A kinds-based DRT approach to the semantics of articles across languages

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1 Introduction

In Kamp & Reyle's (1993) original DRT-version, a noun phrase like *a student* induces a DRS containing a reference marker u in its universe and a condition student(u) in its condition set without taking into semantic account the internal syntactic structure of the noun phrase. Farkas & de Swart (2003) improve upon this situation by distinguishing between uninstantiated arguments called "thematic arguments" and instantiated arguments called "discourse referents" (=reference markers). According to their view, first, the nominal predicate *student* introduces a condition student(x) imposed on a thematic argument into the DRS under construction. Then, by syntactically combining with the indefinite article, the thematic argument x is replaced by a reference marker u which in addition becomes listed in the universe of the DRS. This process is dubbed "d-instantiation" because it is supposed to be the canonical function of a determiner/article to introduce a reference marker. Given this view, the question arises of how to handle determinerless noun phrases. To cope with English bare plural NPs like *students*, Farkas & de Swart consider the plural morpheme to be associated with a presupposed reference marker. The requirement of the presupposition guarantees that the thematic argument contributed by the nominal will be instantiated at the end of the composition even though there is no overt determiner to d-instantiate it.

In addition to giving a more fine-grained account of the semantic composition of English NPs (or: DPs), Farkas & de Swart's system offers a semantics for a special kind of object NP found in various languages which is sometimes characterised as "semantically incorporated" or "pseudoincorporated" (Dayal). There seems to be agreement among semanticists dealing with such nominals (Van Geenhoven 1998, Dayal 1999, Dayal 2003, Chung & Ladusaw 2004) that these compose as properties with the semantics of the verbal predicate. The proposals differ only with respect to how in particular property-composition is modelled. Farkas & de Swart (2003) develop their solution on the basis of Hungarian. Besides object NPs introduced by an overt article, Hungarian possesses bare object NPs. Farkas & de Swart's theory predicts that in the absence of an article, these nominals contribute nothing but a condition imposed on a thematic argument (and a presupposed reference marker in case the number value in 'plural'). Since no d-instantiation takes place, the final DRS will contain an uninstantiated argument x. By stipulation (Farkas & de Swart 2003:63), such a DRS will be true if the model contains at least *some* individual satisfying the condition imposed on x.

Two questions arise in connection with Farkas & de Swart's theory: (i) How to account for bare singular argument NPs as found in so many languages? Where does the reference marker come from if neither an overt article nor plural morphology can be made responsible

for introducing it? One possibility would be to resort to a null article[1]. Alternatively, one could assume that, unlike in English or Hungarian, already the head noun has the semantic status of an argument expression in the respective languages (cf. Chierchia 1998). (ii) How to deal with languages having property-composing noun phrases which *are* accompanied by an overt article? One example is the Maori indefinite NP formed by the article *he*. If a property-composing NP induces a DRS with an uninstantiated argument, the semantics of *he* cannot be analysed on a par with the semantics of English or Hungarian articles as d-instantiating a thematic argument.

In this paper, I will mainly address the second question. Well aware of the problem, Farkas & de Swart are forced to conclude that Maori *he* is "a special D signaling that no discourse referent is being introduced" (Farkas & de Swart 2003:86). It seems that it is not possible to abstract from the d-instantiating function of English and Hungarian articles to a grammatical function of determiners in general. This appears to be even more evident in face of apparent non-referential noun phrases in English as, for instance, in *Mary is a doctor* (Farkas & de Swart 2003:36). Nevertheless, this is what I argue for in this paper: The grammatical function of an article is always the introduction of a reference marker. The ingredient necessary to maintain this view is a distinction between *two ontological sorts of reference markers*, namely token (or: object) reference markers as opposed to type (or: kind) reference markers.

As outlined in section 2, I consider a Maori *he* phrase to introduce a type reference marker into the DRS: "*he* is used when the type of object is crucial, and *teetahi* is used when the number of individuals present is significant" (Bauer 1993:357). In section 3 the case of Tongan is discussed which possesses two kinds of definite noun phrases. Building on Farkas & de Swart's DRT-version I then propose a formalisation in the final section 4.

2   Two indefinite noun phrases in Maori

It is a structural peculiarity of a verbal sentence in Maori that, except for the subject, all of the arguments of the verbal predicate must be realised as prepositional phrases. Example (1) shows a simple transitive sentence. The verb is introduced by a tense-aspect particle and followed a the pronominal subject and by a prepositional phrase corresponding to the indirect object (cf. Bauer 1993):

(1)   *Ka whaangai ia i   ngaa manu*
       T   feed   she PREP the.pl bird

      'She is feeding the birds'

Indefinite non-specific direct objects of active transitive sentences obligatorily undergo incorporation. As a consequence, the direct object appears as a bare noun immediately following the verb. Compare example (2) where the verb and the noun together appear inside of the discontinuous tense-aspect marker *e...ana* (cf. Bauer 1993):

(2)   *E tuhituhi   reta   ana ia*
       T write.redub letter T   she

      'She is letter-writing'

Apart from certain contexts where a number of things is presented in form of a list (cf. Bauer 1993:355-356), this is the only case in Maori where a noun is not preceded by a determiner. On

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[1]This is essentially Farkas & de Swart's answer: "It is well-known, of course, that there are languages that place no such restriction on nominals in argument position. [...] In terms of the framework developed in this book, bare singular nominals in these languages have the potential to introduce a discourse referent on their own, without the need for a determiner or a plural feature." (Farkas & de Swart 2003:54)

all other occasions, noun phrases require determiners. The inventory of Maori determiners includes, among others, the following (the functional characterisation follows Bauer 1993:100): *te* [definite singular, also generic], *ngaa* [definite plural, also generic], *teetahi* [indefinite singular, specific], *eetahi* [indefinite plural, specific], and *he* [indefinite, non-specific].

Maori makes frequent use of a passive diathesis thereby promoting the undergoer participant to the subject position (cf. Bauer 1993):

(3)　*Ka whaangai-a ngaa　manu* (*e　ia*)
　　　T　feed.PASS　　the.pl bird　by she

　　　'The birds were fed by her'

Dependent upon their number value, definite subjects are signalled by either *te* or *ngaa*. If the subject is indefinite, however, there is a choice (independent of number): for certain indefinites *teetahi* (singular) or *eetahi* (plural) will be used, for others the number neutral article *he*. According to Chung & Ladusaw (2004:32) both these indefinite articles contribute a discourse-novel reference marker to the semantic composition of the sentence within which they appear. What distinguishes *teetahi* phrases from *he* phrases is supposed to be the way how the respective new reference marker is being introduced. The article *he* is analysed as signaling that, first, the nominal imposes the property it is associated with as a condition on a referential variable of the verbal predicate and that, secondly, at a later stage of the semantic composition, existential closure will saturate the respective argument of the verb. In contrast, the article *teetahi* is analysed as signaling that, determined by a choice function, some entity having the property described by the nominal saturates the argument slot of the verbal predicate.

While I agree that the linguistic peculiarities of *he* phrases should be traced back to *he* phrases composing as properties, I refrain from accepting the formalisation offered by Chung & Ladusaw. The reason is that I see a way to defend the view according to which the syntactic category of articles is associated with the semantic function of d-instantiating thematic arguments, to speak in Farkas & de Swart's terms. Defending this view is desirable because a uniform article function guarantees a simple syntax-semantic mapping.

Building on an idea developed within property theory (Chierchia 1984, Chierchia & Turner 1988, Chierchia 1998), I claim that *teetahi* phrases introduce into the discourse reference markers standing for ordinary objects while *he* phrases introduce reference markers standing for properties-as-individuals. Conceiving of properties-as-individuals as concepts in the sense of Krifka (1995) – whereby conventionalised concepts can be called "kinds" – I thus commit myself to an ontology populated by spatiotemporal objects (tokens) side by side with abstract kinds (types). Subscribing to this fairly standard ontological assumption (Carlson 1977, Krifka et al. 1995, Dayal 2004) neither is it necessary to treat Maori *he* as a "special D signaling that no discourse referent is being introduced", nor is it necessary to resort to a mode of composition different from functional application. Instead, *he* triggers instantiation as usual with non-quantificational determiners (cf. Farkas & de Swart 2003:31-32). What is special about the article *he* is that the reference marker introduced by it must stand for a property-as-individual, i.e. for a kind.

Let us recall the linguistic contexts given by Chung & Ladusaw within which *he* phrases can be used. The first class of contexts is provided by certain episodic verbal predicates. (4) shows an example. The notation SPOT (a whale) in (5) is meant to reflect that an episodic verbform of the Maori lexeme meaning 'see/spot' allows one of its argument slots to be filled by a *he* phrase meaning 'a whale'. In contexts such as these a *teetahi* phrase is usually an alternative option (but unlike *he* indefinites, a *teetahi* phrase gives rise to a specific reading):

(4)　*Ka kite-a　　he tohora e　teetahi kaititiro, ka karanga atu　　raatou*
　　　T　see-Pass a　whale by a　　　lookout T　call　　away they

　　　'If a lookout spotted a whale, they would call out'

(5)   SPOT (a whale)   ARRIVE (a guest)
      GIVE (a present)   ASSEMBLE (a few people to give us a hand)
      TAKE (a different way)   FILM (a documentary on Tokumaru Bay)
      EMBARK (a different carriage)   CATCH (a pig)
      OCCUR (an earthquake)   PREPARE (a feast)
      APPROACH (a person)   GO ABROAD (a Maori)
      ELECT (a new chairperson)   COMPOSE (a song)
      DISCOVER (a cure for aids)   GIVE (a warning)
      NOT WANT TO SEE (a person)   TO GET IN (food)

The second kind of linguistic context is represented by existential constructions (including existential 'have'). Only *he* phrases are possible pivots of existentials:

(6)   *Ka ai   he toki maa-na*
      T   exist a   axe T.of-him

      'There is an axe for him (= He has an axe)'

A *he* phrase is used as the pivot of an existential predicate in order to inform the hearer about the existence (or non-existence) of an object. This existence-asserting usage of *he* phrases extends to the cases under (5), the difference being that with episodic predicates, the hearer gets additionally informed about the role played by the respective object in the event denoted by the verb. The common denominator is, then, that *he* phrases are being used in contexts where the hearer is not beforehand acquainted with the existence of the entity described by the noun phrase. Such an entity may be presented as "entering the screen" (arrive, occur, approach, ...), as being created out of nothing (prepare, film, assemble, compose, elect, ...) or as otherwise being brought to attention (catch, give, embark, ...) or – in the most direct way – simply as existing. My way of capturing this is to analyse the *he* phrases in (5) as kind terms which appear in object-level argument slots giving rise to so-called "derived kind predications" in Chierchia's (1998) sense. By the same token, existentials can be viewed as constructions selecting for a kind term to ascribe to object instances of the kind a property, viz. the property of existing within an explicitly or implicitly given location[23].

Arguably, the fact that the predicative nominal of a predicational copula sentence must be a *he* phrase can likewise be explained along these lines:

(7)   *He kaipeita rongonui a   ia o te taiwhenua*
      a   painter famous   Pers she of the landscape

      'She is a well-known landscape painter'

Treating *he kaipeita rongonui* as a kind term is the literal way of modeling the idea that the entity referred to by the pronoun *ia* ('she') "falls under the concept" FAMOUS PAINTER. Remember that kinds are conventionalised concepts are properties-as-individuals! The fact that she is an instance of the kind FAMOUS PAINTER is tantamount to saying that she has the property of being a famous painter[4].

At least, if *he* phrases were kind terms it comes as no surprise that they figure in generic sentences[5]:

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[2]Compare Partee & Borschev's (to appear) existence-is-relative principle according to which existence in the linguistically relevant sense must always be understood relative to a location.

[3]This is partly in line with and partly runs contra to McNally (1998) who advocates the view that existentials select for properties-as-functions.

[4]This way of treating predicative nominals extends to apparent non-referential noun phrases as in *Mary is a doctor* which I take to be referential, albeit kind-referential. I will not go into this here.

[5]Chung & Ladusaw count the Maori counterpart of the following sentence as evidence that *teetahi* phrases may appear in generics (the underlined indefinite is realised as a teetahi phrase): *The good thing about the Maori people is, when there's no money, they look out for a way to get money*. Arguably, however, this is a modalised/intensionalised episodic sentence.

(8)   *Ka tino koorero he koroua i ngaa hui*
      T   very speak   a old.man at the.pl meeting

      'Old men speak a lot at meetings'

In sum: Given that noun phrases may refer to two sorts of entities, viz. either to objects or to kinds, the two indefinites in Maori may be viewed as referentially specialised terms: *teetahi* phrases are specialised in object-reference, *he* phrases are specialised in kind-reference.

3   Two definite noun phrases in Tongan

Let us now turn to another Polynesian language, Tongan, structurally contrasting two types of *definite* noun phrases. Before coming to this contrast, however, I first want to draw attention to a peculiarity (from the point of view of Indoeuropean languages) discussed with respect to Tongan. Tongan is a language said to lack the word-level categories noun, verb and adjective. Broschart (1997) shows that, as a matter of principle, every content word may either follow a TAM-marker to form a predicate phrase or follow an article to form an argument phrase (whereby stress on the last syllable signals, according to Broschart, definiteness):

(9) a. *na'e 'uha*   *e   'uhá*
          PAST rain   ART rain.DEF

         'It rained'   'the rain'

    b. *na'e lele*   *e   lelé*
          PAST run   ART run.DEF

         'He ran'   'the act of running'

    c. *na'e kei tamasi'i*   *e   tamasi'í*
          PAST still boy   ART boy.DEF

         'He was still a boy'   'the boy'

    d. *'oku lahi*   *e   lahí*
          PRES big   ART big.DEF

         'It is big'   'the big one'

Dependent upon the syntactic context within which it is realised, i.e. whether it appears as the complement of an article or as the complement of a TAM-marker, a content word can actualise quite different meanings. In (9d), for example, the content word *lahi* is interpreted once as the property of being big and once as an object having the property of being big. Even more drastic meaning adaptations can be observed in the following examples where the expressions *ipu kofi* ('cup of coffee'), *'ulu* ('head') and *faiako* ('teacher') appear within TAM-syntagms giving rise to the readings 'have a cup of coffee', 'have a head' and 'provide the teachers' (cf. Broschart 1997):

(10) a. *te   ta   ipu kofi*
         FUT 1.du.incl cup coffee

        'Shall we have a cup of coffee?'

    b. *'oku fu'u fo'i   'ulu lani pulu e kakaá*
         PRES CL.big CL.round head colour blue ART parrot.DEF

        'The parrot has a big round blue-coloured head'

    c. *na'e kau   faiakó   ('a) e Siasi*
         PAST pl.hum teacher.DEF (ABS) ART church

        'The church provided the teachers'

Pay attention to the classifiers in (10b) and to the plural marker in (10c). Whereas this kind of "nominal" morphosyntax is allowed within TAM-syntagms, full fledged noun phrases involving an article are not allowed (cf. Broschart 1997):

(11) *na'e e   tangatá*
      PAST   ART man.DEF
      'He was the man'

Foley (1998) points out that, if Tongan content words – unlike their English counterparts – are precategorial, this leads to consequences for the semantic analysis of the Tongan article in comparison to the English article. According to Foley, a Tongan article like *e* slightly but crucially differs in meaning from an article in English: The function of the English article is to specify a value ('definite', 'indefinite'...) for the referential object variable <R> contributed by the expression the article attaches to. Since such a variable is contained only in the semantics of content words belonging to the syntactic category N, an English article is applicable to nouns only. To build a noun phrase around a verbal content word, the V must be nominalised beforehand by an appropriate morphosyntactic operation. The Tongan article, by contrast, fulfills the double function of, first, augmenting the semantics of its precategorial complement content word with a referential object variable <R> and, secondly, specifying a value for it. The complement of the Tongan article is precategorial exactly because by itself it possesses no referential variable[6].

One could capture precategoriality in Tongan and other Philippine languages like, for instance, Tagalog (cf. Foley 1998) within Farkas & de Swart's DRT-approach as follows: Let Tongan content words introduce a condition imposed on an underspecified thematic argument $x_{<?>}$ into the condition set of the DRS under construction. In contrast to that, let English nouns introduce a condition imposed on a thematic argument specified for a referential variable: $x_{<R>}$ (an English verb would accordingly introduce a condition imposed on a thematic argument specified for an event variable $x_{<E>}$). If a thematic argument is specified as $x_{<R>}$, it may be replaced via d-instantiation only by a reference marker of the ontological sort object u, v, w, ... If a thematic argument is underspecified, however, it may be replaced by a reference marker of the ontological sort object u, v, w, ... or by a reference marker of the ontological sort event e_1, e_2, e_3, ... The latter kind of instantiation is triggered by the TAM-marker in Tongan.

Let us return to the two kinds of definite NPs. According to Hendrick (2004), Tongan possesses (the neutral and the emotional variant of) a definite article and (the neutral and the emotional variant of) an indefinite article. The definite article sometimes appears with an accented complement and sometimes with an unaccented complement[7]. This results in the ternary opposition of "indefinites", "semi-definites" and "definites" – to use Churchward's terminology:

(12) indefinite: *a faiako*   'a teacher'
      semi-definite: *e faiako*   'the teacher'
      definite: *e faiakó*   'the teacher'

These three forms have a quite interesting distribution. In Tongan copular sentences the predicate is represented by an article syntagm. If it is represented by an accented definite, the sentence is understood as an equative sentence (13a). The use of the unaccented definite results

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[6]For Foley (1998:63), to contain an object variable <R> in the semantic structure is a definitional characteristics of a noun. By the same token, verbs are defined as those expressions containing a referential event variable <E>. English has lexical verbs in the sense that part of the English vocabulary inherently contains <E>. The function of tense-aspect inflection in English is therefore to specify a value of <E> ('perfective', 'imperfective',...). Since lexical expressions are precategorial in Tongan, a Tongan tense-aspect particle must at the same time fulfill a double function, namely semantically contributing a referential event variable as well as specifying its value.

[7]In fact, it is not the complement expression as such which is accented or unaccented, but its final vowel: "the main stress is shifted from the last vowel but one to the very last vowel, just as it would be if an enclitic were added" (Churchward 1953:6-7)

in a predicational sentence expressing a sortal contrast (13b). At least, using the indefinite yields a predicational sentence with no such contrast involved (13c) (cf. Churchward 1953:25):

(13)   a.   *ko   e   faiakó ia*
            PRT DEF teacher 3sg

            'He is the teacher'

      b.   *ko   e   faiako ia*
            PRT DEF teacher 3sg

            'He is a teacher (not a lawyer)'

      c.   *ko   a   faiako ia*
            PRT DEF teacher 3sg

            'He is a teacher (one among others)'

Moreover, only unaccented argument phrases are able to fill the pivot slot of existentials (cf. Hendrick 2004):

(14)   a.   **oku 'i ai   e   puaká 'i Maketi*
            PRES THERE DEF pig   in market

            'There is the pig at the market'

      b.   *oku 'i ai   e   puaka 'i Maketi*
            PRES THERE DEF pig   in market

            'There is the pig at the market'

      c.   *oku 'i ai   ha   puaka 'i Maketi*
            PRES THERE INDEF pig   in market

            'There is a pig at the market'

With definite generics, the unaccented article syntagm is chosen[8][9] (cf. Hendrick 2004):

(15)   *'oku 'ikai ke fakamafana'i 'e   he malau fefine 'a   hono   fua   ka 'oku*
        PRES NEG PRT warm   ERG DEF malu female ABS her-DEF produce but PRES

       ne tuku 'a   e   ngaue ko 'eni ki he mo'ungaafi
        she leave ABS DEF job   PRT this to DEF volcano

       'The malau does not incubate her eggs, but leaves this job to the volcano'

Finally, only the unaccented variants of an article syntagm are possible in the function of secondary predicates (cf. Hendrick 2004):

(16)   a.   **'oku tau lau   ia ko he takí*
            PRES   1pl regard 3sg PRT DEF leader

            'We regard him as the leader'

      b.   *'oku tau lau   ia ko he taki*
            PRES 1pl regard 3sg PRT DEF leader

            'We regard him as a leader'

      c.   *'oku tau lau   ia ko ha   taki*
            PRES 1pl regard 3sg PRT INDEF leader

            'We regard him as a leader'

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[8]Hendrick states that "[g]enerics in Tongan are expressed by a definite DP either with or without the definite accent", but he gives not a single example of an accented generic. Instead he says that it is "common" to find definite generics without the definitive accent (cf. Hendrick 2004:15-16).

[9]"The form *he* is used immediately after the prepositions *'e*, *'i* (expressed or understood), *ki*, and *mei*. In all other positions *e* is used." (Churchward 1953:23)

I propose a quite simple explanation for the distribution of the three kinds of Tongan noun phrases given in (12). On one hand, as a matter of principle, a noun phrase may denote either on the kind-level or on the object-level (cf. Dayal 2004). On the other hand, the referent of a noun phrase, be it a kind or an object, may be presented as discourse-novel or familiar. The definite article signals familiarity, the indefinite article signals novelty. Indefinite noun phrases in Tongan are underspecified with respect to the kind-level/object-level dichonomy. With definite noun phrases, however, object-level reference is signalled by accentuating the complement. In other words: *e faiakó* introduces a token reference marker into the DRS which has to be identified with a token reference marker established in the previous discourse[10], *e faiako* introduces a type reference marker which likewise has to be identified with some pre-established type reference marker and *a faiako* introduces a new reference marker – whether interpreted as a type or as a token depends on contextual factors.

Given this, (13a) expresses the identity of the object referred to by the third person pronoun and the object referred to by the accented definite. (13b) expresses that the object referred to by the third person pronoun is an instance of the familiar kind TEACHER (and not of the kind LAWYER). (13c) expresses that the object referred to by the third person pronoun is an instance of the kind TEACHER which is presented as hearer-new. As with *teetahi* phrases in Maori, accented definite noun phrases are excluded from existential sentences because an existential selects for a concept/kind and ascribes to it the property of having instances. If unaccented definites are kind terms their usage in generic contexts is predicted. With respect to (16) I would say that regarding someone as a leader means to agree upon viewing a certain object individual as the legitimate instance of the kind LEADER.

Summing up: Based on the assumption that kinds are properties-as-individuals, I have argued that property-composing noun phrases like, for instance, Maori *he* indefinites or Tongan unaccented definites should be viewed as kind terms. In the next section I shall outline a way to formalise this in terms of Farkas & de Swart's DRT-version.

4   A kinds-based DRT approach

According to Farkas & de Swart, every nominal predicate introduces at least one thematic argument into the DRS under construction. Given the ontology contains a kind domain as well as an object domain, we expect thematic arguments to come in two varieties: as arguments restricted to kinds x_k or as arguments restricted to objects x_o. What is the basic lexical meaning of a noun? There are three possible scenarios: (i) a noun basically introduces a condition imposed on a kind argument, object reference being the derived notion. (ii) a noun basically introduces a condition imposed on an object argument, kind reference being derived. (iii) a noun introduces a condition imposed on an argument underspecified w.r.t. the kind-level/object-level distinction.

There are mainly two reasons why I adopt scenario one. First, kinds are ontologically (cf. Krifka 1995) and psychologically (cf. Macnamara, La Palme Reyes & Reyes 1994) prior to objects: object reference always involves at the same time reference to an underlying kind. Secondly, there seems to be growing consensus (Chierchia 1998, Dayal 2004, but see Krifka 2004 for a different view) to adopt a Carlsonian perspective on the semantics of determinerless noun phrases. According to this view, bare NPs are kind terms which gain an existential (object-level) interpretation only if realised within cotextually determined object-level positions. If there is no existential import coming from the cotext (mainly from the verbal predicate), a bare nominal is doomed to denote at the kind-level.

Adopting a "kinds-based approach" (Dayal), I presume that a nominal predicate basically

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[10]If there is no suitable previously introduced reference marker such a reference marker needs to be accommodated, cf. Geurts (1999).

introduces an uninstantiated kind argument x_k into the DRS. An article applying at this stage of the derivation will d-instantiate this thematic kind argument by substituting a kind reference marker u_k for x_k (from now on I will use capital letters to symbolise kind arguments and small letters to indicate object arguments):

(17) *whale*:   [| whale(X)]
      $\downarrow$ d-instantiation
      a whale: [U| whale(U)]

If, however, the co(n)text induces a process which I call "spatiotemporal localisation", a thematic object argument x designated to be an instance of whatever satisfies the kind variable X will be introduced on top of the thematic kind argument. An article applying at this stage of the derivation will replace x and X by the reference markers u and U, respectively:

(18) *whale*:   [| whale(X)]
      $\downarrow$ spatiotemporal localisation
      whale: [| whale(X) & loc(x,X)]
      $\downarrow$ d-instantiation
      a whale: [u U| whale(U) & loc(u,U)]

An English kind term as in *A whale is a mammal* is composed along the lines of (17), an object term as in *A whale is blowing* is composed along the lines of (18). I stipulate that, in the absence of a determiner, instantiation takes place by default "as soon as possible", i.e. prior to spatiotemporal localisation[11]. The result is a kind term like the English bare plural *whales*. It is this same kind term *whales* which figures in each of the examples under (19):

(19)   a. *Whales are mammals*

        b. *Whales are ruining my garden*

        c. *The lookout is looking for whales*

In (19a) *whales* occupies the subject argument slot of the kind-level predicate *are mammals*. The DRSs of these two expressions compose via "argument instantiation" (cf. Farkas & de Swart 2003:32-34)[12]:

(20) *are mammals*:   [V | mammal(V) & plural(V) & =(X,V)]
      $\downarrow$ a-instantiation
      whales are mammals: [U,V | mammal(V) & pl(V) & =(U,V) & whale(U) & pl(U)]

This DRS is true if the model contains at least two whale-kinds which at the same time are mammal-kinds. In (19b), *whales* occupies the subject argument slot of the episodic predicate *are ruining my garden* (cf. Chierchia 1998:364). Since *whales* is a kind term, it is not capable of a-instantiating the thematic object argument x. All it can do is restricting possible actor tokens to instances of the type WHALE. Argument instantiation can succeed only by lifting *whales* from the kind-level to the object-level via spatiotemporal localisation, i.e. by resorting to a repair mechanism similar to Chierchia's (1998) DKP-rule[13]:

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[11]The only exception to this rule are bare NPs where the head noun is modified by linguistic material triggering spatiotemporal localisation, as in *parts of that machine* or *books she bought yesterday*.

[12]As it stands, the semantic representation of (20) cannot be correct because it implies that *whales are mammals* and *mammals are whales* have identical truth conditions. To solve this problem I provisionally propose a pragmatic principle according to which the reference marker introduced by a bare NP has to be identified with the largest member of the denotation set of the nominal predicate unless there is information ruling out this kind of identification. With respect to (20), this would lead us to the following paraphrasis: 'The largest plurality of whale-kinds is a kind of which the properties of being mammal and of being plural are true'. With bare singulars, the largest member of a set of kinds is always the superkind (cf. Dayal 2004).

[13]"E" is an event type reference marker, "e" is an event token reference marker.

(21) *are ruining my garden*:
[e E | ruin-my-garden(E) & loc(e,E) & actor(e,x)]
↓ restriction
whales are ruining my garden:
[U e E | whale(U) & pl(U) & ruin-my-garden(E) & loc(e,E) & actor(e,x)& loc(x,U)]
↓ a-instantiation via spatiotemporal localisation
whales are ruining my garden:
[uUeE | whale(U) & pl(U) & ruin-my-garden(E) & loc(e,E) & actor(e,u)& loc(u,U)]

This DRS is true if the model contains instances of the kind WHALE participating as actors in a ruin-my-garden event. Finally in (19c), *whales* occupies the undergoer argument slot of the episodic predicate *is looking for*. Arguably, the DRS of the intensional predicate *is looking for* corresponds to a two-place predicate with the second argument being a kind-level variable. If *whales* appears in the undergoer slot it will restrict possible undergoer objects to instances of the kind WHALE:

(22) *is looking for*:
[e E | look-for(E) & loc(e,E) & actor(e,x) & undergoer(E,Y)]
↓ restriction
is looking for whales:
[U e E | look-for(E) & loc(e,E) & actor(e,x) & undergoer(E,U) & whale(U) & pl(U)]
↓ a-instantiation
the lookout is looking for whales:
[v V U e E | lookout(V) & loc(v,V) & look-for(E) & loc(e,E) & actor(e,v) & under-goer(E,U) & whale(U) & pl(U)]

5   Summary

The aim of this paper was to suggest that obligatorily property-composing noun phrases like Maori *he* phrases should be viewed as kind terms. The semantic function of the article *he* is to d-instantiate a thematic kind argument, i.e. to replace it by a kind reference marker. In the semantic composition, this kind (=property-as-individual) serves to restrict the set of possible event participants to instances of itself. I explicate this process with respect to example (4):

(23) *Ka kite-a ... e teetahi kaititiro*:
[v V e E | lookout(V) & loc(v,V) & spot(E) & loc(e,E) & perceiver(e,v) & object-of-perception(E,Y)]
↓ restriction
*Ka kite-a **he tohora** e teetahi kaititiro*:
[U v V e E | lookout(V) & loc(v,V) & spot(E) & loc(e,E) & perceiver(e,v) & object-of-perception(E,U) & whale(U)]

This way of dealing with the Maori article *he* extends to Tongan unaccented definites as well as to so-called "non-referential" noun phrases in English. My proposal implies a very simple syntax-semantic mapping in the nominal realm: Bare NPs in syntactic argument positions and NPs accompanied by non-quantificational determiners *always* introduce a reference marker into the discourse.

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