The semantics of specificity-marked indefinites: Evidence from Algerian Arabic [1]

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Abstract. In this paper, I argue that specificity-marked indefinites function as referential expressions rather than existential quantifiers. Introducing a novel test, I demonstrate that they systematically lack all forms of existential readings—including narrow scope, wide scope, intermediate scope, and existential quantification over Skolem functions—while instead contributing reference to either individuals or Skolem functions. Based on these observations, I propose a semantics for specificity markers such as Algerian Arabic *el* ('the') and English *certain*, analyzing them as extreme domain restrictors. I then evaluate the implications of this analysis within both a classical existential generalized quantifier approach to indefinite determiners and a choice function approach.

Keywords: Indefinites, definite descriptions, scope, referential expressions, domain restriction, determiners.

1. Introduction

This paper investigates the semantic behavior of specificity-marked indefinites, with a special focus on Algerian Arabic (AA) *waħed+el* ('one+the') DPs and English *a+certain* DPs. Specifically, I examine their similarities to definite descriptions when judged in contexts that make available multiple potential referents rather than a single *salient* referent. I employ a novel test that shows that the interpretability of sentences containing specificity-marked indefinites like definite descriptions are sensitive to the *saliency* of the referent in the discourse context, differing greatly from existential quantifiers. This finding aligns with Schwarz's (2001, 2011) observation that all indefinite DPs are not of the same kind and challenges the widely held thesis that all indefinites can receive the same analysis (Reinhart, 1997; Kratzer, 1998; Winter, 2001; Kratzer and Shimoyama, 2002 among others).

Currently, the semantics of indefinite DPs has been analyzed in two main ways: (i) Existential quantifier Theories, inspired by Russell (1905) and treat all indefinite DPs as contributing existential quantifiers—either ranging over individuals, as in the classical existential generalized quantifier analysis (Montague, 1973), or over (Skolemized) choice functions, as in Reinhart (1997) and Winter (1997, 2001, 2004). (ii) Speaker-Oriented Theories that attribute the special scope behavior of all indefinite DPs to referentiality in a sense to be made clear later (Fodor and Sag, 1982; Kratzer, 1998; Schwarzschild, 2002). Based on the results of referentiality tests, I argue that a uniform analysis of indefinite DPs should incorporate a flexible system capable of handling both meanings. Specifically, I propose that referentiality arises from the semantic contribution of specificity markers, such as *el* in Algerian Arabic and *certain* in English. I provide a semantics for these markers that predicts referential interpretations when they are present and existential interpretations when they are absent.

[1] I would like to thank Orin Percus, Hamdia Demirdache, Maribel Romero, Florian Schwarz, Anamaria Fălăus and the entire SynSem audience at LLING (Nantes Université) and Sinn Und Bedeutung 29 audience for their valuable comments and feedback.

This paper is organized as follows: **Section 2** introduces and situates the data under investigation. **Section 3** presents the referentiality test and applies it to both AA *waħed+el* and English *a+certain* DPs. **Section 4** provides a compositional account for both *waħed+el* and *a+certain* DPs. **Section 5** discusses the implications of this analysis for indefinites unmarked for specificity. **Section 6** concludes the paper.

2. The puzzle

The standard analysis of indefinite DPs takes them to contribute an existential generalized quantifier over individuals. However, as is well known, this analysis faces a serious issue: constituents that are scope islands for almost all quantifiers do not seem to behave as such for indefinite DPs. For example, there are readings of sentences like (1) that seem to admit a paraphrase as in (1b). Deriving the meaning as in (1a), treating AA *waħed* 'one' as a existential quantifier, would involve raising the quantifier out of a scope island. Fodor and Sag (1982) investigate the possibility that these apparent wide scope existential readings are not due to a quantifier interpretation of the indefinite determiner but rather due to a referential interpretation like that of the name in (2).

(1) *kun j.ɣib waħed el ustad Reda j.rawh.*
if be.absent.3SG.M one the teacher Reda leaves.3SG.M
'If a certain teacher is absent, Reda will leave'.
a. [wahəd el ustad] λ_2 [kun [t_2 jɣib] [Reda j.rawh]]
b. There is a teacher x such that if x is absent, Ali will go home.

(2) *kun j.ɣib ustad Jamel Reda j.rawh.*
if be.absent.3SG.M professor Jamal Reda leaves.3SG.M
'If professor Jamal is absent, Reda will leave'.

Kratzer (1998) also assumes that wide scope readings of indefinites are due to a referential use. More specifically, however, Kratzer takes an indefinite determiner like English *a* (or AA *waħed*) to contribute a variable ranging over a choice function. Kratzer assumes that the value of the choice function variable is determined by the speaker. Thus, according to Kratzer, the apparent wide scope existential reading of the sentence in (1) actually derives from a structure like (3a) below where *f* is a choice function.

(3) *kun j.ɣib waħed el ustad Reda j.rawh.*
if be.absent.3SG.M one The teacher Reda leaves.3SG.M
'If a certain teacher is absent, Reda will leave'.
a. kun jɣib *f* [ustad], Reda j.rawh.
'If the teacher that *f* chooses is absent, Reda will leave, where the value of *f* is determined by the speaker '.

Reinhart (1997), Winter (1997) among others also assume that indefinite determiners like English *a* contribute a choice function. However, on their approaches, the value of the choice function variable is not determined by the speaker as Kratzer assumes. Instead, it is existentially closed at a level higher than that of the clause that the indefinite belongs to. Thus, according to

them, a sentence like (1) actually has a meaning that amounts to (1b). This meaning derives from the structure in (4a), which literally expresses what is written in (4b) below.

(4) *kun j.ɣib waħed el ustad Reda j.rawh.*
if be.absent.3SG.M one the teacher Reda leaves.3SG.M
'If a certain teacher is absent, Reda will leave'.
a. ∃*f* kun jɣib *f* [ustad], Reda j.rawh.
b. There is a CF *f* such that if the teacher that the choice function *f* chooses is absent, Reda will leave.

In contrast to the cited literature, Schwarzschild (2002) defends the existential generalized quantifier analysis. According to Schwarzschild, the meaning that (1b) aims to characterize comes about when the speaker has in mind some extra unpronounced material. The role of the unpronounced material is to further restrict the domain of quantification of the existential quantifier to a singleton set containing an individual that the speaker has in mind, as shown in (5) below. When this happens, the contribution of the existential quantifier does not affect the referential nature of the indefinite. Also, with this kind of extra unpronounced material, whether the indefinite DP takes scope above or below the conditional operator *if* doesn't affect the truth conditions of the sentence.

(5) *kun j.ɣib waħed el ustad* ***howa ustad Jamal*** *Reda j.rawh.*
if be.absent.3SG.M one the teacher who.is professor Jamal Reda leaves.3SG.M
'If a certain teacher *identical to professor Jamal* is absent, Reda will leave'.

The theories of indefinite DPs are now in a situation where the problematic wide scope reading can be accounted for in several ways. However, these approaches can be divided into two groups: on the one hand, approaches that take indefinite DPs to contribute existential quantifiers (over individuals or choice functions) and on the other hand, speaker-oriented analyses that take indefinite DPs to be referential expressions (Fodor and Sag, 1982; Kratzer, 1998; Schwarzschild, 2002)[2]. The obvious question is thus the following: is there a way to distinguish between existential readings and referential readings of indefinites? This question carries over to other types of sentences that involve indefinite DPs. Let us consider the sentence in(6) below from AA, inspired by English counterparts first considered by Chierchia (2001).

(6) *tfol$_j$ ma jakrah waħed el mra toqrob-l-o$_j$.*
Kid neg hates one the woman relative-to-him
'No kid hates a certain female relative of his'.

Note first that this type of sentence lacks a narrow scope existential reading according to which *no kid hates any female relative of his.* Furthermore, the natural interpretation of this sentence cannot be attributed to a wide scope existential reading under the classical existential quantifier approach, as the pronoun *o* behaves like a variable bound by the higher quantifier. Instead, this type of sentence exhibits the so-called functional reading of indefinites (Hintikka, 1986; Kratzer, 1998; Schwarz, 2001; Winter, 2001; Ionin, 2010). This reading can be *true* if *no boy*

[2] Fodor and Sag (1982) differ from both Kratzer (1998) and Schwarzschild (2002) in that they take indefinite DPs to be ambiguous between referential and quantificational readings.

hates, say, his mother, even if there are boys who hate some other female relatives. Note that the functional reading cannot be attributed to any scope position that an existential quantifier ranging over individuals or choice functions can take at LF. Winter (2001) claims that the semantics that accounts for such a meaning involves wide scope existential quantification over skolemized choice functions as in (7) below.[3] Another possibility, due to Kratzer (1998), is that functional readings involve reference to skolemized choice functions as in (8). Schwarzschild (2002) attributes the meaning to unpronounced material involving a bound variable pronoun as shown in (9) below.

(7) ∃ *f* [tfol ma [t_1 jakrah *f* (1) [mra toqrob -l -o_1]
   a. There is a choice function *f* such that no kid x hates the individual that *f* (x) chooses out of the set of x's female relatives.

(8) tfol ma [t_1 jakrah *f* (1) [mra toqrob -l -o_1]
   a. No kid x hates the individual that *f* (x) chooses out of the set of x's female relatives, where the value of *f* is determined by the speaker.

(9) No kid hates a female relative identical to the individual who gave birth to him.

As is the case for wide scope readings, it seems that functional readings can either be attributed to existential quantification over skolemized functions (Winter 2001) or reference to skolem functions as in Kratzer (1998) and Schwarzschild (2002)[4]. The same question arises: is there a way to distinguishing between referential and existential interpretations?

Furthermore, it seems that the same question comes up when considering more complicated sentences that involve an indefinite DP occurring within a scope island and containing a pronoun bound by a higher quantifier.[5] Consider the AA sentence in (10) below that represents such a syntactic configuration.

(10) *tfol$_j$ ma jareb kol makla deret.ha wahəd el mra toqrob-l-o$_j$.*
kid NEG tried every dish made.it one the woman relative-of-him
'No kid tried every dish a certain female relative of his made'.

[3] Schwarz (2001) shows that such a meaning wrongly predicts that the sentence has the meaning we would obtain with a narrow scope universal quantifier. Schwarz (2011) suggests that this problem can be amended by assuming that in LFs like (7a), the choice function variable ranges over the so-called natural functions, excluding arbitrary functions from its domain. Henceforth, this is what I will be assuming when I talk about wide scope existential quantification over skolemized choice functions.

[4] I assume that Schwarzschild imagines that the functional readings comes about when an existential quantifier over individuals whose silent restrictor could be seen as a constituent where a skolem function applies to a variable bound by the subject. Both Schwarzschild and Kratzer imagine the value of the function to be attributed by the speaker.

[5] Sentences that do not involve a bound variable pronoun are also said to contribute intermediate scope existential readings (cf. Abusch 1994). Here I consider cases that involve a bound variable pronoun in order to isolate intermediate scope readings and functional readings without the possibility of wide scope readings getting in the way of such a comparison. Note also that the use of indefinites marked for specificity eliminates the possibility of a narrow scope reading getting in the way of the comparison.

Sentence like (10) are said to give rise to an intermediate scope existential reading. The idea is that a possible paraphrase is as in (11) below. One could account for a reading of this kind with a structure where an existential quantifier contributed by the indefinite (*wahəd el mra*) takes scope above the universal quantifier in whose restrictor it appears (*kol makla*) but below the negative quantifier in subject position (*tfol ma*).

(11) For no boy *x*, is there some *y* such that *y* is a female relative of *x* and *x* tried every dish *y* made.

However, such a structure would involve movement out of a scope island (the clause in which the indefinite originates), leading theories to derive the reading through alternative mechanisms. The original choice function analysis (Reinhart, 1997; Winter, 1997) allows existential quantification over choice functions below the topmost quantifier (12). Kratzer (1998), Schwarzschild (2002), and Winter (2004) attribute intermediate scope readings to functional interpretations, with Kratzer and Winter relying on Skolemized choice functions (differing in whether the variable is existentially closed or free) **Error! Reference source not found.**). Schwarzschild (2002) instead posits unpronounced material containing a bound variable pronoun (14).

(12) For no boy *x* can one find a choice function *f* such that *x* tried every dish *f* (female relative of *x*) made.

(13) (There is a choice function *f*) such that no boy x tried every dish that the individual that *f* (x) chooses out of the set of x's female relatives made.

(14) No boy tried every dish an individual identical to the woman he loves most made.

To sum up, I showed above that the range of readings available to indefinite DPs can be accounted for in several ways. Inspired by Fodor and Sag's (1982) analysis, which treats indefinite DPs as ambiguous between a quantificational meaning and a referential one, one can view the development of theories of the scope of indefinites as following one of two main paths: (i) Russellian theories, which posit that all indefinite DPs involve existential quantification (Russell, 1905; Montague, 1973; Reinhart, 1995, 1997; Winter, 1997, 2001 among others) and (ii) referential approaches, which treat all indefinite DPs as referential expressions (Fodor and Sag, 1982; Kratzer, 1998; Schwarzschild, 2002). In the next section, I propose a test that has the ability to distinguish between these theories.

3. Testing referentiality

In the following section, I argue that existential and referential meanings can be truth-conditionally distinguished. Specifically, in cases where a proposition contains existential quantification over individuals or functions, one does not have to identify a particular verifying entity in the domain in order to judge the sentence to be *true*. By contrast, in cases where a proposition contains a referential expression, one does need to be able to identify the particular entity that is concerned.

3.1. Reference to entities

Consider the sentence in (16) in the context (C1) sketched (15) in below:

(15) Context C1
Reda has had a difficult time with three professors: his advisor, Professor Hob, who dismissed his ideas; Professor Nob, who took credit for students' work; and Professor Sib, who was unfairly biased against him. All of Reda's friends know he cannot stand being in the same room as any of them. One of his friends says:

(16)

kun	*waħed*	*el*	*ustad*	*jʒi*	*l*	*el*	*hafla*	*Reda*	*j.rawh.*
if	one	the	teacher	comes.SG.M	to	the	party	Reda	leaves.3SG.M

'If a certain teacher comes to the party, Reda will leave'.

When speakers of AA are presented with this type of sentence in a context like C1, that make available multiple individuals that can verify the sentence, they can neither judge the sentence *true* nor can they judge it *false*. The judgement is rather one of *uncertainty*. Thus, a sentence like (16) is considered *unevaluable* in a context like C1. Note that the same intuition carries over to the English translation with *a+certain*.[6]

Now, let us consider the same sentence in a slightly modified version of C1 (call it C2). In C2, the number of teachers that Reda is not on good terms with is exactly one:

(17) Context C2
Reda has had a difficult time with his advisor, Professor Hob, who dismissed his ideas. All of Reda's friends know he cannot stand being in the same room as him. One of his friends says (10).

When speakers are presented with the sentence in (16) in a context like C2, where exactly one entity verifies the sentence, they can easily judge it as *true*. The question then arises: what semantics for specificity-marked indefinites can account for our sensitivity to the number of entities that can verify the sentence? To address this, let us consider the possible meanings proposed by various semantic theories of indefinite DPs.

First, let us examine the meanings that involve wide scope existential quantification over individuals or choice functions. Note that these meanings are *true* iff there is a teacher x (or a choice function that choses one) such that if x comes to the party, Reda will leave. Such a meaning is undoubtedly *true* in contexts like C1 and C2. I conclude that the inability to interpret (16) as *true* in C1 cannot be explained by existential meanings.

Let us now consider the meanings that involve reference to an individual. In context C1, these meanings are *true* iff the referent is one of the professors that Reda cannot stand being in the same room with (either Hob, Nob or Sib). However, in context C2, these meanings are *true* iff the referent is Reda's advisor (Professor Nob).

[6] English speakers seem to be slightly more open to judging sentences with *a+certain* as *true* in contexts like (C1) than Algerian Arabic speakers. Some speakers of English suggest that their reluctance to give a plain *true* judgment stem from *uncertainty* about the exact claim being made.

In C1, the inability to evaluate the sentence by the informants can be explained by the failure to recover the referent of the specificity-marked indefinite, given that the context presents more than one potential entity and no particularly salient one. This claim is further supported by the facility to judge these sentences as *true* in contexts like C2, where there is exactly one teacher that can verify the sentence, thus contributing to its saliency.

Thus, I take the *truth* judgments of sentences containing specificity-marked indefinites as evidence in favor of analyses that treat them as referential expressions. The inability to judge these sentences as *true* in the absence of a salient referent finds a straightforward explanation within a speaker-oriented approach, which can relate this judgment to the inability to recover the referent. By contrast, Russellian existential analyses cannot account for this solely through semantics.[7]

3.2. Testing intermediate scope readings

Let us now examine whether specificity-marked indefinites contribute intermediate scope existential readings. To answer this, consider sentence in (19) below, in the context (C3) sketched in (18):

(18) Context C3
There are three kids under discussion: Ali, Ahmed and Reda. We are at a dinner at which all three kids are present. Each of them has brought dishes cooked by his two favorite female relatives. However, the kids decided to put the dishes they brought aside to try them later. At this point, each of the kids has tried dishes other people brought, but none of the dishes cooked by their relatives.

(19) *tfol$_j$ ma jareb kol makla deret.ha wahəd el mra toqrob-l-o$_j$.*
kid neg tried every dish made.it one the woman relative-of-him
'No kid tried every dish a certain female relative of his made'.

As with sentences like (16) above, when Arabic and English speakers evaluate (19) in context C3, they do not judge it as clearly *true* or *false*. Instead, their judgment is one of *uncertainty*. Recall that I have pointed out in the previous section that the theories of specificity-marked indefinites can be grouped into *existential* and *referential* accounts. Let us first consider existential readings within the context (C3). These readings involve either existential quantification with intermediate scope, where the quantification is over individuals or choice functions, or wide scope existential quantification over Skolem functions. For clarity, context (C3) can be schematized as in (20), where each set represents a child's favorite female relatives. Later, I will use underlining to represent individuals whose dishes were already tasted. Since, in C3, there is no female relative whose dishes were tried, I will not underline any individual below.

[7] See Ludlow and Neale (1991) for a respond to Fodor and Sag arguing that indefinites can have a referential use but not a referential interpretation.

(20) Ali: { R1, R2 }
Ahmed: { R3, R4 }
Reda: { R5, R6 }

Intermediate scope existential readings are clearly true in (C3) since it is true that, *for no boy can one find a female relative of his (or a choice function selecting one) whose dishes he tried*. If such a reading were available for (19), one would expect the sentence to be to be judged *true* in (C3). Since this is not the case, I take this as evidence that specificity marked indefinites lack an intermediate scope existential reading.

Now, let us consider wide scope existential quantification over Skolem functions. This meaning is true *if there exists a Skolem function mapping boys to female relatives such that no boy tried every dish made by the relative assigned to him*. Since no boy tried any dish made by any female relative, (19) is clearly true in C3. Again, if such a reading were available for this type of sentence, one would expect the sentence to be judged *true* in C3. Since this is not the case, I conclude that a sentence like (19) also does not give rise to a reading with wide scope existential quantification over Skolem functions.

Moreover, the fact that (19) remains *unevaluable* in (C3) indicates that specificity-marked indefinites lack a narrow scope existential reading. Note that a narrow scope reading along the lines of *no boy tried every dish made by a female relative or another* is *true* in a context like C3. Since (19) is not judged *true* in C3, I conclude that it lacks a narrow scope existential reading as well.

Recall that both Kratzer (1998) and Schwarzschild (2002) treat all intermediate scope readings as functional readings. However, they go further by arguing that these meanings do not involve existential quantification over functions but rather reference to a specific function.

I argue that the sentence in (19) is considered unevaluable in (C3) because its interpretability crucially depends on the recoverability of a function from the discourse context. When multiple functions could verify the sentence, but none is uniquely salient, speakers struggle to assign a truth value to a sentence containing a specificity-marked indefinite. The absence of a salient function in (C3) is schematized in **Error! Reference source not found.**) below by illustrating the number of functions that could determine which female relative's dishes were tried, without any single function standing out:

(21) $\left\{ \begin{array}{l} f(\text{Ali}) = \text{R1} \\ f(\text{Ahmed}) = \text{R3} \\ f(\text{Reda}) = \text{R5} \end{array} \right\}$ or $\left\{ \begin{array}{l} g(\text{Ali}) = \text{R2} \\ g(\text{Ahmed}) = \text{R3} \\ g(\text{Reda}) = \text{R5} \end{array} \right\}$ or $\left\{ \begin{array}{l} h(\text{Ali}) = \text{R2} \\ h(\text{Ahmed}) = \text{R4} \\ h(\text{Reda}) = \text{R6} \end{array} \right\}$ …

This claim is further supported by the observation that (19) is judged *true* in (C4) which differs from (C3) in that only one function verifies the sentence.

(22) Context C4
The same three children are at the dinner, each having brought dishes cooked by two female relatives. However, this time, each child has tried all the dishes made by one of their relatives underlined below, but none of those made by the other. The function *f* below yields for each boy, the female relative whose dishes he didn't try.

(23) Ali: { R1, **R2** } $\left\{ \begin{array}{l} f(\text{Ali}) = \text{R1} \\ f(\text{Ahmed}) = \text{R4} \\ f(\text{Reda}) = \text{R5} \end{array} \right\}$
Ahmed: { **R3**, R4 }
Reda: { R5, **R6** }

Thus, I conclude that the referentiality test strongly suggests that specificity-marked indefinites lack all forms of existential readings (narrow scope, wide scope, intermediate scope, and existential functional readings). Instead, their behavior is best explained by invoking reference to individuals or functions, as argued by Fodor and Sag (1982), Kratzer (1998), and Schwarzschild (2002).

In the next section, I propose an implementation of this idea for AA *wahəd+el* DPs and English *a+certain* DPs, inspired by Schwarzschild's (2002) singleton indefinites approach. I argue that extreme domain restriction to a singleton set, argued for by Schwarzschild, is not implicit in these cases but morphologically signaled by the presence of the definite determiner *el* or the NP modifier *certain* within the indefinite DP.

4. A singleton indefinite approach to specificity-marked indefinites

4.1. A compositional semantics for *wahəd+el* DPs

I propose a singleton indefinite approach for *wahəd+el* DPs under which (i) *wahəd* is an indefinite determiner with the classical existential quantifier meaning $\lambda f_{<e,t>}. \lambda g_{<e,t>}. \exists x [f(x) \& g(x)]$; (ii) the phrase with *el* that *wahəd* combines with is a definite description on its predicative reading (Strawson, 1950; Fara, 2001; Coppock and Beaver, 2015); (iii) *el* is a definite marker that marks the predicate that it attaches to as a singleton by imposing a uniqueness presupposition : $[\![\textit{el}]\!] = \lambda P_{<e,t>} : |P| = 1. P$.

Consider again the example in (1) repeated here as (25). When *el* combines with its sister, it imposes a uniqueness presupposition. This can be achieved by assuming extra unpronounced material that *ustad* ('teacher') combines with. Taking this material to contain a variable, *el* combines with […pro_2 ustad] interpreted as follows: $[\![\ldots pro_2 \text{ ustad}]\!]^g = \{x: x \text{ is a teacher and } x \text{ is } g(2)\}$. Consequently, $[\![\text{el} \ldots pro_2 \text{ ustad}]\!]^g$ is defined only if g(2) is a teacher, and when defined, $[\![\text{el} \ldots pro_2 \text{ ustad}]\!] = \{ g(2) \}$. Put differently, *el ustad* contributed a characteristic function of a singleton set in (24) below.

(24) $[\![\textit{el ustad}]\!]^g = \lambda x_e.$ x is g(2)
Presupposition: g(2) is a teacher

Supposing that *wahəd el ustad* has scope within the antecedent of the conditional as in (25a), the semantics in (25b) obtains. Note that this analysis implies in particular that, in order to recover the meaning of the sentence, one has to recover a value for the silent variable. Thus, in context where no salient value for the variable is available, the sentence is uninterpretable. In this way, I claim that I correctly derive the meaning of the sentence in (25) while respecting locality constraints on quantifier scope.

(25) *kun j.ɣib waħed el ustad Reda j.rawh.*
if be.absent.3SG.M one the teacher Reda leaves.3SG.M
'If a certain teacher is absent, Reda will leave'.
a. kun [[wahəd el ustad] λ_2 [t_2 jɣib] [Reda j.rawh]]
b. If some x identical to g(2) is absent, Reda will leave.
Presupposition: g(2) is a teacher.

Furthermore, I argued based on the example in (19) that *wahəd+el* DPs contribute reference to functions and not existential quantification over functions. Specifically, one can imagine that they give rise to readings that involve reference to skolem functions of type <e,e>. Thus, in a parallel way to what I just suggested for *el ustad* in (1), I propose that the functional reading in (19) comes about when the NP *mra toqrob.l.o* 'woman that is related to him' is conjoined with a silent predicate containing a free function variable and a bound individual variable. This is shown in the structure in (26) below. In such a configuration, the restrictor [*el* [… F_8 pro_1] *mra Toqrob-l-o$_1$*]], is interpreted as follows: ⟦ el … **F_8 pro_1** *mra toqrob-l-o$_1$* ⟧^{g} is defined iff ⟦ F_8 pro_1 ⟧^{g} is a female relative of g(1); when defined ⟦ el … **F_8 pro_1** *mra Toqrob-l-o$_1$* ⟧ = { ⟦ F_8 pro_1 ⟧^{g} }. In other words, a structure of this kind yields as its interpretation a singleton set { g(8) (g(1)) }, where g(8)(g(1)) is presupposed to be a female relative of g(1).

As in Schwarzschild (2002) and Kratzer (1998), the value of the function variable is determined by the speaker. The meaning in (26b) comes about when the unpronounced individual variable is bound by the quantifier *tfol ma* 'no kid'. When that happens, the indefinite restrictor will be interpreted relative to a variety of assignments, each of which assigns a different kid to the unpronounced individual variable. Thus, the meaning of the sentence will concern a variety of different singleton sets that vary with different kids under consideration. The effect of *el* in this case is ultimately to yield the presupposition that the function chosen maps every kid to a female relative of his.

(26) tfol ma λ_1 [t_1 jarəb kol makla deret.ha wahəd el [[…**F_8 pro_1**] mra Toqrob-l-o_1]]
a. No kid x tried every dish that some y *identical to the individual f(x)* made.
Presupposition: for every kid x, *f* (x) is a female relative of x.

A sentence with the analysis above would be *true* in (C4) on the basis of an *f* such that *f* (Ali) = R1, *f* (Ahmed) = R4 and *f* (Reda) = R5 as in the schema in (27) below. I take it that (19) is judged *true* in (C4) because the function sketched in (27) is the only function in the context that makes the sentence *true*.

(27) Ali: { R1, **R2** } $\left\{ \begin{array}{lll} f\text{(Ali)} & = & \text{R1} \\ f\text{(Ahmed)} & = & \text{R4} \\ f\text{ (Reda)} & = & \text{R5} \end{array} \right\}$
Ahmed: { **R3**, R4 }
Reda: { R5, **R6** }

This is not the case in context (C3): The fact that the contexts put forward many functions that would in principle make the sentence *true* and no salient one, makes the recovery of the referent of F_8 impossible. Thus, (19) is judged *true* in (C4) and unevaluable in (C3).

4.2. A compositional semantics for *a+certain* DPs

The referentiality test shows that *a+certain* DPs behave in a similar way to *wahəd+el* DPs: (i) they lack all sorts of existential readings (narrow scope, wide scope, intermediate scope and existential quantification of skolem functions) and (ii) contribute referential readings (reference being either to individuals or functions). Thus, my implementation of the singleton indefinites approach transfers straightforwardly to English *a+certain* DPs.

To show this, let us start by considering the English counterpart of the sentence in (1) repeated below as (28). Contrasts parallel to those we saw in Section 3 show that the only reading that this sentence has involves reference to an individual.

(28) If a certain teacher is absent, Reda will leave.

To account for this reading, I take English *certain* like AA *el* to imposes a uniqueness presupposition to its sister. Thus, *certain* has the following semantics: $[\![\text{certain}]\!]^g = \lambda P_{<e,t>} : |P| = 1. P$. Accordingly, I stipulate that there is more structure to *a+certain* DPs indefinite than what is spelled out: *a certain teacher* has a structure of the form $[_{DP}$ a [certain… pro_2 teacher]] where pro_2 is an individual variable. The restrictor [certain…pro_2 teacher] is interpreted as follows: $[\![$ certain pro_2 teacher $]\!]^g$ is defined iff $[\![pro_2]\!]^g$ is a teacher; when this is the case, $[\![$ certain pro_2 teacher $]\!]^g = \{ g(2) \}$. The determiner $[\![$ a $]\!]^g$ is simply an existential quantifier which in this case ranges over the one element in the restrictor set. The meaning that comes about for the sentence in (28) is sketched in (29) below.

(29) If some x identical to the individual g(2) is absent, Reda will leave.
Presupposition: g(2) is a teacher.

Let us now turn to the derivation of the functional readings that *a+certain* DPs give rise to. To illustrate, let us consider the sentence in (30) from Schwarz (2001) in a context where A, B and C are the only candidates, each one of them wrote two papers but submitted only one. The scenario is schematized in (31) below: the sets represent the papers each candidate wrote; the underlined papers are those that the candidates submitted. The sentence is judged *true* in this context. The *true* judgement arises from the functional reading of *a certain paper he had written*.

(30) No candidate$_j$ submitted a certain paper he$_j$ had written.

(31) A: { **A1**, A2 }
B: { B1, **B2** }
C: { **C1**, C2 }

As for the example in **Error! Reference source not found.**) above from AA, I propose that the functional reading of the sentence in (28) comes about when the NP *paper he had written* is conjoined with a silent predicate that contains a free function variable and a bound individual variable as shown in the structure in (32) below. When this happens, the restrictor [certain [… F_8 pro_1 paper he_1 had written] is interpreted as follows: $[\![$ el … **F_8 pro_1** *paper he_1 written* $]\!]^g$

is defined iff ⟦ F_8 pro_1 ⟧^{g} is a paper that g(1) had written; when defined ⟦ el … **F_8 pro_1** *paper* *he_1 written* ⟧ = { ⟦ F_8 pro_1 ⟧^{g} }.
In other words, a structure of this kind yields as its interpretation a singleton set { g(8) (g(1)) }, where g(8)(g(1)) is a paper that g(1) had written. }. A possible value for the variable g(8) might be the function that, for any candidate x, yields x's latest paper. When the rest of the structure is filled out as in (32), the sentence in (30) gives rise to the reading in (32a) below.

(32) No candidate λ_2 [a [certain f_8 pro_2] paper that λ_3 he_2 had written t_3] λ_1 [t_2 submitted t_1].
a. For no candidate x is there some y identical to the individual g(8)(x) such that x submitted y. (i.e., for no candidate x is it the case that x submitted g(8)(x)).
Presupposition: for every candidate x, g(8)(x) is a paper that x wrote.

4.3. Wrap up

In this section, I argued for: (i) a semantics of specificity markers like *AA el* and English *certain*, where they can only combine with a singleton set (Schwarzschild, 2002). This is achieved by assuming additional unpronounced material at the NP level, which can include an individual free variable, or a function free variable together with a bound individual variable. (ii) At the DP level, indefinite determiners like *AA waħed* or English *a* are taken to contribute existential quantifiers with the classical meaning. I demonstrated that these two positions correctly predict the range of readings that *waħed+el* DPs and *a+certain* DPs give rise to. I conjecture that specific indefinites are always made up of these two ingredients (see also Royer, 2019, 2023 for a similar proposal for Chuj).

5. Implications

In this section, I specifically examine the implications of position (ii), which upholds a classical analysis of indefinite determiners when these restrictors are absent. In English—but not in AA (for reasons that will become clear shortly)—this position is immediately problematic, as these DPs are well known for their ability to violate locality constraints on quantifier scope, yielding both wide scope and intermediate scope existential readings.

I then show that this issue necessitates reconsidering alternative analyses of indefinite DPs that (i) allow for existential readings without violating locality constraints on quantifier scope and (ii) remain compatible with the semantic contribution of *certain*, which yields referential readings. Specifically, I explore the standard choice function approach, which grants scopal flexibility to existential quantification. The result is a novel, unified compositional account of indefiniteness in English—and potentially crosslinguistically—that improves upon existing analyses.

5.1. Indefinites unmarked for specificity as existential quantifiers

As is well-known, English *a*-DPs are notorious for their capacity to take wide scope when they occur in a syntactic island. To show this Consider the sentence in(33) below from Reinhart

(1997). The sentence is ambiguous between a wide scope reading as in (33a) and a narrow scope reading as in (33b).

(33) If a relative of mine dies, I'll inherit a house.
  a. There is a relative of mine x, such that if x dies, I'll inherit a house.
  b. If any relative of mine x dies, I'll inherit a house.

Note that the wide scope reading above is purely existential. The referentiality test shows that (33) can be *true* even when the context makes available more than one (but not all) relative(s) of mine for whom, if they die, I'll inherit a house. Thus, such a meaning cannot be accounted for by a referential mechanism such as implicit domain restriction (Schwarzschild, 2002) or reference to a choice function (Kratzer, 1998). Thus, in the absence of *certain*, *a*-DPs are predicted to behave like plain existential quantifiers. However, the availability of wide scope existential readings is inconsistent with the hypothesis that quantifier scope is uniform. If this hypothesis is correct, then my analysis as it stands undergenerates. In a similar way, the current analysis also undergenerates attested intermediate scope existential readings for *a*-DPs without *certain*. We sometimes find readings where an existential indefinite appears to take scope outside of a syntactic island that it occurs in but below a higher operator. A case at hand is (34) below from Abusch (1994), whose meaning could be derived as in (34a), again inconsistently with the hypothesis that quantifier scope is uniform.

(34) No student followed every instruction a professor had given.
  a. No student λ_1 [a professor] λ_2 [t_1 followed every instruction that t_2 had given]
  b. For no student x is there a professor y such that x followed every instruction that y had given.

Note however that assuming that indefinites are existential quantifiers and that *certain* yields referential readings, one can straightforwardly derives what Brasoveanu and Farkas (2011) calls the binder roof constraint. It has been observed since Chierchia (2001) that the choice function analysis generates unattested readings when an indefinite unmarked for specificity contains a pronoun bound by a higher quantifier.

To illustrate, consider the sentence in (35) below from Schwarz (2001) in the context in (31) sketched above where A, B and C are the only candidates, each one of them wrote two papers but submitted only one. Note that the sentence in (35(35) is judged *false* in such a context contrary to its minimal pair with *certain* which is judged *true*. The choice function analysis makes available two structures for such a sentence: the structure in (35a) that yields the meaning in (35b) below which is *true* in context (31) and the structure in (35c) that yields the meaning in (35d) which is false in in context (31). Since the meaning in (35b) is not attested, the choice function analysis overgenerates. Deriving the binder roof constraint in the choice function literature amounts to finding a way to block wide scope existential quantification over choice functions when an indefinite unmarked for specificity contains a bound variable pronoun.

(35) No candidate$_j$ submitted a paper he$_j$ had written.
  a. $\exists f \in$ CF [no candidate λ_1 [t1 submitted f [paper he$_1$ had written]]]

b. There is a way of choosing papers such that no candidate submitted the paper that gets chosen out of the set of papers written by him.
c. No candidate λ_1 [$\exists$ *f* $\in$ CF [t_1 submitted f [paper he$_1$ had written]]]
d. For no candidate x is there a way to choose among the papers that x wrote that chooses a paper that x submitted.

Note that the undesired meaning in (35b) is in fact an existential functional reading. Thus, put in different terms, the possibility of generating the problematic reading comes about once one assumes that indefinites unmarked for specificity can yield functional readings. Recall that my analysis ties the availability of functional readings to the semantic contribution of *certain*. It is not surprising then that such readings are not available in the absence of *certain*.

Furthermore, it is important to note that the available reading sketched in (35d) within the choice function analysis is nothing more than the narrow scope existential quantifier reading sketched in (36a) below. Thus, in the absence of *certain,* such a reading is straightforwardly derived by allowing the existential quantifier contributed by *a paper he had written* to take narrow scope as shown in the structure in (36) below.

Note that under a bound variable pronoun interpretation of *he,* the narrow scope reading is predicted to be the only reading available for (35). This is because allowing *a paper he had written* to take wide scope puts the pronoun in a position where it can no longer be bound.

(36) No candidate λ_2 [a paper he$_1$ had written] λ_1 [t_2 submitted t_1]]]
a. For no candidate x, is there a paper y that x had written such that x submitted y.

I conclude that my implementation of the singleton indefinites approach correctly derives the binder roof constraint. However, I showed above that my analysis undergenerates both wide scope and intermediate scope readings for English *a*-DPs.

Let us now examine whether the same issue arises in AA. Given the semantic and syntactic analysis I propose for *waħed,* a natural starting point is to investigate the behavior of *waħed*-DPs (without *el*). Surprisingly, such DPs are ungrammatical in AA, as illustrated in (37) below. This outcome is unexpected under the current analysis, which treats *waħed* as an indefinite determiner that contributes an existential quantifier.

(37) *tlagi t *waħed* Tbib.
met I one doctor

While the question of the ungrammaticality of *waħed* in the absence of *el* raises an important semantic and syntactic puzzle, addressing it fully requires a thorough investigation of the distribution of the numeral *waħed* in AA, which goes beyond the scope of this paper. Therefore, I leave it as an open question for future research.

In this subsection, I showed that my implementation of the singleton indefinite approach does not overgenerate wide scope and intermediate scope readings for indefinites unmarked for specificity in AA but does undergenerate these readings for English and English-like languages. At the same time, my approach successfully accounts for the binder roof constraint.

In the following subsection, I address the following question: what mechanism is both (i) compatible with the idea that *certain* makes the contribution I have claimed and (ii) able to derive wide scope readings and intermediate scope readings without violating locality constraints on quantifier scope?

5.2. A hybrid choice function approach

In this subsection, I examining the compatibility of the semantics of *certain* that I propose with the choice function analysis– an analysis that is known for its capacity to derive such readings without violating locality constraints.

Let us start by considering again the sentence in (35). The structure in (38) yields the wide scope existential reading in (38a) by allowing existential quantification over choice functions to take place at the topmost level.

(38) $\exists f$ [No student followed every instruction that *f* [professor] had given]
   a. There is a way of choosing among professors such that no student x followed every instruction that the professor that *f* choses had given.

As for intermediate scope readings, the mechanism under which they are derived is debated. While the original proposal (Reinhart, 1997; Winter, 1997) suggests that these readings comes about when existential quantification over choice function variables takes place at the intermediate level as in (39) below, Kratzer (1998), Winter (2004) and Schlenker (2006) takes all intermediate scope reading to be functional readings. I argued above that these readings are distinct. Thus, I maintain that the scope of the existential quantifier should remain free.

(39) No student $\lambda_1 \exists f$ [t_1 followed every instruction that *f* [professor] had given]
   a. For no student x is there a way to choose among professors such that x followed every instruction the professor that *f* chooses had given.

When *certain* is present as in (40) below, the choice function variable *f* contributed by *a*, chooses an individual from a singleton set: either from $[\![$ certain …pro_2 professor $]\!]^g$ = { g(1) } as in (40b) contributing reference to an individual or from $[\![$ certain … F_8 pro_1 professor $]\!]^g$ = { g(8) (g(1)) } as in (40d) contributing reference to a function. Given the semantic of *certain*, the level at which existential quantification takes place doesn't affect the truth conditions.

(40) No student followed every instruction that a certain professor had given.
   a. $\exists f$ [No student followed every instruction that *f* [certain …pro_1 professor] had given]
   b. There is a choice function *f* such that no student followed every instruction that *f* choses from { g(1) }. **Presupposition**: g(1) is a professor.
   c. $\exists f$ [No student followed every instruction that *f* [certain … F_8 pro_1 professor] had given]
   d. There is a choice function *f* such that no student x followed every instruction that *f* (x) had given. **Presupposition:** for every student x, *f* (x) is a professor or x.

Thus, I claim that the semantics of *certain* that I proposed here correctly derives the full range of readings available to both indefinites marked and unmarked for specificity in English. However, adopting such a mechanism is not without a cost. Recall that the choice function analysis cannot derive the binder roof constraint observed when a higher quantifier binds a pronoun that occurs within *a*-DPs. Thus, abandoning the classical existential quantifier analysis in favor of a choice function analysis leads to overgenerating unattested readings (but see Mirrazi, (to appear) for a recent attempt to derive the binder roof constraint within a choice function analysis).

6. Conclusion

In this paper, I argued that a novel test distinguishing between existential readings and referential readings provides strong evidence for the referential nature of specificity-marked indefinites. The results showed that when multiple potential referents are available in a context without a single salient referent, sentences containing specificity-marked indefinites are systematically judged as unevaluable—speakers don't want either to judge the sentence *true* or to judge the sentence *false* but show uncertainty about the claim being made. I take this finding to supported the claim that specificity-marked indefinites in AA, English, and likely other languages function as referential expressions rather than existential quantifiers.

Additionally, I argued that the morphology of *waħed+el* DPs in AA provides insight into the semantic contribution of specificity markers. The presence of the definite determiner *el* ('the') suggests that these expressions should be treated as singleton indefinites (Schwarzschild, 2002). I extended this analysis to English *certain*, which exhibits parallel behavior. However, unlike Schwarzschild, I contended that extreme domain restriction was not merely implicit but obligatorily marked through morphology, as evidenced by the presence of *el* in AA indefinite DPs and the comparable role of *certain* in English.

Crosslinguistic evidence demonstrated that non-specific indefinites, such as English *a* (without *certain*) and *some*, were capable of contributing wide scope and intermediate scope readings that are not predicted by the current analysis. In contrast, there is no evidence from AA for wide scope and intermediate scope existential readings. In particular, we do not find them for *waħed*-DPs which are ungrammatical in AA.

Finally, I explored the possibility of incorporating the semantics of specificity markers as extreme domain restrictors within the original choice function approach, which allows scope freedom to existential closure. This resulted in a unified compositional account of indefiniteness in English and potentially across languages, enabling the theory to capture a broader range of readings, including referential ones. However, I noted that this proposal, in its current form, remains unable to derive the binder roof constraint.

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