

Overt and Covert Subjects in Uyghur: Not the same thing

Xiang Li & Paul Portner*

Abstract. Overt nominative-marked indexicals in Uyghur attitude reports are known to undergo obligatory shifting and trigger matching agreements. This paper challenges the prevailing view that the covert subject is parallel to its overt nominative counterpart. We evaluate several hypotheses that consider covert subjects to be true indexicals, but we find that none of them can fully explain all the observed readings. Drawing inspiration from previous studies on null subject licensing in Partial Null Subject languages, we suggest that the covert subject in Uyghur functions as an anaphor, while the overt subject is an indexical. The recognition of their differences opens up the possibility of associating Uyghur covert subjects with other non-indexical elements, thereby contributing to our understanding of indexical shift.

Keywords. covert subject; overt subject; anaphor; indexical shifting; Uyghur

1. Introduction. While Kaplan (1989) points out that indexicals such as *I* and *you* should always be interpreted relative to the utterance discourse context, recent research has shown that in many languages the denotations of indexical pronouns can also depend on the reported context. This phenomenon, known as *indexical shift*, has been identified in a number of different languages, including Zazaki, Turkish, Nez Perce, Slave (see Deal 2020 for a more comprehensive list of languages). In this paper, we especially focus on the shifty interpretation of 1st-person pronouns in Uyghur, providing an alternative analysis for overt and covert embedded subjects in (1).

- (1) a. Ali [men ket-tim] di-di.
 Ali 1SG.NOM leave-PAST.1SG say-PAST.3SG
 SHIFTED: ✓ ‘Ali_i said that he_i left.’
 NONSHIFTED: ✗ ‘Ali said that I_{speaker} left.’ (Sudo 2012)
- b. Ali [*pro* ket-tim] di-di.
 Ali *pro* leave-PAST.1SG say-PAST.3SG
 SHIFTED: ✓ ‘Ali_i said that he_i left.’
 NONSHIFTED: ✗ ‘Ali said that I_{speaker} left.’

Notice that the 1st-person nominative-marked pronoun in (1a) can only be interpreted as the matrix subject *Ali* and triggers matching agreement on the embedded verb. Similarly, the covert subject in (1b) also undergoes obligatory shifting and exhibits 1st-person, singular agreement on the embedded verb. The apparent similarities between the two elements in (1a) and (1b) may lead to the assumption that the *pro* argument controlling the matching agreement in the embedded clause is a shifted indexical, analogous to the overt nominative pronoun. However, challenges to such an analysis arise in examples where two indexical arguments are introduced, as in (2).

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- (2) a. Ali Aygül-ga [men seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✗ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ (Sudo 2012)
- b. Ali Aygül-ga [*pro* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ (Sudo 2012)

In (2a), the overt nominative subject and the direct object must shift together, but the same object in (2b) has no shiftability constraint with the presence of the covert subject. In other words, it is possible to have both a shifted and an unshifted indexical within the same intensional domain when the subject is covert, as indicated by the availability of the second reading in (2b). The exceptions to ‘Shift Together’ effects pose a challenge to the previous assumption that covert subjects are parallel to their overt nominative counterparts. To maintain the original claim, it becomes necessary to account for the unexpected violations to Shift Together effects in (2b). In Section 2, we examine and reject several hypotheses that consider covert subjects to be true indexicals because they fail to provide an adequate explanation for all attested readings. Inspired by previous work on the distribution of 3rd-person covert subjects in Partial Null Subject languages, Section 3 elucidates the nature of Uyghur covert and overt subjects by positing the former as an anaphor and the latter as an indexical. Section 4 concludes the discussion and raises potential issues for future research.

2. Null Subject as Indexical: Possible Approaches. This section examines three approaches to indexical shifting and shows that each of these analyses encounters problems.

2.1. VARIABLE-BINDING THEORY. As previously noted, Kaplan (1989) made a famous conjecture that indexicals are always interpreted relative to the actual context of utterance, without the presence of an operator to manipulate the context parameter and induce shifted interpretations. However, Schlenker (1999, 2003) raises empirical evidence against Kaplan’s conjecture by claiming that shifted interpretations of indexicals can be found in languages like Amharic. For example, in the context of (3), the 1st-person feature can refer to either *John* or the speaker of the entire sentence.

- (3) John [jiəgna ləmin n-ññ] yil-all?
 John hero why COP.PRES-1S says-3SM
 SHIFTED: ✓ ‘Why does John_i say that he_i is a hero?’
 NONSHIFTED: ✓ ‘Why does John say that I_{speaker} am a hero?’ (Amharic, Schlenker 1999)

To account for the data above, Schlenker puts forth a radical departure from the Kaplanian conjecture. Schlenker’s theory introduces the concept of a context variable within each sentence and suggests that attitude predicates can bind and shift the context variable in their complement. According to this theory, indexical pronouns can be linked to any context variable that c-commands them, while adhering to language-specific constraints. For example, a rigid indexical like *I* in English never shifts because it is inherently linked to the root-level context variable. Conversely, an optionally shifting *I* in Amharic is underspecified regarding the context variable it associates with, resulting in both shifted and unshifted readings in (3).

Return now to the Uyghur data. As stated in Section 1, the direct object can either shift or remain unshifted in the presence of the covert subject. Schlenker’s variable-binding theory offers a promising explanation for the two possible interpretations of the direct object, as represented by the first two readings in (4). Nevertheless, it remains unclear why the covert subject must shift, leading to the unavailability of the last two readings in (4).

- (4) Ali Aygül-ga [*pro* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül that he_i likes you_{addressee}.’
 EXCEPTION TO ST: ✗ ‘Ali told Aygül_j that I_{speaker} like her_j.’
 NONSHIFT TOGETHER: ✗ Ali told Aygül that I_{speaker} like you_{addressee}.’ = (2b)

In addition, the variable-binding theory fails to explain the Shift Together effects in sentences with overt nominative subjects, with the example repeated in (5).

- (5) Ali Aygül-ga [men seni jaxshi kör-i-men] di-d-i.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES-1SG say-PAST-3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✗ ‘Ali_i told Aygül that he_i likes you_{addressee}.’
 EXCEPTION TO ST: ✗ ‘Ali told Aygül_j that I_{speaker} like her_j.’
 NONSHIFT TOGETHER: ✗ Ali told Aygül that I_{speaker} like you_{addressee}.’ = (2a)

Given that the shifting of each pronoun is independent of any others, the sentence is predicted to be four-way ambiguous. However, only one reading is attested in which both indexicals shift together. Some might argue that both the covert and the overt nominative indexicals *I* in Uyghur are lexically specified to be evaluated exclusively against the reported context, leading to obligatory shifting for both. However, this raises the intriguing question of why the identical direct objects in (4) and (5) demonstrate contrasting behaviors regarding their propensity for shifting. Given the absence of significant differences between the objects across contexts, it remains puzzling why only the object in sentences with overt nominative subjects is compelled to undergo shifting. For these reasons, the variable-binding theory proves inadequate as an analysis of Uyghur indexical shifting data.

2.2. ‘SHIFT-ALL’ OPERATOR THEORY. Another line of research on indexical shifting, pioneered by Anand & Nevins (2004) and Anand (2006), and more recently adopted by Sudo (2012) and Deal (2020), proposes that the shifting operator is independent of the attitude predicates. This approach draws motivation from the Shift Together effects initially observed in Zazaki, as illustrated in the example below:

- (6) Vizeri Rojda Bill-ra va ke [ez to-ra miradiša].
 Yesterday Rojda Bill-to said that I you-to angry.be-PRES
 SHIFT TOGETHER (ST): ✓ ‘Yesterday Rojda_i said to Bill_j that he_i is angry at him_j.’
 NONSHIFT TOGETHER: ✓ ‘Yesterday Rojda said to Bill that I_{speaker} am angry at you_{addressee}.’
 EXCEPTION TO ST: ✗ ‘Yesterday Rojda said to Bill_j that I_{speaker} am angry at him_j.’
 EXCEPTION TO ST: ✗ ‘Yesterday Rojda_i said to Bill that he_i is angry at you_{addressee}.’
 (Zazaki, Anand & Nevins 2004)

Given that Zazaki optionally shifts all indexicals under the verb *vano* ‘say’, the introduction of

two indexicals, namely ‘I’ and ‘you’, would be expected to give rise to four possible outputs. However, Anand and Nevins (2004) show that both indexicals must pick up reference from the same context: either both undergo shifting (the first reading) or both remain unshifted (the second reading). This observation can be readily explained within the framework proposed by Anand and Nevins, where a ‘shift-all’ operator (OP_V) is introduced. This operator shifts all indexicals within its scope by overwriting the context parameters. As such, the presence of indexical shift in one instance implies the presence of the ‘shift-all’ operator, and hence other indexicals within its scope must also shift.

Now let us return to the Uyghur data. The presence of the Shift Together effects in sentences with overt nominative subjects, as repeated below in (7), suggests that Uyghur also includes the ‘shift-all’ operator. It follows that the shift-together reading observed in sentences with covert subjects, as shown in (8), can also be accounted for by treating covert and overt nominative subjects in a similar manner. However, violations of Shift Together effects in the second reading of (8) still remains a problem and additional stipulations are necessary to explain the unshifted interpretation of the direct object in sentences with covert subjects.

- (7) Ali Aygül-ga [OP_V men seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✗ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2a)

- (8) Ali Aygül-ga [? OP_V *pro* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2b)

In Section 2.2.1 and Section 2.2.2, we examine two potential amendments to the ‘shift-all’ operator theory and demonstrate their inadequacy in resolving the puzzle at hand.

2.2.1. ‘SHIFT-ALL’ OPERATOR AND CASE. In addition to the nominative case, Uyghur also allows subjects of finite complement clauses to be marked with accusative case. Unlike nominative-marked subjects, accusative-marked subjects never shift. To explain this shifting patterns, Major (2022) proposes that the ‘shift-all’ operator is in complementary distribution with accusative embedded subjects, as demonstrated by the contrast in (9).

- (9) a. Ali [OP_V men ket-tim] di-di.
 Ali 1SG.NOM leave-PAST.1SG say-PAST.3SG
 SHIFTED: ‘Ali_i said that he_i left.’ (Major 2022)
- b. Ali [\emptyset meni ket-ti] di-di.
 Ali 1SG.ACC leave-PAST.3SG say-PAST.3SG
 NONSHIFTED: ‘Ali said that I_{speaker} left.’ (Major 2022)

One notable implication of Major’s proposal is that it predicts contrasting shifting patterns in sentences with two arguments, based on whether the embedded subject bears nominative or accusative case. In cases where the embedded subject is assigned nominative case, both the subject and the direct object must shift together. Conversely, when the embedded subject is assigned accusative case, the operator is not selected, and both indexicals must remain unshifted, leading to

the Nonshift Together effects. This prediction is supported by the contrast demonstrated in (10).

- (10) a. Ali Aygül-ga [OP_V men seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER: ‘Ali_i told Aygül_j that he_i likes her_j.’
- b. Ali Aygül-ga [∅ meni seni jaxshi kör-idu] di-di.
 Ali Aygül-DAT 1SG.ACC 2SG.ACC well see-PRES.3SG say-PAST.3SG
 NONSHIFT TOGETHER: ‘Ali told Aygül that I_{speaker} like you_{addressee}.’

Given that the presence or absence of the operator can trigger different interpretations of the direct object, one could argue that the covert subject in (8) has the potential to bear either nominative case or accusative case. If so, when the covert subject bears accusative case, the operator would not be selected, resulting in the unshifted reading of the direct object as seen in the second reading of (8). However, there are two pieces of evidence against the idea that the covert subject in examples like (8) bears accusative case. Firstly, the covert subject exclusively receives a shifted reading, as evidenced by the unavailability of the last two readings in (11) below. If the covert subject had the ability to bear accusative case, the unshifted interpretations seen in the third and the fourth readings of (11) would have been acceptable, contrary to the fact.

- (11) Ali Aygül-ga [*pro* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül that he_i likes you_{addressee}.’
 EXCEPTION TO ST: ✗ ‘Ali told Aygül_j that I_{speaker} like her_j.’
 NONSHIFT TOGETHER: ✗ ‘Ali told Aygül that I_{speaker} like you_{addressee}.’ = (2b)

A second reason why the covert subject in (8) cannot bear accusative case is that it solely triggers matching 1st-person agreement. If the covert subject were capable of bearing accusative case, one would expect it to trigger invariable 3rd-person agreement as observed in (10b). While the 3rd-person agreement can be elicited in certain instances, such as (12), it is worth noting that the covert subject in this context refers to a third party, a reading which lies outside the scope of this paper.

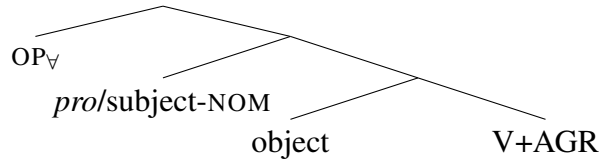
- (12) Ali Aygül-ga [*pro* seni jaxshi kör-idu] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.3SG say-PAST.3SG
 OBJECT SHIFT: ✓ ‘Ali_i told Aygül_j that he_{*i/*j/k} likes her_j.’
 OBJECT NONSHIFT: ✓ ‘Ali_i told Aygül_j that he_{*i/*j/k} likes you_{addressee}.’

From the discussion above, it becomes evident that exceptions to the Shift Together effects observed in (8) cannot be adequately explained by assuming that the covert subject may bear accusative case. Instead, the covert subject, if deemed an indexical, can only bear nominative case and the sentence in (8) should contain the ‘shift-all’ operator. This conclusion prompts us to consider a theory that can explain the unshifted reading of the direct object even in the presence of the context-shifting operator.

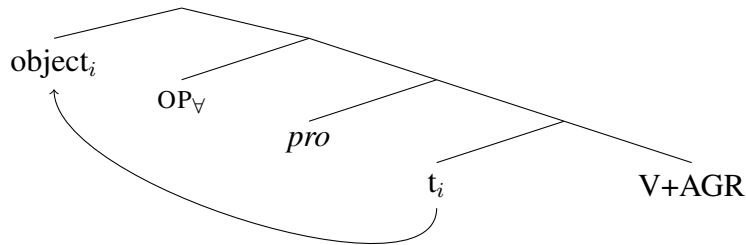
2.2.2. ‘SHIFT-ALL’ OPERATOR AND MOVEMENT. Assuming that sentences with the covert subject always contain the operator, an alternative approach to achieve the second reading in (8) is to suggest that the direct object has the ability to raise above the operator. As a result, the direct

object would no longer fall under the scope of the operator, allowing it to receive an unshifted interpretation. This proposal aligns with the argument put forth by Sudo (2012), who argues that the direct object in the first reading of (8) obtains the shifted interpretation by remaining below the operator, as illustrated in (13a). Conversely, in the second reading where it does not shift, the object scrambles to a position higher than the operator, as depicted in (13b). The corresponding structures regarding the structural position of the object are depicted in the following tree diagrams. It is worth noting that when the subject bears nominative case, the object must remain below the operator as illustrated in (13a), thus obeying the ‘Shift Together Constraint’.

(13) a.



b.



(Sudo 2012)

Despite its intuitive appeal, evidence from scope facts undermines the possibility of the direct object moving above the operator at LF. To illustrate, let us consider the sentence below in (16):

(14) SCENARIO 1: Every year, Ali hosts an annual birthday celebration at his house and invites his friends to join in the party. Ali knows that Aygül likes Yusup, but he only showed up once. Interestingly, it wasn't until last year that Ali noticed Erkin's presence at the party – an unexpected surprise. And this year, Ali saw Erkin at the party again. Ali knows that Aygül also likes Erkin, so he shared this information with Aygül. I heard their conversation and I report this to you: ✓ Reading 1; but ✗ Reading 2

(15) SCENARIO 2: Every year, Ali hosts an annual birthday celebration at his house and invites his friends to join in the party. Ali knows that Aygül likes Yusup, but he only showed up once in the past year. Interestingly, this year Ali noticed Erkin's presence at the party – an unexpected surprise. Ali knows that Aygül likes both Yusup and Erkin, so he shared this information with Aygül. I heard their conversation and I report this to you: ✓ Reading 2; but ✗ Reading 1

- (16) Ali Aygül-ga [*pro* [*sen* jaxshi kör-idi-ghan] bir-kim-ni mening
 Ali Aygül-DAT *pro* 2SG.NOM well see-IMPF-REL one-who-ACC 1SG.GEN
 tughulgan kün yighilish-m-ning ichi-i-da saq ikki qëtim
 birth day party-1SG.POSS-GEN inside-3SG.POSS-LOC exactly two time
 kör-dim] di-di.
 see-PAST.1SG say-PAST.3SG
- READING 1: ‘Ali_i told Aygül_j that he_i saw someone she_j likes at exactly two of his_i birth-
 day parties.’ (someone ≫ exactly two)
- READING 2: ‘Ali_i told Aygül_j that at exactly two of his_i birthday parties, he_i saw someone
 she_j likes.’ (exactly two ≫ someone)
- READING 3: ‘Ali_i told Aygül that he_i saw someone you_{addressee} like at exactly two of
 my_{speaker} birthday parties.’ (someone ≫ exactly two)
- READING 4: ‘Ali_i told Aygül that at exactly two of my_{speaker} birthday parties, he_i saw
 someone you_{addressee} like.’ (exactly two ≫ someone)

The introduction of two quantifiers, namely *someone* and *exactly two*, in (16) makes the sentence scopally ambiguous: either the same person was seen exactly twice (someone ≫ exactly two) or different individuals were seen on exactly two distinct occasions (exactly two ≫ someone). In addition, there is a potential ambiguity due to the shifting of the indexical *sen* in the direct object phrase and the indexical *mening* in the adverbial phrase. They can either shift together or remain unshifted, giving rise to four possible outputs.

Let us consider the first two readings where both overt indexicals undergo shifting. While the sentence in (16) can be judged as true in both scenarios presented in (14) and (15), Reading 1 is only true within the discourse scenario described in (14), whereas Reading 2 is true within the discourse scenario outlined in (15). Note that the presence of the non-monotonic quantifier *exactly two* ensures that the two readings are independent of each other and each reading is available in an appropriate context. The same principle also applies to Reading 3 and Reading 4 in (16), where both overt indexicals remain unshifted.

Among the four attested readings in (16), the shifted interpretation of the indexical *sen* in the first two readings indicates that the entire object phrase here should be positioned below the operator. Similarly, the shifted reading of the indexical *mening* suggests that the adverbial phrase is also merged below the operator. If, according to Sudo’s analysis, the direct object could undergo movement to a position above the operator to receive the unshifted interpretation, it would be expected that the unshifted object could, at least in some cases, take scope over the adverbial phrase which contains a shifted pronoun and is located below the operator. However, this prediction is not supported by any observed readings as the two overt indexicals show Shift Together restrictions. One might argue that the existence of the last two readings in (16) implies that the adverbial can also move above the operator to receive the unshifted interpretation. However, such movement is implausible for two reasons. Firstly, considering that the context-shifting operator is already positioned at the clause boundary (e.g., Anand & Nevins 2004; Deal 2020), moving the adverb would place it in an even more peripheral position, which is not a typical adverb placement. Secondly, it remains puzzling for this view why neither the object nor the adverbial can move alone above the operator. Thus, additional constraints would be required to explain why the movement of either the object or the adverbial above the operator would require that the other move as well. For these reasons, we contend that an analysis based on the movement of the direct

object fails to account for the violation of Shift Together effects observed in sentences with covert subjects. Overall, the discussion above suggests that the ‘shift-all’ operator theory is not a viable option.

2.3. DIFFERENT SHAPES OF OPERATORS. Recall from Section 2.2 that the introduction of the ‘shift-all’ operator was motivated by the Shift Together effects observed in Zazaki. However, the situation is different in Slave, where only 1st-person indexicals undergo shifting while 2nd-person indexicals in the complement clause must remain unshifted. This can be illustrated by the following example in (17).

- (17) Simon [rasereyneht’u] hadi.
 Simon 2SG.HIT.1SG SAY.3SG
 ‘Simon_i said that you_{addressee} hit him_i. (Slave, Anand & Nevins 2004)

To account for shifting patterns described above, Anand and Nevins (2004) put forth an additional proposal that languages may contain operators that only shift certain indexicals. In the context of Slave, they introduce the context-shifting operator OP_{auth} , which rewrites only the author coordinate of the context parameter. The operator will set the author coordinate of the context parameter to the attitude holder, resulting in the shifted interpretation of only the 1st-person indexical in (17).

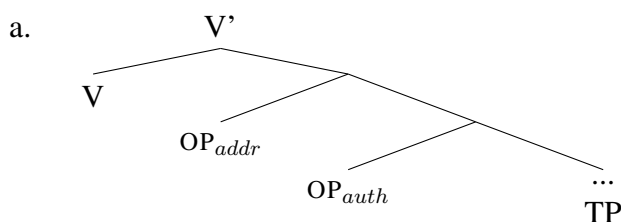
The theory that postulates the existence of different shapes of operators is quite promising, as the partial indexical shift observed in Slave exhibits several similarities with exceptions to Shift Together effects identified in Uyghur. Nonetheless, in the subsequent subsections, we investigate two potential adaptations to this theory and illustrate their inability to fully explain all of the Uyghur indexical shifting data.

2.3.1. PERSON-BASED OPERATORS. Having established that different shapes of operators can be selected, Deal (2020) further extends this idea by proposing the existence of two distinct shifty operators in Uyghur – OP_{auth} and OP_{addr} – each responsible for a simple modification of context:

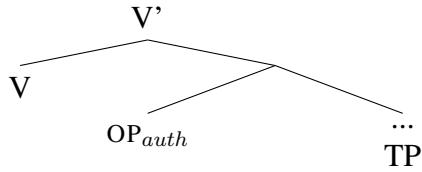
- (18) Uyghur Shifty Operators (Deal 2020)
- a. $\llbracket OP_{auth} \rrbracket^{c,i,g} = \lambda p \in D_{\langle \kappa, \kappa t \rangle}. p(i) (c^{Auth_i/Auth})$
 - b. $\llbracket OP_{addr} \rrbracket^{c,i,g} = \lambda p \in D_{\langle \kappa, \kappa t \rangle}. p(i) (c^{Addr_i/Addr})$

Given that within and across languages, the possibility of indexical shift is determined by the hierarchy $1st > 2nd$, Deal further argues that OP_{addr} occupies a higher position than OP_{auth} when the two co-occur. In this case, a clause projected only up to OP_{auth} will show shift only with respect to AUTHOR, whereas a clause projected past OP_{auth} up to OP_{addr} will show shift both with respect to AUTHOR and with respect to ADDRESSEE. The structures corresponding to variations in the precise size of the attitude complements are depicted below in (19).

- (19) Two sizes of attitude complements in Uyghur (person-based operators)



b.



(Deal 2020)

Now return to the Uyghur sentences with covert and overt nominative subjects in (2), repeated below in (20).

- (20) a. Ali Aygül-ga [men seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✗ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2a)
- b. Ali Aygül-ga [pro seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT pro 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2b)

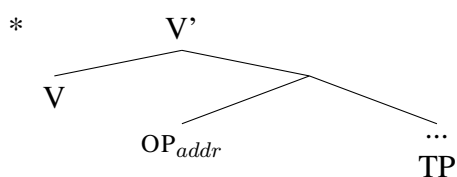
In Uyghur, it is possible for attitude complements to include a full suite of operators, yielding total indexical shift as in structure (19a). This corresponds to the Shift Together effects found in sentences with overt nominative subjects, as demonstrated in (20a). When the embedded subject is covert, the structure in (19a) is also possible, resulting in the first reading in (20b), where both 1st-person and 2nd-person indexicals undergo shifting. However, attitude complements can also feature OP_{auth} only, resulting in the shifting of 1st-person indexicals only, as illustrated in (19b). This corresponds to the second reading in (20b), where the 2nd-person object receives the nonshifted interpretation due to the absence of a suitable person shifter at the edge of the finite clause. It is essential to note that additional conditions must be imposed to prevent the structure in (19b) from being a viable option in sentences with overt nominative subjects.

While the person-based operator theory proposed by Deal provides a satisfactory explanation for the pattern observed in (20), especially regarding the shifting asymmetries in (20b), certain challenges emerge when examining additional data. Here is an example that has not been previously reported:

- (21) Ali Aygül-ga [pro meni jaxshi kör-isen] di-di.
 Ali Aygül-DAT pro 1SG.ACC well see-PRES.2SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that she_j likes him_i.’
 EXCEPTION TO ST: ✓ ‘Ali told Aygül_j that she_j likes me_{speaker}.’

In (21), the agreement on the embedded verb indicates that the silent pronominal subject in the lower clause is a 2nd-person pronoun. The derivation of the first reading proceeds straightforwardly, where two operators, namely OP_{auth} and OP_{addr} , are present in the left periphery, as exemplified in (19a). Consequently, both the covert subject and the overt direct object exhibit shifty behavior. Also possible is a reading where only the 2nd-person subject undergoes shifting, while the 1st-person direct object does not. The availability of this reading suggests that the attitude complement in Uyghur includes OP_{addr} only, yielding the shift of 2nd-person indexicals only, as depicted in (22).

(22) A structure in violation of functional sequencing:

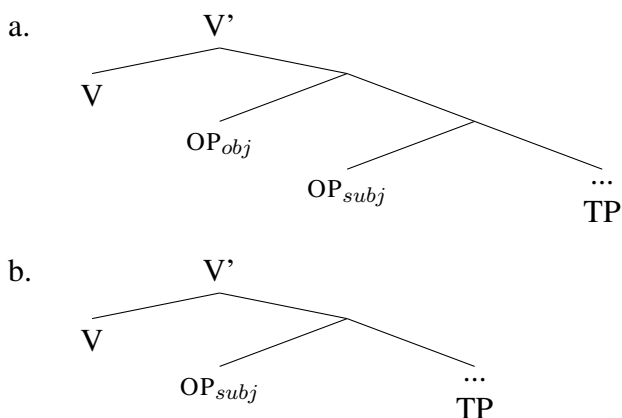


(Deal 2020)

However, the structure above is unexpected according to Deal’s ‘person-based operator’ theory. According to this theory, shifty operators are functional elements that are known, through decades of syntactic research (Zamparelli 1995; Rizzi 1997; Cinque 1999), to occupy rigid “functional sequences” in which one type of element asymmetrically command another type of element. Consequently, a shifter may only be present in a structure if those lower than it in the sequence are also present. Given that OP_{addr} must universally occur higher than OP_{auth} , it is impossible for attitude complements to contain OP_{addr} only, without the lower operator OP_{auth} in the sequence. Thus, we reject the person-based operator theory as an explanation for the Uyghur data as well.

2.3.2. POSITION-BASED OPERATORS. Now that we have seen that a theory needs to be generous enough to allow the violation of person indexical shifting hierarchy, one plausible approach to address this issue is by introducing position-based operators, denoted as OP_{subj} and OP_{obj} . After all, the examples provided in both (20b) and (21) indicate that the shiftability of indexicals is not determined by their person features but rather closely related to their syntactic positions. Specifically, covert subjects always shift, while overt direct objects can be interpreted as either shifting or non-shifting. To capture the shifting asymmetries between subject and object indexicals, one could propose that OP_{obj} occupies a higher position than OP_{subj} . Consequently, an attitude complement utilizing these ‘position-based’ operators may come in either of the following two variants:

(23) Two sizes of attitude complements in Uyghur (position-based operators)



When an attitude complement incorporates both operators as in (23a), indexicals in both subject and object positions receive shifted readings. This corresponds to the first reading of examples such as (2b) and (21), repeated below in (24) and (25) respectively. An additional possibility is that attitude complements involve OP_{subj} only as in (23b), yielding the shift of the subject indexical only. This corresponds to the second reading of both examples below.

(24) Ali Aygül-ga [*pro* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT *pro* 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✓ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2b)

(25) Ali Aygül-ga [*pro* meni jaxshi kör-isen] di-di.
 Ali Aygül-DAT *pro* 1SG.ACC well see-PRES.2SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that she_j likes him_i.’
 EXCEPTION TO ST: ✓ ‘Ali told Aygül_j that she_j likes me_{speaker}.’ = (21)

The main advantage of the position-based operator view is that it allows for the shiftability of an indexical to be independent of the person feature it bears, and instead rely on its syntactic position. Yet it is precisely for this reason that the position-based operator view runs into trouble. One crucial problem is that it remains unclear how an operator that manipulates context parameters could target the indexical in a specific position. Another problem relates to the Shift Together effects in sentences with overt nominative subjects, with the example repeated below in (26).

(26) Ali Aygül-ga [*men* seni jaxshi kör-imen] di-di.
 Ali Aygül-DAT 1SG.NOM 2SG.ACC well see-PRES.1SG say-PAST.3SG
 SHIFT TOGETHER (ST): ✓ ‘Ali_i told Aygül_j that he_i likes her_j.’
 EXCEPTION TO ST: ✗ ‘Ali_i told Aygül_j that he_i likes you_{addressee}.’ = (2a)

The fact that only the first reading is attested suggests that the sentence in question must select two operators as in (23a). Therefore, if the position-based operator approach is adopted, we need additional constraints to explain why OP_{subj} and OP_{obj} cannot be separated in sentences featuring overt nominative subjects. One potential explanation is to propose that OP_{subj} and OP_{obj} are always bundled together in such sentences but can be separated when the subject is *pro*-dropped. However, this proposal lacks a concrete explanation for the inability of sentences with overt nominative subjects to select a single OP_{subj} . Hence, it is constructive to reconsider the feasibility of the analysis and seek an alternative account.

2.4. SUMMARY. So far, we have examined three different approaches to indexical shifting, each encountering challenges in explaining the unexpected violations of the Shift Together effects found in sentences with covert subjects. Specifically, the variable-binding theory can explain the two possible readings of the direct object in sentences with covert subjects, but it fails to explain why both covert and overt subjects undergo obligatory shifting, as well as why overt indexicals in sentences with nominative subjects must shift together. While the ‘shift-all’ operator proposed by Anand and Nevins provides a satisfactory account for the Shift Together effects, neither of the two potential modifications adequately explains the exceptions to Shift Together effects in sentences with covert subjects. Additionally, although different shapes of operators may offer explanations for the partial indexical shift in languages like Slave, both person-based and position-based operators fail in some way to account for all the observed data in Uyghur. Taken together, the constellation of data presented above leads us to conclude that constructions involving a shifted covert subject and an unshifted direct object are unexpected if we consider the covert element to be a true shifted indexical. Then the next question to ask is: what is the nature of the covert subject? And is there a different way to account for the apparent shifted interpretation of the covert subject? These questions will be discussed in Section 3.

When the overt subject bears accusative case, the operator is no longer selected (Major 2022) and hence both the subject and the direct object in the embedded clause must remain unshifted, as shown in (30).

- (30) Ali Aygül-ga [\emptyset meni seni jaxshi kör-idu] di-di.
 Ali Aygül-DAT 1SG.ACC 2SG.ACC well see-PRES.3SG say-PAST.3SG
 NONSHIFT TOGETHER: ‘Ali told Aygül that I_{speaker} like you_{addressee}.’ = (10b)

To sum up, by analyzing the covert subject as an anaphor that is controlled by its antecedent in a higher clause, we can account for its seemingly shifted interpretation, as well as its immunity to the absence of the operator. In this case, exceptions to Shift Together effects observed in sentences with covert subjects can be perfectly accommodated within the previous theory regarding the optional selection of the operator in Uyghur.

4. Conclusions and Remaining Issues. The current paper set out to describe and analyze the interpretation of covert and overt subjects in Uyghur attitude reports. While it may initially appear plausible to treat the covert subject as parallel to its overt nominative counterpart, considering their shared characteristics of obligatory shifting and triggering matching agreement, we argue that treating the covert subject as an indexical is not the right direction to account for its shifty behavior. To support this stance, we analyze three main theories of indexical shifting and demonstrate their inability to fully account for the exceptions observed in sentences with covert subjects. Consequently, Uyghur overt and covert embedded subjects should be treated differently.

Building upon existing research on other PNS languages, we propose that the covert subject in Uyghur is an anaphor that is controlled by the attitude holder in the higher clause. This analysis elucidates why the presence or absence of the context-shifting operator has no impact on the interpretation of covert elements. This contrasts with the overt nominative counterpart, which functions as a true indexical. As a result, the shifted interpretation of the overt nominative subject diagnoses the presence of the operator and hence the direct object in the same clause must also shift, giving rise to the Shift Together effects. It is important to note that the theory that recognizes both anaphors and shifted indexicals in Uyghur does not contradict the existing theory regarding the optional selection of the operator in Uyghur (Major 2022). Rather, it accommodates this theory by providing a more nuanced explanation for the counterexamples where the Shift Together effects do not hold.

The recognition of the anaphor in Uyghur attitude reports also brings up intriguing empirical and theoretical considerations for future research. One notable issue involves the control pattern observed in sentences with covert subjects. Since the Uyghur covert subject is controlled by the antecedent in the higher clause, the control exhibited in such sentences appears to bear similarities to English PRO-control. However, preliminary data (Li & Portner to appear) has suggested that the control of covert subjects in Uyghur finite clauses exhibits a greater degree of freedom than PRO-control, and this aligns with the control patterns observed in canonical PNS languages like Finnish. Therefore, future work is needed to explore the nature of control in Uyghur finite clauses.

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