimilable under the broader analysis of *=to* as commenting on the weakness of the question resolved by the prejacent. In (30a), the speaker-salient question CQ_c^S is: *What is the current state of this blanket?* In (30b), the speaker-salient question CQ_c^S is: *What are Bilal's current food preferences?* Both questions are weak relative to the context they are uttered in because their answers are entailed by the publicly accessible information at the context. The mirativity effect observed in such contexts is entirely due to the fact that the prejacent content is asserted despite being publicly accessible. Any assertion made at a context is felicitous if the proposition asserted is not entailed by the common ground. If a speaker asserts a proposition that is entailed by publicly accessible information at a context c, it can only be felicitous if the proposition is not part of the pre-utterance common ground according to the speaker (notated (INFO_{c-1}^S). The proposition, while publicly accessible, is new for the speaker. The relevant contextual profile is in (31).

(31) The prejacent answers an implicit speaker-salient question CQ_c^S. The prejacent contributes publicly accessible information at c. That is:

a. CQ_c^S is implicit — There is no explicitly raised question

b. $\text{INFO}_{c-1}^S \neq \text{INFO}_c$ — Actual common ground differs from S's pre-utterance version

c. $\exists p \in \text{CQ}_c^S : p \in \text{INFO}_{pub_c} \wedge p \notin \text{INFO}_{c-1}^S$
Publicly accessible information at c resolves S's question although this information was not in the pre-utterance common ground on the speaker's perspective.
The question answered by the prejacent is weak according to (14c).

4.6 Metalinguistic commentary on discourse moves

Yet another place that *=to* occurs is in metalinguistic commentary on the discourse move itself. Suppose Bilal asks Anu whether he should give up his studies to start a job that would help support his family. Let us say that in Context 1, Anu understands Bilal's dilemma and appreciates that the resolution of the issue raised by Bilal's question is not obvious, given the facts that need to be factored in. Anu can now respond with (32a). The use of *=to* here signals the obviousness of the goodness/uptake-worthiness of CQ_c^S. In contrast, in Context 2, Anu has a definitive opinion on the matter: she thinks it makes absolutely no sense for Bilal to give up

his education, since continuing it would ensure a much better job in a year's time. A natural response (assuming Anu and Bilal are close to each other) might be (32b). Anu, at least on the surface, through negative evaluation, rejects Bilal's question as unworthy of deliberation.

(32) a. ye**=to** bəhut ət͡ʃt͡ʃʰa səval hɛ
this.NOM=*to* very good.M.SG.NOM question.NOM be.PRES.3.SG
This is (indeed) a very good question. (**Response to context 1**)
⇝*Response comments positively on the goodness of the discourse move.*

b. ye**=to** gəd^{h}e=jɛsa səval hɛ
this.NOM=*to* donkey.OBL=like question.NOM be.PRES.3.SG
This is a donkey-like (dumb) question. (**Response to context 2**)
⇝*Response comments negatively on the goodness of the discourse move.*

The responses in (32a) and (32b) reveal the intermediate steps between the raising of a question at a context and its resolution by an interlocutor. In an articulated discourse model such as Farkas & Bruce (2010), a question, as any discourse move, is placed on the conversational table and requires uptake or acceptance from all interlocutors before they can commit to resolving the question. One might say then that at any context c, for any question CQ_c^E that is placed on the conversational table, there is raised an auxiliary metalinguistic question q regarding the goodness/uptake-worthiness/relevance of CQ_c^E at the juncture of discourse it occurs in. The prejacents in (32a) and (32b) offer explicit answers to the question *Is Bilal's question an uptake-worthy question?*, with =*to* conveying, in each case, that the question has an obvious resolution (positive and negative respectively) in c.

5 =*to* across clause-types

In §3 and §4, we saw a range of effects associated with Hindi =*to* in declarative utterances, showing that each of these effects can be derived from analyzing the contribution of =*to* in terms of a single discourse function: =*to* comments on the weakness of the question that its prejacent resolves. Beyond declarative utterances, =*to* also occurs in imperative and interrogative clauses. This section shows that both the (constrained) distribution of =*to* and the implications its uses gives rise to in these clause types, fall out naturally from the analysis laid out in §3 in conjunction with a commitment-based view of sentential force (Condoravdi & Lauer 2012, Lauer 2013). On this perspective, the sentential force associated with a given clause type resides in the *commitments* that utterances of sentences of that clausal type induce, through conventions of use that are normative in a speech community. While declaratives conventionally commit their speakers to believe that the content of

the declarative is true, imperatives and interrogatives conventionally commit the speakers to a preference. A speaker who utters an imperative becomes committed to a preference for the content of the imperative to be realized. A speaker who utters an interrogative becomes committed to a preference for the addressee to commit themselves to one of the answers in the denotation of the interrogative (Lauer 2013: 162–63). An expression like *=to*, I will suggest, simply takes the denotation of the imperative or the interrogative (a proposition expressing a preference) as its input and conveys that this proposition answers only a weak question about the speaker's preferences.

5.1 *=to* in imperatives

There are at least three facts to be accounted for with respect to *=to* in imperatives: (a) *=to* must be hosted by a constituent that carries contrastive topic marking; (b) *=to* always has the discourse function of a downtoner, being uniformly translatable as *at least*; (c) the use of *=to* implies that the speaker believes it to be likely that expressing a preference for a proposition stronger than the prejacent may interfere with the preferences of some other agent. At an intuitive level, a speaker using *=to* in an imperative indicates that they have stronger preferences that they are not publicly committing to in the context given possibility of conflict with other agents' preferences or circumstances.[20]

The phenomenon can be illustrated with the examples in (33). Suppose that in the broader context Niśa is visiting Anu's family. It is mango season and Anu's mother has bought a big basket of mangoes. In (33a), *=to* is hosted by the subject constituent, which bears contrastive topic marking. In (33b),*=to* is hosted by the theme constituent (also marked as contrastive topic) and the contrastively marked verb is the host in (33c). In each case, *=to* signals that Anu's mother takes the prejacent to express an effective preference that is weaker than expected.

(33) a. **Context 1:** Anu's mother knows that Anu is allergic to mangoes and can't have them but she wants Anu to offer them to Niśa. Anu's mother tells her:

[niśa]$_{CT}$=ko=**to** ām do
niśa=DAT/ACC=*to* mango.NOM give.IMP

At least give [Niśa]$_{CT}$ some mango (if not others).
⇝*S indicates that they have a stronger preference that individuals besides Niśa receive mangoes but considers it possible that it may interfere with*

20 Examples: A mother telling her daughter: *At least do your English homework, (if not Math).*; A doctor telling a patient: *At least gargle with salt-water (if you don't want to take the medicine).*

A's preferences.

b. **Context 2:** Niśa has been visiting for a while and Anu hasn't offered her any food or beverage. Anu's mother says to Anu:

niśa=ko [ām]$_{CT}$**=to** do
niśa=DAT/ACC mango.NOM=*to* give.IMP

Give Niśa some [mango]$_{CT}$ at least (if nothing else).
⇝*S indicates that they have a stronger preference that Niśa be hosted with multiple offerings but considers it possible that it may interfere with A's preferences.*

c. **Context 3:** Anu is unsure if Niśa likes mangoes or not and is hesitant to offer her any. Anu's mother says:

niśa=ko ām [do]$_{CT}$**=to**
niśa=DAT/ACC mango.NOM give.IMP=*to*

At least [give]$_{CT}$ (offer) Niśa some mango (she doesn't have to eat any).
⇝*S indicates that they have a stronger preference that Niśa be given and enjoy consuming the mango but considers it possible that it may interfere with Niśa's preferences (Niśa may not like mango, for instance)*

Condoravdi & Lauer (2012) propose the following semantics for the imperative operator IMP, where $PEP_w(A, p)$ stands for 'The agent A is publicly committed at w to act as though p is a maximal element of A's effective preference structure.'[21]

(34) $[\![\text{IMP}]\!]^c = \lambda p[\lambda w\ [PEP_w(Sp, p)]]$

On this analysis, the imperative is understood to be an operator that applies to a proposition p and returns the proposition that is true at a world w iff the *Sp*eaker is publicly committed at w to act as though p is a maximal element of their effective preference structure. In directive uses, the content of the imperative is about an addressee action. For instance, in (35a) (and its Hindi counterpart), the imperative operator IMP applies to the proposition p which is true at exactly those worlds w in which the addressee gives Niśa the mango. The output is the proposition in (35b). Let us abbreviate this proposition as m.

21 Condoravdi and Lauer use the notion of a *preference structure* to model an agent's ranked preferences and require an *effective preference structure* to be a consistent partial order on preferences such that any two inconsistent preferences are strictly ranked relative to one another. A rational agent A at any world-time pair w is expected to have a distinguished, consistent preference structure. For any agent A and proposition p, $EP_w(A, p)$ stands for 'p is a maximal element of A's effective preference structure at w.' $PEP_w(A, p)$ represents $A's$ public commitment to this.

(35) a. Give Niśa the mango!

b. $[\![\text{IMP}(\text{Ad-give-N-the-mango})]\!]^c =$
$\lambda p[\lambda w\ [PEP_w(Sp, p)]](\lambda u[Ad \text{ gives N the mango in } u])$
$= \lambda w\ [PEP_w(Sp, \lambda u[Ad \text{ gives N the mango in } u])]$
$= \lambda w.\ m(w)$
= The set of those worlds w s.t. the speaker is publicly committed at w to act as though the addressee giving Niśa the mango is a maximal element of their effective preference structure.

In accounting for the distribution and interpretation of =*to* in imperatives we must take it to scope over IMP yielding the logical form as in (36a) and the meaning in (36b).

(36) a. =to(IMP(Ad-give-N-the-mango))

b. $[\![=\text{to}(\text{IMP}(\text{Ad-give-N-the-mango}))]\!]^c$
$= \lambda p \lambda w\ :\ p \in \text{CQ}_c\ \wedge\ \text{WEAK}_c(\text{CQ}_c).\ [p(w)](\lambda w'.\ m(w'))$
$= \lambda w\ :\ \lambda w'.\ m(w') \in \text{CQ}_c\ \wedge\ \text{WEAK}_c(\text{CQ}_c).\ [m(w)]$

The idea is that an imperative utterance answers the question *What are the speaker's effective preferences at context w?*[22] As discussed in §3.4, an utterance containing a contrastive topic (obligatory in imperative =*to*-containing sentences) must indicate a salient strategy of inquiry determined by the contrastive topic. The use of =*to* conventionally signals that the prejacent (the imperative proposition) answers a weak question relative to the context. So, a =*to*-containing imperative, with a contrastively-marked =*to*-host, always signals that the prejacent does not answer the strongest question in a strategy of inquiry determined by the contrastive topic constituent given the rules in (17). At any context, the question answered by the imperative pertains to the speaker's effective preferences – the realistic, consistent, action-guiding preferences that a speaker has at that context. By using =*to* in an imperative, the speaker signals that this question is weak – there is a salient strategy of inquiry, viz. one whose strongest question is *What are the speaker's preferences at context w?* and the question *What are the speaker's* ***effective*** *preferences at context w?* is a strict subquestion of that question. The effect is that the speaker is able to signal that their broader preferences are strictly stronger than the effective preference that they commit to using the imperative.

(33a) implies that according to Anu's mother, the strongest question in the salient strategy is *What are Anu's mother's preferences regarding mango-giving in the context?*. The question answered by the imperative is *What are Anu's mother's*

22 Or to put it more simply, with directive imperative uses: *All things considered, what does the speaker think the addressee should do at w?*.

effective *preferences regarding mango-giving in the context?* (33b) implies that according to Anu's mother, the strongest question in the salient strategy is *What are Anu's mother's preferences regarding how Niśa, a guest, should be treated in the context?*. The imperative answers the question only with respect to her effective preferences. (33c) implies that according to Anu's mother, the strongest question in the salient strategy is *What are Anu's mother's preferences regarding Niśa's mango-consumption experience?*. The imperative answers the question only with respect to her effective preferences.

If this is correct, then we can take =*to* in imperatives to allow a speaker to signal that what they really prefer is strictly stronger than what they commit to as their effective preference given other information in the context (including conflict with addressee preferences). A clear prediction of this way of treating the interaction between =*to* and imperative meaning is that =*to* should be unacceptable in uses of imperatives for giving permission or making concessions, such as those seen in (37).

(37) a. Ok, go out and play. (Condoravdi & Lauer 2012: 39)

b. Ok, go to Paris since you want it so much! (Condoravdi & Lauer 2012: 43)

c. Sure, come see me at half-past three if you want.

In this class of uses, the speaker communicates that they recognize a desire that the addressee has and have no objection to the realization of that desire. According to Condoravdi & Lauer, permissions arise when the following pre-conditions are in place: (i) the addressee has a preference for the content p and (ii) there is some q which is incompatible with p such that the speaker is committed to an effective preference for q. The imperative utterance indicates a change in the speaker's effective preferences, such that p is now ranked above q. In concession uses, the speaker retains their previous (non-effective) preference against the realization of the content of the imperative, even though their effective preferences have changed, possibly under pressure from the addressee (Condoravdi & Lauer 2012: 50). In either of such contexts, if =*to* were to be used, it would convey that the speaker has preferences that are strictly stronger than the effective preference that they have expressed using the imperative. However, any speaker, in making concessions and giving permissions, has had to alter their pre-utterance effective preference structure in order to accommodate the addressee's preferences despite their own preference for something incompatible with this. It follows that the speaker's preferences do not include anything strictly stronger than the effective preference they commit themselves to using the imperative. =*to* is correctly ruled out in these uses of imperatives.

5.2 =*to* in interrogative clauses

There are two facts to be accounted for with respect to =*to* in interrogatives: (b) In polar interrogatives, =*to* functions as a downtoner and is uniformly translatable as *at least* in positive interrogatives; (b) =*to* cannot appear in *wh*-interrogatives. We will look at both observations in turn, but only offer a possible solution to the first one.

5.2.1 Polar interrogatives

Just as with imperatives, =*to* in polar interrogatives, (a) must be hosted by a constituent that carries contrastive topic marking; and (b) always has the discourse function of a downtoner. Its use, moreover, gives rise to an implication that the speaker is biased "against" the highlighted proposition p in the sense that they have low confidence in p being true given evidence in the context.[23] On the other hand, its use also gives rise to an implication that the speaker is biased "towards" the highlighted proposition p in the sense that they have greater confidence in p being true at that context than propositions strictly stronger than p. Intuitively, a speaker using =*to* in an interrogative $?p$ conveys that they seek to confirm the truth of p despite contextual evidence suggesting $\neg p$, and that they have an expectation that no strictly stronger proposition than p is true at c.[24,25]

The phenomenon can be illustrated with the examples in (38). Assume the following context: Anu is back from a school event where all children were supposed to perform little musical pieces. Anu's little sister Deepa was also scheduled to perform. Anu tells Bilal that many children were shy and didn't want to perform or didn't perform well. This is a context in which there is evidence (Anu's report) suggesting *Deepa did not sing the song*. Bilal may respond with the minimally

23 The notion of highlighting is used to identify the semantic objects, specifically possibilities or propositions, that are made particularly salient through an utterance of the sentence (Roelofsen & Farkas 2015).

24 Sudo (2013) offers a feature-based construal of bias encoded in polar interrogatives distinguishing between *epistemic bias*, which is about the speaker's private beliefs/expectations, and *evidential bias*, which has to do with evidence publicly available in the conversational context that could lead to beliefs be shared among all discourse participants. If a polar interrogative $?p$ or $?\neg p$ is incompatible with contextual evidence for p, it carries positive evidential bias; if it is incompatible with contextual evidence for $\neg p$, it carries negative evidential bias. If a polar interrogative $?p$ or $?\neg p$ carries an implication compatible with p based on what the speaker believes/expects/desires, it carries positive epistemic bias. If a polar interrogative $?p$ or $?\neg p$ carries an implication compatible with $\neg p$ based on what the speaker believes/expects/desires, it carries negative epistemic bias.

25 That the use of =*to* in polar interrogatives conveys bias towards the highlighted proposition is supported by the fact that =*to*-containing interrogative clauses can never co-occur with the neutral clause-final polar question particle *kya* (Bhatt & Dayal 2020). It may occur optionally with the clause-final biased question particle *na*.

different interrogatives in (38a)-(38c), each highlighting the proposition *Deepa sang the song*. In each case, the question conveys that Bilal has an expectation that questions strictly stronger than the one asked are likely to receive a negative answer.[26]

(38) a. [Deepa]$_{CT}$=ne=**to** gānā gā-yā?
Deepa=ERG=*to* song.M.SG.NOM sing-PERF.M.SG
Did at least Deepa sing the song? (even if no one else did?)
⇝ *Bilal expects that a stronger question like* ***Did Deepa sing and x P?*** *for some other child x and property P is likely to have a negative answer.*

b. Deepa=ne [gānā]$_{CT}$=**to** gā-yā?
Deepa=ERG song.M.SG.NOM=*to* sing-PERF.M.SG
Did Deepa sing the song at least? (even if she did nothing else)
⇝ *Bilal expects that a stronger question like* ***Did Deepa sing the song and do x?*** *for some performative piece x is likely to have a negative answer.*

c. Deepa=ne gānā [gā-yā]$_{CT}$=**to**?
Deepa=ERG song.M.SG.NOM sing-PERF.M.SG=*to*
Deepa did sing the song, right? (she might not have even sung)
⇝ *Bilal expects that a stronger question like* ***Did Deepa sing the song at a high level of expertise?*** *is likely to have a negative answer.*

=*to* is licensed in polar interrogatives in precisely those contexts in which the publicly available evidence suggests that even the highlighted proposition might be false, let alone stronger propositions. When used, =*to* allows the speaker to convey that they have minimally the expectation/desire that the highlighted proposition be true, if not any strictly stronger proposition. The question is: How can the conventional contribution that we have associated with =*to* be deployed to bring about the effect seen in (38)?

I describe the basic outline of a solution here. (Lauer 2013: 162-164) sketches out an analysis that integrates interrogative clauses into a unified theory of form–force mapping. Restricting ourselves to polar interrogatives, the idea is that through an utterance of an interrogative ?p, the speaker commits to an effective preference for the addressee to be committed to one of the possible answers in ?p. That is, the speaker requests that the addressee commit to one of the possible answers to their question. One might take the denotation of the interrogative operator, in the fashion

26 I gloss over the different flavors of epistemic bias that can be conveyed in polar interrogatives using =*to* in the interest of brevity. The full exploration of these effects deserves a separate paper-length treatment.

of the imperative operator defined in §5.1, as in (39).[27] The operator in (39) applies to a proposition p and returns the proposition that is true at a world w iff the *Sp*eaker is publicly committed at w to act as though they have a preference that the *Ad*dressee publicly commit to a belief (*pb*) in one of the answers to their question.

(39) $[\![\text{INT}]\!]^c = \lambda p[\lambda w\ [PEP_w(Sp, \exists p' \in \{p, \neg p\} : pb_{Ad}(p'))]]$

The highlighted proposition from the examples in (38) – *Deepa sang the song* – is abbreviated as d. And the output of the interrogative is notated $\lambda w\ [PEP_w(Sp, ?d)]$.

(40) a. Did Deepa sing the song?

b. $[\![\text{INT}(\text{D-sang-the-song})]\!]^c =$
$\lambda p[\lambda w\ [PEP_w(Sp, \exists p' \in \{p, \neg p\} : pb_{Ad}(p'))]](d)$
$= \lambda w\ [PEP_w(Sp, \exists p' \in \{d, \neg d\} : pb_{Ad}(p'))]$
$=$ The set of those worlds w such that the speaker is publicly committed at w to act as though they have an effective preference that the addressee publicly commit to a belief in one of the two propositions: d or $\neg d$.
$= \lambda w\ [PEP_w(Sp, ?d)]$

In accounting for the interpretation of *=to* in interrogatives, we take it to scope over INT yielding the logical form as in (41a) and the meaning in (41b).

(41) a. =to(INT(Deepa-sang-the-song))

b. $[\![\text{=to}(\text{INT}(\text{Deepa-sang-the-song}))]\!]^c$
$= \lambda p \lambda w\ :\ p \in \text{CQ}_c \wedge \text{WEAK}_c(\text{CQ}_c).\ [p(w)](\lambda w\ [PEP_w(Sp, ?d)])$
$= \lambda w\ :\ \lambda w\ [PEP_w(Sp, ?d)] \in \text{CQ}_c \wedge \text{WEAK}_c(\text{CQ}_c).\ PEP_w(Sp, ?d)]$

As expected, *=to* does not make any truth-conditional contribution; it simply conveys that its prejacent, the proposition expressed by the interrogative, answers a weak question. What does it mean for an interrogative utterance to provide an answer to a question? I suggest that in many cases, a polar interrogative may be an answer to a contextually salient question like *What are the speaker's preferences at context w with respect to what the addressee should answer?* Or informally: *What does the speaker want the addressee to commit to?*. If the prejacent of *=to* is a polar interrogative, and *=to* is hosted by a contrastively-marked host, this will obligatorily signal that the prejacent does not completely answer this question – the speaker's interrogative only answers a subquestion of the broader question of what they want the addressee to commit to.[28] Now, in what sort of context would a speaker refrain

27 To be clear, this lexical entry is not directly proposed by Lauer; it is a possible implementation, parallel to what is proposed in Condoravdi & Lauer (2012).

28 As discussed in §3.4, an utterance containing a contrastive topic (obligatory in interrogative *=to*-containing sentences) must indicate a salient strategy of inquiry determined by the contrastive topic. Given the rules in (17), the use of *=to* here signals that the prejacent does not answer the strongest question in a strategy of inquiry determined by the contrastive topic constituent.

from providing a complete answer to a question about their preference regarding what they want the addressee to commit to *while explicitly revealing that they are doing so*? The only sort of context that I can imagine for choosing to do this is a "low-expectation" context. This is a context in which there is publicly available evidence suggesting that the highlighted proposition might be false, but a positive answer for stronger propositions is even more unlikely. This leads the speaker to employ a strategy in which the truth of the weaker (highlighted) proposition is sought to be established before establishing the truth of a stronger proposition. This is precisely the sort of context in which =*to* occurs in polar interrogatives.

This brief outline allows us to begin to make sense of the uniform effect of =*to* in these contexts. But it is necessarily a beginning that only points to the possible direction in which one must go to study interactions between =*to* and the conventional effects associated with interrogative clauses.

5.2.2 Wh-interrogatives

Enclitic =*to* cannot be used in wh-interrogatives with canonical word-order. This generalization excludes echo-questions (*A: Deepa=**to** sang a song. B: WHO=**to** sang a song?*) but includes rhetorical questions (*Who in their right mind would say something like that?*). Consider this context: Anu is back from a school event where all children were supposed to perform little musical pieces. Anu's little sister Deepa was also scheduled to participate. Bilal can ask Anu the questions in (42), both of which are infelicitous with =*to*, regardless of where it is hosted – on the contrastive topic constituent, the wh-element, or the verb.

(42) a. [Deepa]$_{CT}$=ne(**#=to**) kya(**#=to**) gā-yā(**#=to**)?
Deepa=ERG=*to* what sing-PERF.M.SG
What did Deepa sing #at least?

b. kis=ne(**#=to**) [gānā]$_{CT}$(**#=to**) gā-yā(**#=to**)?
Who=ERG song.M.SG.NOM=*to* sing-PERF.M.SG
Who sang the song #at least?/Who sang #at least??

There doesn't seem to be an obvious reason why this restriction holds. Given the proposal for polar interrogatives here, there is nothing to rule out a speaker using =*to* to convey that the wh-interrogative only offers a partial answer to the contextually salient question: *What does the speaker want the addressee to commit to?*. If one really wants to know the answer to *Who sang what?*, one should be able to ask *What did Deepa=to sing?*. But one cannot. And this is not an idiosyncratic fact about Hindi. Languages that contain markers that have functions overlapping with =*to* (Japanese -*wa*, Korean -*nun*, German *doch*), also disallow it from appearing in

wh-interrogatives, suggesting that this is a more general puzzle about the interaction between the relevant meanings; something to be left for further investigation. I only note here one possible direction towards a solution. I said in §5.2.1 that a partial answer to the question *what does the speaker want the addressee to commit to?* is only felicitous in a "low-expectation" context, where publicly available evidence suggests that a negative answer to the interrogative is possible. If we assume that a wh-interrogative carries an existential presupposition that at least one of its answers is true, then all answers in the denotation of a wh-interrogative must be positive answers. That is, the wh-interrogative presupposes that there is no negative answer. There is no context such that it both allows for a negative answer (a condition for *=to*) while satisfying the wh-interrogative's existential presupposition. Therefore, *=to* cannot be used with wh-interrogatives.

6 Concluding remarks

The main claim throughout this paper has been that Hindi *=to* should be analyzed as a discourse-management expression that comments, not on the strength of the prejacent relative to a fixed current question, but rather on the strength of the question that the prejacent addresses. In declaratives, the questions *=to* comments on can be both explicit and implicit, accessed often only through intonational evidence and the discourse effects of their answers. In its metalinguistic uses, *=to* responds to implicit questions about uptake-related properties of prior discourse moves. In imperatives and polar interrogatives, assuming that these clause types denote propositions pertaining to speaker preferences, *=to* conveys that the speaker is only partially revealing what they prefer the addressee to do (in imperatives) and to commit to (in interrogatives).

If this treatment of *=to* is on the right track, then we expect to find, across languages, lexicalized discourse-managing strategies for commenting on the strength of explicit and implicit questions that guide discourse. I believe we may find evidence for such strategies if we take a closer look at the distribution of the well-studied and comparable particles *-wa* in Japanese and *-nun* in Korean (Tomioka 2010a,b), and possibly *doch* in German (Rojas-Esponda 2014b, Bayer 2020). It has been observed for Japanese *-wa* that it can be used to offer partial answers in not only classic B-accent contexts (*[Fred]$_B$ ate the [beans]$_A$.*) but also in sentences where the only accented element is *-wa* marked (*(At least) Ken passed; The car costs (at least) $25,000*). Tomioka (2010a) describes contexts (including imperatives) where *-wa* seems to have a downtoning function like *at least*. Kuroda (2005) and Kuno (1972) provide a range of data that shows that the (thematic) topic *-wa* has a contribution that cannot be considered contrastive at all but has to do with the discourse status of the proposition in which *-wa* occurs. Kim (2018) focuses on the contrastive uses

of accented *-nun* in Korean, suggesting that unaccented *-nun* may involve weak implicit contrast but is not obviously unifiable with accented *-nun*. The literature on Japanese/Korean topic marking particles is vast (in stark contrast to Hindi!) and it is impossible to review it and compare the two languages with Hindi here. But the possibility that the clustering of uses found in Hindi (and Indo-Aryan) may have resonance in genetically unrelated languages suggests that the variety of functions observed may be amenable to a unified semantics of the sort proposed here.

Within the Indo-European family, we might also consider the Russian particle *-to* that McCoy (2003) (among others) describes as both marking contrastive topics and conveying that the speaker assumes that the prejacent is known to the hearer but not activated in their mind. In closing, I mention German *doch*, for which Rojas-Esponda (2014b) offers a QUD-based analysis. On her account, unfocused *doch* signals that a current QUD was, in fact, previously closed. In many cases, the use of *doch* conveys, very much like Hindi =*to*, that the speaker takes the prejacent proposition to be part of the common ground. Bayer (2020) offers a comparison between the Bangla discourse particle =*to* (likely cognate to the Hindi particle) and German *doch*, revealing a surprising convergence in their syntactic and semantic/pragmatic properties. German *doch* is not analyzed as having contrastive topic marking function in the way that Hindi =*to* and Japanese/Korean *-wa/-nun* are. But its effects bear clear resemblance to the effects associated with =*to* attached to deaccented hosts. Regardless of the variation, these tantalizing similarities across languages seem to be enough reason to explore whether introducing a discourse function such as "commenting on the strength of a contextually salient question" might offer us further insight into both the crosslinguistic workings of discourse particles and the discourses they guide.

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