

## Behavior-related unergative verbs<sup>1</sup>

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**Abstract.** In languages such as French, it is possible to derive from common or proper nouns unergative verbs that intuitively describe ways of behaving, for example, *diplomatiser* ‘behave like a diplomat’. This paper focuses on the semantics of these verbs, in particular, on the semantic contribution of the incorporated noun, by looking at the entailment patterns between the verb (e.g. *diplomatiser* ‘behave like a diplomat’) and the corresponding noun (e.g. *être (un/une) diplomate* ‘be a diplomat’). The analysis proposed explicitly captures the figurative reading of *être un/une diplomate* ‘be a diplomat’, the link between the meaning shift of N in this reading and in *diplomatiser* ‘behave like a diplomat’, as well as the entailment patterns observed.

**Keywords:** behavior-related verb, unergative verb, bare noun, indefinite NP, stereotype, figurative reading, lexical semantics.

### 1. Introduction

We call *behavior-related verbs* unergative verbs that intuitively describe ways of behaving. Nouns and adjectives which behavior-related verbs are derived from may be used to describe dispositional properties of individuals, as seen by the French examples in (1). Verbs derived from such nouns and adjectives describe actualizations of these dispositional properties, as in (2).

- (1) a. [...] mon doudou **est un vrai lézard**. Il adore se prélasser sous le soleil. (Internet)  
‘My honey is a true lizard. He loves basking under the sun.’  
b. Juliette **est une vraie diplomate** !  
‘Juliette is a true diplomat!’  
c. À propos de sa fille, Carla Bruni déclare [...] « Elle **est très Sarkozy**. Nicolas a trouvé son maître. » (Internet)  
‘About her daughter, Carla Bruni declares [...] “She’s very Sarkozy. Nicolas found his master.”’  
d. Comme d’habitude, [DSK] **était pédant**. (Internet)  
‘As usual, [DSK] was pedantic.’
- (2) a. On le dit aux bains de mer, quelque part, où il **lézarde** et flirte. (Colette)  
‘One says he’s at a seaside resort, somewhere, where he’s lazing around and flirting.’  
b. On **diplomatiser**, on discutaille, et les autres ils continuent d’implanter des colonies. (Internet)

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- ‘One diplomatizes, one quibbles, while the others continue to set up colonies.’
- c. Les spasmes financiers tenaillent l’Europe. Sarkozy **sarkoze** et Merkel **merkèlise**. (Internet)  
 ‘Financial spasms are tormenting Europe. Sarkozy is acting like Sarkozy and Merkel is acting like Merkel.’
- d. Quand on **pédantise**, on essaie d’accorder les participes correctement. (Internet)  
 ‘When one acts pedantically, one tries to make participles agree correctly.’

Behavior-related verbs can be derived from common nouns (e.g. French *lézard* ‘lizard’) or from proper nouns that refer to individuals associated with typical behavioral patterns. They can also be derived from a subset of evaluative adjectives (e.g. French *pédant* ‘pedantic’), sometimes called *propensity adjectives* (Oshima 2009). In this paper, we focus on behavior-related unergative verbs from nouns, of which further examples are given in (3) and (4).<sup>2</sup>

- (3) a. *aristotéliser* ‘develop thoughts like Aristotle’ (From proper nouns)  
 b. *bovaryser* ‘behave like Bovary’  
 c. *cicéroniser* ‘imitate the language/style of Cicero’  
 d. *merkéliser* ‘behave like Merkel; express political views close of those of Merkel’  
 e. *ronsardiser* ‘write like Ronsard’  
 f. *stendhaliser* ‘write or behave like Stendhal’
- (4) a. *athéiser* ‘to practise/teach atheism’ < *athée* ‘atheist’ (From common nouns)  
 b. *bateler* ‘make acrobatics, buffooneries’ < *bateleux* ‘acrobat, buffoon’  
 c. *babouiner* ‘to monkey around’ < *babouin* ‘baboon’  
 d. *diplomatiser* ‘behave like a diplomat’ < *diplomate* ‘diplomat’  
 e. *gaminer* ‘behave in a youngster way’ < *gamin* ‘youngster/kid’  
 f. *girouetter* ‘act like a weathercock, by changing one’s opinions or behavior’ < *girouette* ‘weathercock’  
 g. *guignoler* ‘behave like a Guignol’ < *guignol* ‘clown’ (Guignol is a famous puppet from Lyon)  
 h. *hussarder* ‘behave with courage, rapidity’ < *hussard* ‘hussar’  
 i. *lambiner* ‘act with slowness, languidity and nonchalance and lose one’s time’ < *lambin* ‘slowpoke’  
 j. *lézarder* ‘stay lazily in the sun’ < *lézard* ‘lizard’  
 k. *paladiner* ‘behave like a paladin’ < *paladin* ‘wandering knight’  
 l. *putasser* ‘behave like a prostitute’ < *pute* ‘whore’  
 m. *renarder* ‘behave like a fox’ < *renard* ‘fox’  
 n. *robinsonner* ‘live alone like Robinson; wander alone’ < *robinson* ‘person who lives alone into nature’  
 o. *rossarder* ‘move like a rossard’ < *rossard* ‘nasty guy’  
 p. *somnambuler* ‘act like a sleepwalker’ < *somnambule* ‘sleepwalker’

<sup>2</sup>In addition to their unergative use, a number of behavior-related verbs have formally identical counterparts that are (anti-)causatives, which we set aside in this paper.

What is the semantics of behavior-related unergative verbs? How does the noun contribute to the semantics of the verb? What is the semantic relation between the noun and the derived verb? To try to answer these questions, we first look at the entailment patterns between the noun and the corresponding behavior-related verb (in section 2). We then review the shortcomings of previous analyses of behavior-related verbs and the figurative reading of nouns (in sections 3 and 4) before presenting our own approach to these constructions (in section 5).

## 2. Entailment patterns

In section 2.1, we look at the entailment pattern from a behavior-related verb to the corresponding noun. We distinguish the generic from the episodic uses of these verbs and nouns, beginning with the former. In section 2.2, we examine the reverse entailment from the noun to the behavior-related verb.

### 2.1. Does a behavior-related verb entail the corresponding noun?

The absence of an entailment from a behavior-related verb to the corresponding noun is obvious when the noun is a proper noun, but it has also been observed when the noun is a common noun (see Aronoff 1980, Acquaviva 2009):

(5) He nurses well (but he's not a nurse).

However, in languages like French and German where nouns of profession can be bare or with a determiner, things are a bit less obvious, as the following examples show:<sup>3</sup>

(6) Juliette est  $\emptyset$  diplomate. (Literal only)  
'Juliette is a diplomat by profession.'

(7) Juliette est une diplomate.  
'Juliette is a diplomat.'  
a. 'Juliette is a diplomat by profession.' (Literal)  
b. 'Juliette has properties typical of diplomats.' (Figurative)

The entailment from the behavior-related verb to the noun is blocked if the noun is used as a bare NP, because the sentence is true only if the subject is 'N' by profession (de Swart et al. 2007, von Heusinger and Wespel 2007); see the (a)-sentences in (8) and (9). However, the entailment arguably succeeds if the noun used with an indefinite article on a figurative reading; see the (b)-sentences in (8) and (9).

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<sup>3</sup>In (6), *diplomate* is a noun. There is also an adjective *diplomate*, in which case (6) does not mean that Juliette is a diplomat by profession.

- (8) Marie putasse. (Generic)  
 ‘Marie behaves like a whore.’
- a.  $\nrightarrow$  Marie est  $\emptyset$  pute.  
 ‘Marie is a whore by profession.’
- b.  $\rightarrow$  Marie est une (vraie) pute. (Figurative)  
 ‘Marie is a (true) whore.’
- (9) Juliette diplomatise. (Generic)  
 ‘Juliette behaves like a diplomat.’
- a.  $\nrightarrow$  Juliette est  $\emptyset$  diplomate.  
 ‘Juliette is a diplomat by profession.’
- b.  $\rightarrow$  Juliette est une (vraie) diplomate. (Figurative)  
 ‘Juliette is a (true) diplomat.’

That the (b)-sentences are entailed is not a surprise, because on the figurative reading, the use of the noun has been argued to be correct as long as referent of the subject NP “behaves like an ‘N’ ” (von Heusinger and Wespel 2007) or has the typical properties of an ‘N’ (de Swart et al. 2007), whether or not the referent actually exercises the corresponding profession. This suggests that the noun is (re)interpreted in the same way in both the behavior-related verb and the figurative reading of the indefinite NP.

Note that although the figurative interpretation of nouns is mostly discussed in works devoted to copular sentences, it is in fact also available when the noun together with an indefinite article is used in other kinds of sentences. For instance, (10) does not entail that I met a diplomat by profession but can be used to mean that the person I met has properties typical of diplomats.

- (10) Hier, j’ai rencontré une (vraie) diplomate ! (Figurative)  
 ‘Yesterday, I met a (true) diplomat!’

The entailment pattern is basically the same for behavior-related verbs derived from proper nouns. For instance, (11a) does not entail (11b) but arguably entails (11c).

- (11) a. Juliette merkèlise. (Generic)  
 ‘Juliette behaves like Merkel.’
- b.  $\nrightarrow$  Juliette est Merkel. (Literal)  
 ‘Juliette is Merkel.’
- c.  $\rightarrow$  Juliette est une (vraie) Merkel. (Figurative)  
 ‘Juliette is a (true) Merkel.’

Note, however, that not every proper noun can be easily reinterpreted figuratively in an indefinite noun phrase. Proper nouns like *Bovary* and *Merkel* are special; according to Matushansky (2008: p. 609), they acquire the meaning “‘an individual having the typical properties associated with the unique individual that is called [*Bovary/Merkel*]’”. In other words, the proper name here seems

to have become common: a new kind is created, whose members share properties other than just having the same name.”

When a behavior-related verb is used episodically, which in French is achieved most saliently with the *passé composé*, it ascribes a certain way of behaving to the referent of the subject NP, as seen in (12a) and (13a). A noun on its figurative reading in an indefinite NP is most pragmatically natural when modified by an adjective such as *vrai* ‘true’, probably because it helps to exclude the literal reading (generally implausible in an episodic use) and thereby to select the figurative one, as seen in (12b) and (13b) (recall also (10)).

- (12) a. Hier, Marie a putassé.  
‘Yesterday, Marie behaved like a whore.’  
b. Hier, Marie a été une vraie pute. (Figurative)  
‘Yesterday, Marie was [lit. *has been*] a true whore.’
- (13) a. Hier, Juliette a diplomatisé.  
‘Yesterday, Juliette behaved like a diplomat.’  
b. Hier, Juliette a été une vraie diplomate. (Figurative)  
‘Yesterday, Juliette was [lit. *has been*] a true diplomat.’

Once the figurative reading of the noun is selected, (12a) and (13a) seem to entail (12b) and (13b), respectively.

## 2.2. Does a noun entail the corresponding behavior-related verb?

Intuitions about the entailment from a noun on its figurative reading to the corresponding behavior-related verb in generic sentence seem less sharp.<sup>4</sup>

- (14) a. Juliette est une diplomate. (Figurative)  
‘Juliette has properties typical of a diplomat.’  
b.  $\overset{?}{\rightarrow}$  Juliette diplomatisé. (Generic)  
‘Juliette behaves like a diplomat.’
- (15) a. Marie est une pute. (Figurative)  
‘Marie has properties typical of a whore.’  
b.  $\overset{?}{\rightarrow}$  Marie putasse. (Generic)  
‘Marie behaves like a whore.’

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<sup>4</sup>For a bare NP, the entailment from a noun to the corresponding behavior-related verb does not go through because one can be a diplomat by profession without behaving like a diplomat (consider the case of atypical diplomats).

- (16) a. Marie est une (vraie) Bovary. (Figurative)  
 ‘Marie is a (true) Bovary (has properties typical of Bovary).’  
 b.  $\overset{?}{\rightarrow}$  Marie bovaryse. (Generic)  
 ‘Marie behaves like Bovary.’

Two differences between the noun and the corresponding behavior-related verb account for the hesitation to endorse the entailments in (14)–(16).

Firstly, while the property ascribed by the noun on a figurative reading may be stative or eventive, the property ascribed by a behavior-related verb may only be eventive. For example, (14a) may be true if Juliette resembles typical diplomats in that she is well-groomed and has an expensive briefcase. Such stative properties of diplomats do not make (14b) true. In order for (14b) to be true, Juliette has to *behave* like a typical diplomat (e.g. to express herself discreetly).

Secondly, a noun may also be understood as ascribing an intensional property that is never instantiated in an actual event, whereas a behavior-related verb in a generic sentence makes a generalization about the actual behavior of the referent of the subject NP. In other words, the difference between the (a)- and (b)-sentences in (14)–(16) is reminiscent of the difference between a purely dispositional and an habitual reading of generic sentences (see Dahl 1975, Krifka et al. 1995, Menéndez-Benito 2013). An habitual reading is an inductive generalization inferred from actual instances, whereas a purely dispositional reading normally does not entail actual instances. Consider (17) in this respect.

- (17) This machine crushes oranges.  
 a. This machine regularly crushes oranges. (Habitual)  
 b. This machine has the disposition to crush oranges. (Purely dispositional)

Note that a behavior-related verb in a generic sentence has only an habitual reading:

- (18) Juliette diplomatisé.  
 a. #‘Juliette has the disposition to behave like a diplomat.’ (Purely dispositional)  
 b. ‘Juliette regularly behaves like a diplomat.’ (Habitual)

In contrast, a noun on its figurative use can in principle have both an habitual and a purely dispositional reading. For instance, if Juliette is a newborn, a fortune-teller could assert (11c) if she believes Juliette to be a Merkel *en puissance* (even if Juliette has obviously not yet had the opportunity to exercise this power). However, the fortune-teller could not truthfully assert (11a) of Juliette in the same situation.

These two differences explain the reluctance to endorse the entailment from (14a)/(15a)/(16a) to (14b)/(15b)/(16b): it succeeds only on a habitual reading of the (a)-sentences and in a context where the property ascribed is eventive.

We summarize our observations as follows. Firstly, on a generic and episodic reading, a behavior-related verb (e.g. *Juliette diplomatiser* ‘Juliette behaves like a diplomat’; recall (9)) entails the corresponding noun (e.g. *Juliette est une diplomate* ‘Juliette has properties typical of diplomats’; recall (9b)) on its figurative reading. This suggests that the noun is reinterpreted in a similar way in both cases. Secondly, in a generic sentence, a behavior-related verb only allows for an habitual reading and ascribes a typical eventive property of ‘N’ to the referent of the subject NP, whereas the corresponding noun may have either an habitual or a purely dispositional reading, attributing either a typical eventive or a typical stative property of ‘N’ to the referent of the subject NP.

### 3. Previous analyses of behavior-related verbs

In English, behavior-related verbs are either derived without a suffix (the “zero-derived denominal verbs” of Aronoff 1980) or with the suffix *-ize/-ify*.<sup>5</sup> Previous analyses of *-ize/-ify* verbs for English (*despotize*, *hooliganize*, *Marxize*) have argued that on the relevant reading, which is often called *similative*, the semantics of these verbs involve an unarticulated comparative component (see Plag 1999, Lieber 1998, 2004):

(19) “act in a way characterized by (an) ‘N’; imitate the manner of (an) ‘N’ ” (Similative)

Plag (1999: 137) posits a single meaning for *-ize*, shown in (20), from which he aims to derive the similative reading. His analysis adopts a Lexical Conceptual Structure approach. Note that the underlined component in (20) is optional and is not active in the intransitive use of these verbs.

(20) CAUSE ([ ]<sub>i</sub>, [GO ([Property, Thing ]<sub>Theme, Base</sub>; [TO[Property, Thing ]<sub>Base/Theme</sub>]])

Plag proposes that the noun within the verb is interpreted metonymically and refers to the ideas or the manners of ‘N’. For instance, in *Marxize*, the proper noun refers to a body of Marx’s ideas. Following (20), the verb in its intransitive use is primarily interpreted as ‘go to Marx’s ideas’, that is, to adopt Marx’s ideas. The similative reading is “the result of the inference that if one applies the ideas or manners of a certain person, one acts like that person” (pp. 139–140).

Lieber (2004) proposes that the similative reading lies outside the core meaning of *-ize* verbs and corresponds to a sense extension of the core. The general meaning skeleton she attributes to *-ize*, not given here, has the rough paraphrase “[x does something to y] such that [x causes y to become z/to go to z]” (p. 82). In the sense extension corresponding to the similative reading, the second subevent is dropped, which leaves the first subevent (“[x does something to y]”), corresponding to the standard schema for activity verbs (pp. 86–87). Through a particular pattern of indexing, the base noun is then identified with the highest argument of the affixal skeleton (the subject), leading to an interpretation of (e.g.) *Marxize* as “x Marx-does.” This, she suggests, corresponds

<sup>5</sup>In French, *-iser* and *-ifier* are the corresponding suffixes. However, for several verbs, French usage varies between the “zero-derived” and the “*-iser/-ifier* derived” variants, as in *sarkozer/sarkozyser* ‘behave like Sarkozy’, *cabotiner/cabotiniser* ‘ham it up; overact’, and *babouiner/babouiniser* ‘monkey around’.

to the expected meaning if we assume that “to ‘N’-do” means something like “to do as (an) ‘N’ does,” for example, “to do as Marx does” (p. 88).

Both of these approaches have the merit of trying to provide a unified meaning for *-ify/-ize* verbs. But neither of them manages to capture the semantics of these verbs on their unergative uses. Plag’s analysis forces one to postulate that these verbs are primarily change-of-location verbs and that the simulative reading is derived from this basic use. But this predicts that on the simulative reading, unergative verbs with *-ize* exhibit the properties characteristic of change-of-state verbs, which is not supported by the data. Lieber’s analysis does not make explicit what “to ‘N’-do” should mean, nor does it state where the reinterpretation as “to do as ‘N’ does” comes from. Furthermore, neither of these two analyses captures the correlation observed above between the meaning shift of the noun in behavior-related verbs and in the figurative reading of indefinite NPs. They also do not account for the fact that the events denoted have to be typical for ‘N’. For example, if Trump accidentally drove his car yesterday like Obama did on January 15, 2015, nothing in these analyses would prevent (21) as being an accurate description of what happened.

(21) Trump obamized yesterday.

However, the intuition is that Trump’s driving the way he did yesterday does not suffice to make (21) true, whereas it does suffice to make (e.g.) *Trump drove like Obama yesterday* true. Lieber or Plag might object that only habits of Obama can be taken into account in a definition of a manner (e.g. his habitual way of driving). But (21) would also not seem to be true if Trump outright imitated Obama’s driving, because this property would not appear among the typical properties that speakers commonly attribute to Obama.

#### 4. Previous analyses of the figurative reading of nouns

Since the meaning shift of a noun to a figurative reading in the corresponding behavior-related verb is the same as that of the noun in combination with an indefinite article, one could try to apply a previous analysis of the figurative reading of the noun with an indefinite article to the interpretation of the noun in behavior-related verbs. Unfortunately, existing accounts of these nouns do not capture their figurative reading even if the contrast with the competing bare noun is often observed. Take, for instance, de Swart et al. (2007), who provide one of the most developed analyses of such nouns. According to them, *diplomate* ‘diplomat’ in its bare version (recall (6)) denotes a capacity (of type *e*), which is then type-shifted to a set expression via their operator CAP. In the indefinite variant (e.g. *un/une diplomate* ‘a diplomat’; recall (7)), the determiner triggers a coercion from a capacity to a kind (also of type *e*), followed by the type-shifting to a set expression via the application of Carlson’s operator REL (which originates from the determiner). As a result, (7) is said to mean that Juliette is in the set of entities that realizes the kind ‘diplomat’. However, as von Heusinger and Wespel (2009) observe, this seems to correctly capture only the literal reading of such a sentence.

Le Bruyn (2010: 144) suggests that the figurative reading can, in fact, be seen as a reinterpretation of the noun as a kind (which he assumes to be basically a capacity noun, following de Swart et al.

2007): “[...] we look for inherent properties we associate with [diplomats] and predicate those of the subject.” However, Le Bruyn does not show how one could distinguish between the figurative and the literal readings of an indefinite NP in this way. It seems that another operation on the set of properties of the kind would be required in order to distinguish between these two readings.

Von Heusinger and Wespel (2007: sect. 5) also try to account for the figurative reading of an indefinite NP, but they do not provide the details either. Their proposal is that on this reading, an indefinite NP denotes *manifestations* of the kind ‘N’. Accordingly, sentences such as (7) assert that the referent of the subject is in the set of manifestations of the kind ‘N’. We may reconstruct their proposal as follows (where *rel* again is Carlson’s realization operator):

$$(22) \quad \llbracket \text{a diplomat} \rrbracket = \lambda x_m [\text{rel}(x_m, \text{diplomat}_k)]$$

(The set of manifestations  $x_m$  of the kind ‘diplomat’)

Their strategy is then to construe manifestations of the kind  $\text{diplomat}_k$  as individuals that have properties typical of diplomats. Even so, in the absence of a longer story about how manifestations of a kind are distinguished from stages or realizations of a kind, this treatment of manifestations, which is formally parallel to the treatment of stages, makes manifestations of a kind look suspiciously similar to stages of a kind. The change in terminology alone does not guarantee a difference. Arguably, the denotation in (22) simply gives the stages or realizations of the kind ‘diplomat’, redubbed as “manifestations.”<sup>6</sup>

## 5. A new approach

In this section, we sketch a new approach to behavior-related verbs derived from common nouns, as well as to the figurative reading of indefinite NPs (in section 5.1), and then we extend it to proper nouns (in section 5.2). The primary aim of this approach is to account for the entailment pattern illustrated in (8) and (9), and the lack of this pattern witnessed in (14)–(16).

### 5.1. Behavior-related verbs derived from common nouns

As various previous authors have suggested, the relevant part of the corresponding noun meaning in a behavior-related verb is the typical – and by “typical” we now mean stereotypical or prototypical – properties associated with the noun meaning, though we will speak of stereotypical properties (i.e. stereotypes) and assume that prototypical properties are among them. The initial idea is to postulate a relation *stereotype* between nominal properties  $N$  and stereotypes  $S$ , as in (23), such that  $S$  is a stereotype (i.e. a stereotypical property) of  $N$ . For example, if  $N$  were *diplomat*, then *stereotype*( $S$ , *diplomat*) would state that  $S$  is a stereotype of *diplomat* (i.e. of diplomats), for example, being discreet or carrying a nice briefcase or being well-groomed.

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<sup>6</sup>To be fair, von Heusinger and Wespel do offer informal reflections on how manifestations and stages differ, but the difference in their formal analysis is ultimately due to an index (“m” for manifestations versus “s” for stages).

(23)  $\lambda N \lambda S. \text{stereotype}(S, N)$  ‘ $S$  is a stereotype of  $N$ ’ (type  $\langle\langle e, t \rangle, \langle\langle e, t \rangle, t \rangle\rangle$ )

In (23), we assume for simplicity a classical, non-kind treatment of noun meanings as predicates of individuals, but our approach could be recast using kinds if desired. The relation *stereotype* could also be intensionalized in various ways, for example, it could be made world-dependent and/or context-dependent, but this is not crucial for our present purposes. Note that although *stereotype* is an undefined relation in our approach, the hope is that this relation is needed independently of our analysis of behavior-related verbs. Even so, there are three principles that apply to *stereotype* as we conceive of this relation. The first principle says that every stereotype  $S$  of a nominal property  $N$  is a property of an individual  $x$  or a property of a state  $s$  or a property of an event  $e$ :

(24) *Principle.*  $\forall S(\exists N(\text{stereotype}(S, N)) \rightarrow \exists x(S(x)) \vee \exists s(S(s)) \vee \exists e(S(e)))$

The second principle says that if  $S$  is a stereotype of  $N$ , then  $S$  does not entail  $N$ , which is to say that  $S$  is not a hyponym of  $N$ :

(25) *Principle.*  $\forall S \forall N(\text{stereotype}(S, N) \rightarrow \neg \forall x(S(x) \rightarrow N(x)))$

Finally, the third principle informally states that if  $S$  is a stereotype of  $N$ , then  $S$  is based on the “facts” of individuals that are  $N$ . More formally and verbosely, this principle says that if  $S$  is a stereotype of  $N$ , then there is an  $x$  such that  $N$  applies to  $x$ , and either  $S$  applies to  $x$ , or there is a relation  $R$  such that  $R$  is a thematic relation, and either there is a state  $s$  such that  $S$  applies to  $s$  and  $R$  holds between  $s$  and  $x$ , or there is an event  $e$  such that  $S$  applies to  $e$  and  $R$  holds between  $e$  and  $x$ . Another way of saying this is that this principle requires  $S$  to be “grounded” in an individual  $x$  that  $N$  applies to in such a way that either  $S$  applies to  $x$  or  $S$  applies to a state that  $x$  participates in or  $S$  applies to an event that  $x$  participates in.

(26) *Principle.*  $\forall S \forall N(\text{stereotype}(S, N) \rightarrow \exists x(N(x) \wedge (S(x) \vee (\exists R(\text{thematic}(R) \wedge (\exists s(S(s) \wedge R(s, x)) \vee \exists e(S(e) \wedge R(e, x)))))))$

In view of this third principle, it will be useful to define a relation *exhibit* between individuals  $x$  and properties  $S$  and  $N$  (“ $x$  exhibits  $S$  with respect to  $N$ ”) such that  $S$  is a stereotype of  $N$ , and either  $S$  applies to  $x$ , or there is a relation  $R$  such that  $R$  is a thematic relation, and either there is a state  $s$  such that  $S$  applies to  $s$  and  $R$  holds between  $s$  and  $x$ , or there is an event  $e$  such that  $S$  applies to  $e$  and  $R$  holds between  $e$  and  $x$ :

(27) *Definition.*  $\text{exhibit}(x, S, N)$  (“ $x$  exhibits  $S$  with respect to  $N$ ”) :=  $\text{stereotype}(S, N) \wedge (S(x) \vee (\exists R(\text{thematic}(R) \wedge (\exists s(S(s) \wedge R(s, x)) \vee \exists e(S(e) \wedge R(e, x))))))$

After this preface on the relation *stereotype*, let’s turn to the question of how behavior-related verbs are derived, using *diplomatise* ‘behave like a diplomat’ as an example. The noun *diplomate* ‘diplomat’ is straightforwardly analyzed as the following predicate of individuals:

(28) diplomate ('diplomat')  $\rightsquigarrow \lambda x.\text{diplomat}(x)$

Applying the relation stereotype in (23) to this predicate, we derive the set of stereotypes  $S$  of diplomats:

(29)  $[\lambda N \lambda S.\text{stereotype}(S, N)](\lambda x.\text{diplomat}(x)) = (\text{application})$   
 $\lambda S.\text{stereotype}(S, \lambda x.\text{diplomat}(x))$   
 'The set of stereotypes  $S$  of diplomats'

In (29), the stereotypes  $S$  of diplomats may be properties of individuals, states, or events (recall (24)), but since behavior-related verbs from nouns are eventive (indeed, also agentive), a treatment of the verbalizing suffix *-iser* should be restricted to those stereotypes  $S$  that are *eventive*. Furthermore, instead of imagining that the meaning of *-iser* applies to a predicate of stereotypes such as the one in (29), it seems more natural in light of the data to think of *-iser* as itself introducing stereotypes, for otherwise it would not be clear what element introduces them into the derivation.<sup>7</sup> Finally, we need to posit a notion of *behaving*, which is captured by an event predicate *behave*. These considerations motivate the following analysis of *-iser*, which is officially "*-iser<sub>n</sub>*" because it is intended for nominal predicates corresponding to common nouns:

(30) *-iser<sub>n</sub>* ('behave like')  $\rightsquigarrow \lambda N \lambda x \lambda e.\text{agent}(e, x) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}(S, N) \wedge S(e))$

The predicate in (30) applies to a nominal predicate  $N$ , an individual  $x$ , and an event  $e$ , and yields the conditions that  $x$  is the agent of  $e$ ,  $e$  is an event of behaving, and there is a property  $S$  such that  $S$  is a stereotype of  $N$  and  $S$  holds of  $e$ .

Applying this relation to the nominal predicate in (28), we obtain the following analysis of *diplomatiser<sub>n</sub>*:

(31) *diplomat-iser<sub>n</sub>* ('behave like a diplomat')  $\rightsquigarrow$   
 $[\lambda N \lambda x \lambda e.\text{agent}(e, x) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}(S, N) \wedge S(e))](\lambda x'.\text{diplomat}(x')) = (\text{application})$   
 $\lambda x \lambda e.\text{agent}(e, x) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}(S, \lambda x'.\text{diplomat}(x')) \wedge S(e))$

Applied to an individual  $x$  and an event  $e$ , this relation yields the conditions that  $x$  is the agent of  $e$ ,  $e$  is an event of behaving, and there is a property  $S$  such that  $S$  is a stereotype of diplomats and  $S$  holds of  $e$ .

Applying the relation in (31) to the individual constant *juliette* (for *Juliette*), we derive the predicate of events  $e$  such that Juliette is the agent of  $e$ ,  $e$  is an event of behaving, and there is a property  $S$  such that  $S$  is a stereotype of diplomats and  $S$  holds of  $e$ :

<sup>7</sup>We assume a null suffix in the case of "zero-derived" behavior-related verbs (recall (5) and fn. 5), but another strategy would be imaginable (e.g. a redundancy rule).

- (32) Juliette diplomatiser<sub>n</sub> ('Juliette behave like a diplomat')  $\rightsquigarrow$  (via application)  
 $\lambda e.\text{agent}(e, \text{juliette}) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}(S, \lambda x'.\text{diplomat}(x')) \wedge S(e))$

The idea that the meaning of a behavior-related verb contains the component *behave* is motivated by the contrast between the answers in (33a) and (33b) to the question in (33).

- (33) Comment est-ce que Juliette s'est comportée ?  
 'How did Juliette behave?'
- a. Elle a diplomatisé.  
 'She behaved like a diplomat.'
- b. #Elle a mangé une pomme.  
 'She ate an apple.'

Turning to the use of a noun on its figurative reading in an indefinite NP (recall e.g. (7)), we can again employ the relation *stereotype* to treat this reading. However, in this case, it is arguably the meaning of the indefinite article *un/une* 'a(n)' that introduces stereotypes. There are *two* readily available ways of analyzing *un/une* 'a(n)' as introducing stereotypes.

The *first* is give *un/une* 'a(n)' a non-quantificational (predicative) analysis: the meaning of the indefinite article<sup>8</sup> applies to a nominal property *N* and yields a predicate of individuals *x* such that there exists a stereotype *S* that *x* exhibits with respect to *N* (recall (27)), as in (34).

- (34)  $\text{un/une}_{fnq}$  ('a(n)')  $\rightsquigarrow \lambda N \lambda x. \exists S(\text{exhibit}(x, S, N))$

Applied to the predicate *diplomat*, this meaning of the indefinite article yields the following predicate, which denotes the set of individuals *x* such that there is a stereotype *S* that *x* exhibits with respect to diplomats:

- (35)  $\text{un/une}_{fnq}$  diplomate ('a diplomat')  $\rightsquigarrow$   
 $[\lambda N \lambda x. \exists S(\text{exhibit}(x, S, N))](\lambda x'.\text{diplomat}(x')) = (\text{application})$   
 $\lambda x. \exists S(\text{exhibit}(x, S, \lambda x'.\text{diplomat}(x')))$

The following simple-minded analysis of the copula *est* 'is' (ignoring tense) takes the copula to apply to a predicate *P* of individuals in order to yield a relation between states *s* and individuals *x* such that *P* applies to *x* and *x* is the theme of *s*:

- (36)  $\text{est}$  ('is')  $\rightsquigarrow \lambda P \lambda x \lambda s. P(x) \wedge \text{theme}(s, x)$

Observe that the states *s* denoted by this analysis of *est* 'is' are "light" in that they barely have any descriptive content: the only condition is that the individuals *x* are their themes. This "lightness" suggests the following innocent principle, which says that if an individual *x* stands in a thematic relation *R* to an event *e*, then there is a state *s* such that *x* is the theme of *s*:

<sup>8</sup>Which is designated by  $\text{un/une}_{fnq}$ , where the subscript "fnq" stands for "figurative non-quantificational."

(37) *Principle.*  $\forall x(\exists R\exists e(\text{thematic}(R) \wedge R(e,x)) \rightarrow \exists s(\text{theme}(s,x)))$

In other words, if an individual  $x$  participates (thematically) in an event  $e$ , then there is a state  $s$  that  $x$  is the theme of. This principle will be useful below.

Applying the analysis of *est* ‘is’ in (36) to the predicate in (35), we derive the relation between states  $s$  and individuals  $x$  such that there is a stereotype  $S$  that  $x$  exhibits with respect to diplomats and  $x$  is the theme of  $s$ :

(38) *est un/une<sub>fnq</sub> diplomate* (‘is a diplomat’)  $\rightsquigarrow$  (via application)  
 $\lambda x\lambda s.\exists S(\text{exhibit}(x,S,\lambda x'.\text{diplomat}(x')) \wedge \text{theme}(s,x))$

If this relation is applied to the individual constant *juliette*, we obtain the predicate of states  $s$  such that there is a stereotype  $S$  that Juliette exhibits with respect to diplomats and Juliette is the theme of  $s$ :

(39) *Juliette est une<sub>fnq</sub> diplomate* (‘Juliette is a diplomat’)  $\rightsquigarrow$  (via application)  
 $\lambda s.\exists S(\text{exhibit}(\text{juliette},S,\lambda x'.\text{diplomat}(x')) \wedge \text{theme}(s,\text{juliette}))$

We will briefly mention the *second* readily available way of analyzing *un/une* ‘a(n)’ as introducing stereotypes, which is a quantificational analysis (hence *un/une<sub>fq</sub>*):

(40) *un/une<sub>fq</sub>* (‘a(n)’)  $\rightsquigarrow \lambda N\lambda R\lambda v.\exists x(\exists S(\text{exhibit}(x,S,N)) \wedge R(v,x))$

In (40),  $R$  is a relation (corresponding to the VP meaning) between eventualities (events or states)  $v$  and individuals  $x$ . Applied to the predicate *diplomate*, the following quantifier is derived, which if applied to a relation  $R$  between eventualities and individuals, yields a predicate of eventualities  $v$  such that there is an individual  $x$  and a stereotype  $S$  such that  $x$  exhibits  $S$  with respect to diplomats and  $R$  holds between  $v$  and  $x$ :

(41) *un/une<sub>fq</sub> diplomate* (‘a diplomat’)  $\rightsquigarrow$  (via application)  
 $\lambda R\lambda v.\exists x(\exists S(\text{exhibit}(x,S,\lambda x'.\text{diplomat}(x')) \wedge R(v,x))$

This use of *un/une<sub>fq</sub> diplomate* ‘a diplomat’, which is figurative and quantificational, figures in sentences such as (10).

We conclude this section with the remark that the analyses presented above allow us to account for why the sentence in (9) with *diplomatiser<sub>n</sub>* ‘behave like a diplomat’ (see (32)) entails the sentence in (9b) with *une<sub>fnq</sub> diplomate* ‘a diplomat’ (see (38)), ignoring tense. This entailment is due to the following fact:

$$(42) \text{ Fact. } \forall e(\text{agent}(e, \text{juliette}) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}(S, \lambda x'. \text{diplomat}(x')) \wedge S(e)) \rightarrow \exists s(\exists S(\text{exhibit}(\text{juliette}, S, \lambda x'. \text{diplomat}(x')) \wedge \text{theme}(s, \text{juliette})))$$

The proof of this fact is straightforward and uses the definition in (27) and the principle in (37). Intuitively, this entailment is valid because a stereotype that makes (9) true is necessarily eventive, but then it counts as a stereotype that also makes (9b) true.

We can also show that the reverse entailment is not valid (recall also (14)), because a stereotype that makes (9b) true need not be eventive, whereas a stereotype that makes (9) true is necessarily eventive.

## 5.2. Behavior-related verbs derived from proper nouns

Unsurprisingly, we adopt the same basic approach to behavior-related verbs from proper nouns, but with the difference that the stereotypes are now of individuals as opposed to nominal properties (sets of individuals). Note, however, that the relation *stereotype* as given in (23) is not applicable to individuals directly, and so we need to define a derived relation, designated by *stereotype'*, between stereotypes *S* and individuals *x*, which effectively treats *x* as a singleton (the set of individuals identical to *x*), as shown in (43).

$$(43) \text{ Definition. } \lambda x \lambda S. \text{stereotype}'(S, x) \text{ (“} S \text{ is a stereotype of } x \text{”)} := \lambda x. [[\lambda N \lambda S. \text{stereotype}(S, N)](\lambda x'. x' = x)] = (\text{application}) \lambda x \lambda S. \text{stereotype}(S, \lambda x'. x' = x)$$

As an illustration, let's consider the proper noun *Merkel* and its standard treatment as an individual constant, here *merkel*:

$$(44) \text{ Merkel} \rightsquigarrow \text{merkel}$$

Applying the relation *stereotype'* to this constant, we obtain the set of stereotypes of *Merkel*:

$$(45) \lambda S. \text{stereotype}'(S, \text{merkel}) \text{ ‘The set of stereotypes } S \text{ of Merkel’}$$

In order to derive the behavior-related verb *merkéliser* ‘behave like *Merkel*’, we need a version of *-iser* (cf. *-iser<sub>n</sub>* in (30)) that is applicable to individuals instead of nominal properties. This version, *-iser<sub>pn</sub>* (“pn” for “proper noun”), is analogous to *-iser<sub>n</sub>* but makes use of *stereotype'* in place of *stereotype*:

$$(46) \text{-iser}_{pn} \text{ (‘behave like’)} \rightsquigarrow \lambda y \lambda x \lambda e. \text{agent}(e, x) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}'(S, y) \wedge S(e))$$

The behavior-related verb *merkéliser* ‘behave like *Merkel*’ is then derived via the application of *-iser<sub>pn</sub>* to *Merkel*:

(47) merkél-iser<sub>pn</sub> ('behave like Merkel')  $\rightsquigarrow$  (via application)  
 $\lambda x \lambda e. \text{agent}(e, x) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}'(S, \text{merkel}) \wedge S(e))$

As seen in (47), the result is a relation between events  $e$  and individuals  $x$  such that  $x$  is the agent of  $e$ ,  $e$  is an event of behaving, and there is an  $S$  such that  $S$  is a stereotype of Merkel and  $S$  applies to  $e$ .

Applied to the individual constant *juliette*, the relation in (47) yields (ignoring tense) the predicate of events  $e$  such that Juliette is the agent of  $e$ ,  $e$  is an event of behaving, and there is an  $S$  such that  $S$  is a stereotype of Merkel and  $S$  applies to  $e$ :

(48) Juliette merkél-iser<sub>pn</sub> ('Juliette behave like Merkel')  $\rightsquigarrow$  (via application)  
 $\lambda e. \text{agent}(e, \text{juliette}) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}'(S, \text{merkel}) \wedge S(e))$

The present approach can be naturally extended to treat examples where a proper noun appears with an indefinite article:

- (49) a. Juliette est une (vraie) Merkel.  
 'Juliette is a (true) Merkel.'  
 b. Juliette est une autre Merkel.  
 'Juliette is another Merkel.'

To treat the figurative use of the indefinite NP in (49), it is first convenient to define a derived relation *exhibit'* that is based on the relation *stereotype'*, analogous to the relation *exhibit* from (27) (which is based on *stereotype*):

(50) *Definition.* *exhibit'*( $x, S, y$ ) ("x exhibits  $S$  with respect to  $y$ ") :=  
 $\text{stereotype}'(S, y) \wedge$   
 $(S(x) \vee (\exists R(\text{thematic}(R) \wedge (\exists s(S(s) \wedge R(s, x)) \vee \exists e(S(e) \wedge R(e, x))))))$

The next step is to propose an analogue of *un/une<sub>fnq</sub>* from (34) that makes use of the relation *exhibit'*, applying to individuals:

(51) *un/une<sub>fnq</sub>* ('a(n)')  $\rightsquigarrow \lambda y \lambda x. \exists S(\text{exhibit}'(x, S, y))$

Applied to *merkel*, this relation yields the predicate of individuals  $x$  such that there is a stereotype  $S$  that  $x$  exhibits with respect to Merkel:

(52) *une<sub>fnq</sub>* Merkel ('a Merkel')  $\rightsquigarrow$  (via application)  
 $\lambda x. \exists S(\text{exhibit}'(x, S, \text{merkel}))$

If the meaning of *est* 'is' given in (36) is then applied to this predicate, the following relation between states and individuals is derived (cf. (38)):

- (53)  $\text{est une}_{fnq'} \text{Merkel}$  ('is a Merkel')  $\rightsquigarrow$  (via application)  
 $\lambda x \lambda s. \exists S(\text{exhibit}'(x, S, \text{merkel})) \wedge \text{theme}(s, x)$

Finally, if we apply this relation to the individual constant *juliette*, we obtain the predicate of states *s* such that there is a stereotype *S* that Juliette exhibits with respect to Merkel and Juliette is the theme of *s*, which is arguably a reasonable rendering of *une (vraie/autre) Merkel* 'a (true)/another Merkel' in (49) (neglecting the adjective):

- (54)  $\text{Juliette est une}_{fnq'} \text{(vraie) Merkel}$  ('Juliette is a (true) Merkel')  $\rightsquigarrow$  (via application)  
 $\lambda s. \exists S(\text{exhibit}'(\text{juliette}, S, \text{merkel})) \wedge \text{theme}(s, \text{juliette})$

We point out that on this approach, *Juliette merkèlise<sub>pm</sub>* 'Juliette behaves like Merkel' entails the sentence in (49), but not vice versa, for the same reasons as before (cf. (42)):

- (55) *Fact.*  $\forall e(\text{agent}(e, \text{juliette}) \wedge \text{behave}(e) \wedge \exists S(\text{stereotype}'(S, \text{merkel}) \wedge S(e)) \rightarrow$   
 $\exists s(\exists S(\text{exhibit}'(\text{juliette}, S, \text{merkel})) \wedge \text{theme}(s, \text{juliette}))$

In closing, a fact described in section 2.2 is still in need of an explanation. Recall that the generic reading of a noun used figuratively may be habitual or purely dispositional, whereas the generic reading of a behavior-related verb may only be habitual. Why is the purely dispositional reading blocked for behavior-related verbs? Although we cannot provide a detailed answer to this question, we believe that the element responsible for this phenomenon is the predicate *behave* that is part of the denotation of behaviour-related verbs, but not of the nouns from which they derive. To say of a referent that she *behaves* in a stereotypical way seems to only make sense if the referent has actually exhibited this behavior before, whereas to say of a referent that she has a stereotypical property allows for the possibility that this property is purely dispositional.

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