

# Intentionality in the grammar: Restart

## Three puzzles about polarity sensitive items in infinitives

### 1 Introduction

The goal of this paper is to attract attention of the linguistic community to the role the interpretation of an action as intentional vs. unintentional plays in the grammar. To that end, I focus on three concrete puzzles from the domain of polarity sensitivity. In each of these puzzles, interpretation of an action affects acceptability of a Polarity Sensitive Item (PSI). The first puzzle concerns strong/strict Negative Polarity Items (NPIs) or minimizers, such as *a damn thing*, which are reported to be acceptable in the complement of intentional control predicates, such as *refuse*, (1)a, but not in the complement of unintentional control predicates, such as *forget*, (1)b (Collins and Postal 2014):

- (1) a. Byron refused to do a damn thing.  
b. \*Jane forgot to do a fucking thing. (Collins and Postal, 2014: 228,98)

The second puzzle is about Positive Polarity Items (PPIs), such as *someone*. It has been observed in Szabolcsi 2004 that in the infinitival complement of *not want*, *someone* is interpretable under negation when the action is unintentional, (2)b, but not when the action is intentional, (2)b:

- (2) a. I don't want to call someone. (\*not>some)  
b. I don't want to offend someone. (<sup>ok</sup> not>some)  
(Szabolcsi, 2004: fn.10)

The third puzzle is a transposed Szabolcsi's observation whereby strong/strict NPIs, such as *a red cent*, become deviant in the complement of *not want* when the action is interpreted as unintentional, cf. (3)a with (3)b:

- (3) a. I don't want to give a red cent to the beggar.  
b. ??I don't want to win a red cent in this lottery.

We will see that the three puzzles can be analyzed uniformly once we add to the system a semantic mechanism distinguishing intentional vs. unintentional actions. In particular, I propose to view unintentional actions as 'epistemically accidental' in the sense that the agent of an unintentional action believes that his efforts are not enough to bring about the desired or foreseen situation and despite all his efforts the things may turn out otherwise. I argue that unintentional actions require the presence of a propositional operator which I dub *Luck* and model on the idea of 'epistemic luck' (e.g., Pritchard 2005). This idea has been used for separating accidental and non-accidental actions (Horst 2015, Pritchard 2016).

To show that the effect of interpreting an action as intentional vs. unintentional ('intentionality effect', for short) is not limited to the polarity system, I include the section that demonstrates that the three puzzles regarding PSIs are analogous to the so-called weakening of the disjoint reference effect (Zaring, 1985; Ruwet, 1984, 1991; Farkas, 1992; a.o.). I also add a section in which some other phenomena that exhibit the intentionality effect are listed. It goes beyond the scope of this paper to construct a unified analysis of all the phenomena with the intentionality effect. However, I believe that such an analysis is called for and we need to set up an ambitious program aiming at understanding the representation of intentionality in the grammar. On the one hand, as we will see, natural languages have developed multiple ways to mark the presence or absence of intentionality ranging from the nuanced distribution of PSIs (explored here) and availability of a co-referential interpretation in the disjoint reference effect configuration (our analogy) found in European languages to a dedicated 'out-of-control' morpheme in Lillooet (Salish) and different case marking in Hindi/Urdu, Georgian, and Central Pomo. On the other hand, philosophers who have pondered over questions about what intentions are and how they are manifested in human behaviour for centuries have come to the consensus that our capacity to intend and, more importantly, recognize and share intentions of others constitutes the foundation for social behaviour. It will be a miss to ignore the intentionality effect in linguistics whose goal is to explain subconscious language competence enabling humans to communicate with each other. This paper can be viewed as one of the first steps in the direction of constructing a unified theory for intentionality in the grammar. The goal is not only to explain the three puzzles about PSIs in infinitives but by explaining them, to advocate for a unified approach to all the phenomena exhibiting the intentionality effect and urge interested scholars to join the effort.

The paper is organized as follows: In sections 2-4, I present the three puzzles about PSI licensing in infinitival constructions, providing some necessary background on PSIs and explaining why the discussed observations are puzzling. Section 5 supplies an analogy between the three puzzles and weakening of the disjoint reference effect. Section 6 is a first step towards the analysis. It discusses the linguistic tests that can (and cannot) be used for distinguishing intentional vs. unintentional actions. In section 6, we will also see the introduction of the concept behind *Luck* and its semantics. Section 7 contains an analysis of the three puzzles and section 8 fills in some additional details of the analysis. In section 9, I list the linguistic phenomena that have been reported in the literature as exhibiting the intentionality effect. Section 10 concludes.

## 2 Puzzle #1: Collins and Postal's observation

Expressions, such as *jackshit<sub>A</sub>*, *a damn/fucking thing*, *a red cent*, *a living soul*, are NPIs with more restricted distribution compared to NPIs like *any* and *ever*.<sup>1</sup> In particular, the former, but not the latter, are restricted to Anti-Additive (AA) contexts, (4) and (5), and the former, but not the latter, have a locality restriction, (6) and (7).<sup>2</sup> Because of these two properties, we will refer to expressions, such as *jackshit<sub>A</sub>*, *a damn/fucking thing*, *a red cent*, *a living soul*, as 'strong/strict' NPIs, see, for example, Jackson 1995, van der Wouden 1997, Zwarts 1998, Szabolcsi 2004, Gajewski 2007, 2011, Collins and Postal 2014 (hereafter, CP2014).<sup>3</sup>

- (4)     a. Jerome doesn't know anything/*jackshit<sub>A</sub>* about Turkish.  
           b. At most half of the class knows anything/\**jackshit<sub>A</sub>* about Turkish. (CP2014: 39)
- (5)     a. Nobody gave any money/a red cent to the beggar.  
           b. Less than five people gave any money/\*a red cent to the beggar. (Honcoop 1998: 107)
- (6)     a. Nobody said anything/*jackshit<sub>A</sub>* to the detainee.  
           b. Nobody who said anything/\**jackshit<sub>A</sub>* to the detainee was released. (CP2014: 39)
- (7)     a. Nobody gave John any money/a red cent.  
           b. Nobody who gave John any money/\*a red cent is here.

Collins and Postal (2014: 231) observe that some negative predicates that select infinitival complements, such as *refuse*, *hesitate*, and *fail*, license strong/strict NPIs, (8), whereas others, such as *forget*, do not, (9). This contrast is not found with weak NPIs, such as *anything*, (10).

- (8)     a. Byron refused to do a damn thing.  
           b. Byron refused to take no for an answer.  
           c. Byron refused to give her the time of day. (CP2014: 228)
- (9)     a. \*Jane forgot to do a fucking thing.  
           b. \*Jane forgot to do *jackshit<sub>A</sub>*.  
           c. \*Jane forgot to drink a drop. (CP2014: 98)

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<sup>1</sup> Postal (2004) shows that expressions like *jackshit* and *squat* are ambiguous between 'anything' and 'nothing'. The subscript <sub>A</sub> is used as a reminder that in relevant examples, we consider only the 'anything' interpretation.

<sup>2</sup> A function *f* is Downward Entailing (DE) iff for any arbitrary *A*, *B*, if  $A \subseteq B \rightarrow f(B) \subseteq f(A)$ . A function *f* is Anti-Additive (AA) iff for any arbitrary *A*, *B*,  $f(A \cap B) = f(A) \cup f(B)$ , e.g., Zwarts 1998. As an illustration, consider examples in (i). (i)a is a positive episodic sentence, which is non-DE (in fact, it is Upward Entailing (UE) as the reverse entailment holds). (i)b shows that *at most* is DE, but not AA. (i)c demonstrates that *nobody* is both DE and AA. AA operators, such as *not* and *nobody*, are a proper subset of DE operators, such as *at most* and *less than n*.

- (i)     a. John danced or sang.  $\nRightarrow/\Leftarrow$  John danced and John sang.  
           b. At most 5 boys danced or sang.  $\Rightarrow/\Leftarrow$  At most 5 boys danced and at most 5 boys sang.  
           c. Nobody danced or sang.  $\Rightarrow/\Leftarrow$  Nobody danced and nobody sang.

<sup>3</sup> See also Giannakidou 2011 for a different view.

- (10) a. Anyway, the actress refused to sign anything and refused to pose for any photos...<sup>4</sup>  
 b. I hesitated to say anything because it is obvious you will never get it.<sup>5</sup>  
 c. The original search team failed to find anything.<sup>6</sup>  
 d. I totally forgot to write anything down about the next two murders...<sup>7</sup>

Collins and Postal's observation is summarized in (11):

- (11) a. refuse/hesitate/fail [<sub>Infinitive</sub> to V weak-NPI/strong-NPI ]  
 b. forget [<sub>Infinitive</sub> to V weak-NPI/\*strong-NPI ]

The puzzle is that it is difficult to pinpoint the property that distinguishes the predicates in (11)a from (11)b and is at the same time responsible for the difference between weak and strong/strict NPIs. To begin with, the contrast between (8) and (9) is problematic for Collins and Postal's system, as they point out themselves (CP2014: 231). According to CP2014, strong/strict NPIs are 'unary' NPIs as they have the following structure: *jackshit<sub>A</sub>* = [NEG SOME *jackshit<sub>A</sub>*] from which NEG(ation) can syntactically raise and adjoin to the main predicate. This explains why strong/strict NPIs are subject to the locality condition. We saw this condition in (6) and (7). Another illustration of the locality condition is given in (12). (12)a,b show that weak NPIs can be licensed across a complex NP, whereas strong/strict NPIs cannot, (12)c,d. It is well known that syntactic movement is banned across complex NPs, (13), therefore, according to CP2014, NEG from a unary NPI cannot raise and the sentence is ungrammatical.

- (12) a. I didn't find a person who knows any physics.  
 b. I didn't find a person who had ever been to France.  
 c. \*I didn't find a person who knows *jackshit<sub>A</sub>* about that.  
 d. \*I didn't find a person who told a living soul about his dreams. (CP2014: 94)

- (13) a. When do you believe that the moon will vanish?  
 b. \*When do you hold the belief that the moon will vanish? (CP2014: 111)

For Collins and Postal, weak NPIs are ambiguous between a unary structure and a reversal structure. In the latter case, the NPI incorporates two NEG's which get phonologically deleted: *any* = [NEG [NEG SOME]] and the main predicate can have an independent semantic NEG. The reversal structure allows weak NPIs to be licensed across islands because no syntactic movement is required. According to CP2014, the difference in the internal structure of strong/strict vs. weak NPIs explains the fact that the former but not the latter have the locality condition. This is schematized in (14).

- (14) a. I did NEG<sub>1</sub> find a person who knows [<NEG<sub>2</sub>> [<NEG<sub>3</sub>> SOME]] physics  
 b. \*I did NEG<sub>1</sub> find a person who knows [<NEG<sub>1</sub>> SOME *jackshit<sub>A</sub>*] about that

Collins and Postal's system straightforwardly accounts for the fact that strong/strict NPIs are licensed with Neg-raising predicates.<sup>8</sup> Neg-raising predicates are embedding predicates that license the inference from 'x not predicate *p*' to 'x predicate not *p*'. For instance, *believe* is a Neg-raising predicate, (15), but *say* is not, (16). The syntactic proposal for NPI licensing developed in CP2014 nicely captures that *believe* but not *say* allows strong/strict NPIs to be licensed, whereas weak NPIs are licensed under both *believe* and *say*, (17).

- (15) Sally doesn't believe that Sam danced at the party. ⇒  
 Sally believes that Sam didn't dance at the party.

- (16) Sally didn't say that Sam danced at the party. ⇏  
 Sally said that Sam didn't dance at the party.

<sup>4</sup> <http://www.agcwebpages.com/BLINDITEMS/2013/APRIL.html> b.

<sup>5</sup> <https://www.24hourcampfire.com/ubbthreads/ubbthreads.php/ubb/printthread/Board/29/main/230361/type/thread>

<sup>6</sup> <https://coolinterestingstuff.com/missing-treasures-of-the-world>

<sup>7</sup> <https://www.theonion.com/serial-killer-admits-he-s-lost-track-of-pattern-he-was-1819577930>

<sup>8</sup> More precisely, strong/strict NPIs that scope in the embedded clause are licensed only under Neg-raising predicates. For CP2014, some strong/strict NPIs can scope in the matrix clause, in which case they are felicitous under negated non-Neg-raisers, see CP2014.

- (17) a. I don't believe that John knows anything/jackshit<sub>A</sub> about linguistics.  
b. I didn't say that John knew anything/\*jackshit<sub>A</sub> about linguistics

The predicates in both (11)a and (11)b are not Neg-raising (nor are their paraphrases, e.g., *refuse*  $\approx$  *not accept*, *forget*  $\approx$  *not remember*). Therefore, Collins and Postal's system predicts (8) and (9) to be equally ungrammatical. Discussing this problem, Collins and Postal (2014: 228) note that sentences like (8)a, repeated as (18)a below, cannot have the structure as in (18)b where [NEG SOME ...] is a representation of a strong/strict (or unary) NPI. This is because the structure in (18)b will have the meaning in (18)c, which is an inadequate construal for (18)a. On the other hand, *a damn thing* unambiguously patterns with strong/strict NPIs, thus the unary structure is required.

- (18) a. Byron refused to do a damn thing.  
b. Byron refused to do [NEG<sub>1</sub> SOME damn thing]  
c. Byron refused to do nothing.

To solve this issue, the authors tentatively suggest that (18)a has a structure "with an additional NEG somewhere" (p.228). However, there are no evidence supporting this suggestion and more importantly, it is unclear why a similar stipulation cannot be made for verbs like *forget*.

An alternative view to the syntactic approach to strong/strict NPI licensing advocated by Collins and Postal (2014) claims that strong/strict NPIs, unlike weak NPIs, are licensed under the scope of AA operators, such as *not* and *nobody*, but not under simple Downward Entailing (DE) operators, such as *at most* and *less than n*, (4) and (5) (Jackson 1995, van der Wouden 1997, Zwarts 1998, Szabolcsi 2004, Gajewski 2007, a.o.). This alternative view also cannot account for the contrast between (8) and (9). It predicts both (8) and (9) to be equally acceptable because all predicates in (11) are AA. This is shown in (19).

- (19) a. Sally refused/hesitated/failed/forgot to eat or drink.  $\Rightarrow/\Leftarrow$   
b. Sally refused/hesitated/failed/forgot to eat and Jane refused/hesitated/failed/forgot to drink.

There are other properties that distinguish different types of infinitive embedding predicates. Although none of them has been reported as affecting NPI licensing, it is not inconceivable that we can find a good candidate for explaining the contrast between (8) and (9) among them. The list in (20), however, shows that none of these properties draws the correct line between the predicates in (11)a and (11)b and thus, can be used as a potential candidate for explaining Collins and Postal's observation.

- (20) Possible candidates for distinguishing the predicates in (11)a and (11)b  
a. Attitude predicates, e.g., *expect*, vs. non-attitudinal control verbs, e.g., *deserve*<sup>9</sup>  
*refuse*, *hesitate*, and *forget* are attitude predicates (Pearson 2016), *fail* is causative  
b. Subject control, e.g., *promise*, vs. object control, e.g., *force*<sup>10</sup>  
*refuse*, *hesitate*, *fail*, and *forget* are subject control predicates  
c. Implicative predicates, e.g., *manage*, vs. non-implicative predicates, e.g., *want*<sup>11</sup>

<sup>9</sup> Attitude predicates and non-attitudinal control verbs can be distinguished using a 'double vision' paradox, see Pearson 2016 p. 706. This paradox and the distinction between attitude predicates and non-attitudinal verbs will be discussed in section 8.

<sup>10</sup> This distinction is mentioned because object control predicates, such as *force*, *order*, and *tell*, allow strong/strict NPIs, (i), see CP2014. These verbs are not Neg-raising, (ii), which is again problematic for Collins and Postal's system.

- (i) a. \*Virginia forced/ordered/told Carmen to say jackshit<sub>A</sub> about compilers.  
b. Virginia didn't force/order/tell Carmen to say jackshit<sub>A</sub> about compilers. (CP2014: 81)
- (ii) a. Virginia didn't force/order/tell Carmen to sing.  
b. Virginia forced/ordered/told Carmen not to/to not sing. (ibid. p.81)

To account for the acceptability of (i)b, CP2014 suggest that *jackshit<sub>A</sub>* in this example scopes in the matrix clause. In other words, the only interpretation (i)b has is that there is nothing about compilers that Virginia ordered Carmen to say.

<sup>11</sup> Implicatives are predicates that guarantee inferences like '*x* (not) predicate *p*' to '*p*' or ' $\neg p$ '. For example, it is possible to infer that John didn't do the dishes from *John forgot to do the dishes*. To be more precise, *fail* and *forget* are two-way implicatives, whereas *hesitate* and *refuse* are one-way implicatives, see e.g. Karttunen 1971, 2012 for discussion.

*refuse, hesitate, fail, and forget* are implicative verbs (Kiparsky and Kiparsky 1970)  
d. Exhaustive control, e.g., *try*, vs. partial control, e.g., *agree*<sup>12</sup>  
*fail* and *forget* are exhaustive control; *refuse* is partial control (Landau 2000, Pearson 2016)

To anticipate our proposal, there is one property not mentioned in (20) that distinguishes *forget* from *refuse, hesitate, and fail*, namely, *forget* expresses an action that is unintentional/accidental. This can be seen from the behaviour of rational clauses introduced by *in order to* which can modify *refuse, hesitate, and fail*, but not *forget*. This contrast is illustrated in (21) for *refuse* and *forget*. We will discuss this test and its implications in detail in sections 5 and 6.

- (21) a. One third of girls said they had [refused to eat [in order to become thinner]]  
b. #One third of girls said they had [forgotten to eat [in order to become thinner]]

To summarize, our first puzzle concerns strong/strict NPI licensing in infinitival complements. The observation is due to Collins and Postal (2014) and amounts to strong/strict NPIs being licensed in the complement of AA control predicates *refuse, hesitate, and fail*, but not *forget*. It is also important to mention here that weak NPIs do not show any sensitivity to the interpretation of the embedding predicate.

### 3 Puzzle #2: Szabolcsi's observation

Our second puzzle concerns another type of PSIs, namely Positive Polarity Items (PPIs). I start this section with a brief background on PPIs. Then, I present the puzzle, which is due to the observation in Szabolcsi 2004, hence the name Szabolcsi's observation.

PPIs are expressions, such as *would rather* and *already*, that cannot be interpreted in simple negative environments, (22) (Klima, 1964; Baker, 1970; van der Wouden, 1997; Szabolcsi, 2004; Penka and Zeijlstra, 2010; Nicolae, 2012; Homer, 2011, to appear, a.o.). The asterisks in (22)b,d and elsewhere in this paper mark unacceptability of the sentence when read with normal intonation. In metalinguistic contexts, where negation denies the actual wording, e.g., *I haven't been to the movies ALREADY, I am there right now*, PPIs are acceptable. But following standard assumptions (e.g., Baker, 1970), we take metalinguistic negation to be a separate phenomenon and disregard it here.

- (22) a. I would rather go to the movies. c. I have been to the movies already.  
b. \*Nobody would rather go to the movies. d. \*I haven't been to the movies already.

Indefinites, such as *someone, something, some NP*, and *somewhat*, exhibit the same PPI property in that they cannot be interpreted under the immediate scope of clause-mate negation, (23)a. This does not, however, result in the ungrammaticality of the sentence, since *some*, unlike *would rather* and *already*, can scope above negation, (23)b. The wide scope of *some* in (23)b is shown by the naturalness of the continuation *Really? Who was that person whom John didn't call?* (Homer and Bhatt, 2019; a.o.).

- (23) John didn't call someone. (\*not>some /<sup>ok</sup> some>not)  
a. cannot mean: John called nobody (not>some)  
b. can mean: There is a specific person whom John didn't call (some>not)

PPIs have intricate distribution. Three properties of their distribution are important for the purpose of our discussion, which we review below. (a) Locality: Although PPIs are infelicitous under the immediate scope of clause-mate negation, (22)b,d and (23)a, they are fine under extra-clausal negation, (24)a, or in the clausal complement of the implicitly negative preposition *without*, but not in its nominal complement, cf. (24)b with (24)c. The contrasts between (22)b,d/(23)a and (24)a and especially between (24)b and (24)c have been taken to suggest that there is a minimal syntactic domain in which PPIs are anti-licensed by negation, which is approximated to be a finite clause TP/IP or a

<sup>12</sup> The difference between exhaustive and partial control is illustrated in (i) from Pearson 2016: 692. In partial control, unlike in exhaustive control, the controller can be a proper subset of the understood subject of the complement clause (PRO).

- (i) a. John voted to work on the problem as a team. (partial control)  
b. \*John dared to work on the problem as a team. (exhaustive control)

so-called Polarity Phrase (e.g., Szabolcsi, 2004; Homer, 2011, to appear). Licensing of PPIs in infinitival complements (i.e., untensed TPs) is more intricate and will be discussed separately below.

- (24) a. I don't think that [TP John called someone ] (<sup>ok</sup> not>some)  
 b. John passed the test without [TP someone helping him ] (<sup>ok</sup> without>some)  
 c. John passed the test without [DP help from someone ] (\*without>some)

(b) Strength: PPIs like *somebody* are anti-licensed under the scope of AA operators, such as *not* and *nobody*, (22)b,d and (23)a, but not under simple DE operators, such as *at most* and *few*, (25).

- (25) a. At most five men called someone. (<sup>ok</sup> at most>some)  
 b. Few men called someone. (<sup>ok</sup> few>some)

(c) Shielding: PPIs are fine again under clause-mate negation when a strong scalar expression, like *always* or *every*, intervenes between the PPI and negation (Kroch, 1979; Szabolcsi, 2004):

- (26) a. John doesn't always call someone. (<sup>ok</sup> not>always>some)  
 b. John didn't tell everyone something. (<sup>ok</sup> not>every>some)

The properties (a)-(c) outlined above turn out to be useful for explaining the Szabolcsi's observation that we discuss now.

Ladusaw (1980) reports that unlike in simple negative sentences, such as (27)a, *some* can be interpreted under negation in the infinitival complements of *not try*, and implicative verbs *not manage* and *fail*, (27)b,c. These facts might suggest that the locality condition applies to untensed TPs, as well as tensed TPs, and PPIs are not anti-licensed in (27)b,c for the same reason as they are not anti-licensed in (24)a,b.

- (27) a. John didn't eat some soup. (\*not>some)  
 b. John failed [to eat some soup]. (<sup>ok</sup> fail>some)  
 c. John didn't {try/manage} [to eat some soup]. (<sup>ok</sup> not>some)  
 (Ladusaw, 1980: 133)

However, the picture with infinitives is more complex. Szabolcsi (2004) observes that PPI anti-licensing in the infinitival complement of *not want* is sensitive to the interpretation of the action in the complement clause. When the action is intentional/non-accidental (as in the case of *call* and *eat*), *some* cannot have a narrow scope interpretation, (28)a, whereas with unintentional/accidental actions (like *offend* or *break*), *some* can be interpreted under negation, (28)b.

- (28) a. I don't want to call someone/eat something. (<sup>ok</sup> some>not/\*not>some)  
 b. I don't want to offend someone/break something. (<sup>ok</sup> some>not/ <sup>ok</sup> not>some)  
 (Szabolcsi, 2004: fn.10)

To see the difference between, for instance, *call* and *offend* first note that calling someone is prototypically intentional, whereas offending someone is prototypically unintentional (e.g., Rosset 2008). Furthermore, calling someone is an action which is more under the control of the agent than offending someone. For instance, if one is intentionally calling Mary, one believes that one will succeed in calling her (note that this is different from succeeding in reaching Mary), whereas if one is intentionally offending Mary, one can believe that despite all the efforts, Mary might not get offended. This can be evidenced by the contrast in (29), where (29)a can have a weakness of will reading, in addition to an accidentality reading.<sup>13</sup> But (29)b lacks the weakness of will reading. A similar contrast is shown in (30), where (30)a shows that the speaker's intention to call Mary and the speaker's expectation that the speaker will not call Mary result in an inconsistent belief set. (30)b shows that *offend* is different, since the action is not fully controlled by the agent of the action (the speaker), the speaker's intention to offend Mary is compatible with the speaker's expectation that the speaker will not offend her.

<sup>13</sup> Weakness of will is a widely discussed topic in philosophy. A good starting point for the topic is the entry in Stanford Encyclopedia of Philosophy by Sarah Stroud and Larisa Svirsky (<https://plato.stanford.edu/entries/weakness-will/>).

- (29) a. I didn't want to call Mary, but I did. (<sup>ok</sup> weakness of will/<sup>ok</sup> accidental)  
 b. I didn't want to offend Mary, but I did. (\*weakness of will/<sup>ok</sup> accidental)

- (30) a. #I intend to call Mary, but I don't (actually) expect that I'll call her.  
 b. I intend to offend Mary, but I don't (actually) expect that I'll offend her.

Szabolcsi (2010) substantiates her observation by providing the contrasts between *some* and the NPI *any* in (31) and (32) and by expanding the observation to other languages, in particular Hungarian, Polish, and Russian.

- (31) Context: Look at those rocks. It would be fun to climb and jump.  
<sup>ok</sup> I am not going. I don't want to jump from anywhere.  
 \* I am not going. I don't want to jump from somewhere.

- (32) Context: There's a great view from those rocks. Let's go climb them.  
 \* I have the fear of heights. I don't want to jump from anywhere.  
<sup>ok</sup> I have the fear of heights. I don't want to jump from somewhere.

(Szabolcsi, 2010: ex.33,34)

Szabolcsi's observation that anti-licensing of PPIs is sensitive to the interpretation of the action is also supported by the fact that interpreting *call someone* in the context of pocket dialing, (33)a, and adding expressions of accidentality, such as *accidentally* and *by mistake*, (33)b, make the 'not>some' interpretation available.

- (33) a. A: Why are you switching off your phone? (pocket dialing scenario)  
 B: Oh! I don't want to call someone. (<sup>ok</sup> not>some)  
 b. I don't want to call someone accidentally/by mistake. (<sup>ok</sup> not>some)

To summarize, our second puzzle pertains to the observation made by Szabolcsi (2004, 2010) that PPI anti-licensing in the complement of the negated *want* depends on the interpretation of the action as intentional vs. unintentional. The sensitivity of anti-licensing of *some*-like PPIs to the interpretation of the action as (un)intentional is also attested in Hebrew, Hungarian, Polish, Romanian, and Russian.

#### 4 Puzzle #3: Transposed Szabolcsi's observation

Szabolcsi's observation from section 3 can be transposed to NPIs, which will constitute our third puzzle. In particular, in this section I show that strong/strict NPIs like *a red cent* appear to be less acceptable in the infinitival complement of *not want* when the action is interpreted as unintentional/accidental than when the action is intentional/non-accidental. This is illustrated by the contrasts in (34) and (35) where *lose* and *win* are typical accidental actions (e.g., Rosset 2008, Raz 2011).

- (34) a. The company wants to harvest new ideas but doesn't want to spend any money/a red cent on this.  
 b. This investment is too risky for me. I don't want to lose any money/??a red cent on it.
- (35) a. I don't want to give any money/a red cent to the beggar.  
 b. I don't want to win any money/??a red cent in this lottery.

That *lose* and *win* are different from, say, *spend* and *give* can be shown using the weakness-of-will test introduced above to demonstrate the difference between *offend* and *call*. Like *offend*, *lose* and *win* do not have a clear weakness-of-will or coercion interpretation because their success is partly due to luck, (36). By contrast, *spend* and *give* in (37) give rise to a clear weakness-of-will or coercion interpretation, .

- (36) a. I didn't want to lose \$1,000 in this investment, but I did. (\*weakness of will or coercion)  
 b. I didn't want to win this game, but I did. (\*weakness of will or coercion)
- (37) a. I didn't want to spend \$500 on new books, but I did. (<sup>ok</sup> weakness of will or coercion)  
 b. I didn't want to give \$100 to John, but I did. (<sup>ok</sup> weakness of will or coercion)

As another illustration of the transposed Szabolcsi's observation, consider the number of hits in Google search in Table 1 and Table 2. Table 1 shows the number of hits for "want to V NPI" where instead of V, we used three most common intentional verbs used with *a red cent*,<sup>14</sup> as well as *lose* and *win*. NPI was substituted for *a red cent* or *any money*. For example, the column2 x row2 cell is the result of a search for "want to give a red cent".<sup>15</sup> As can be seen from Table 1, *a red cent* is used much less frequently, if at all, with verbs like *lose* and *win* in the complement of *want*. To see this pattern in relative numbers, we repeated the search for "V NPI" with the same verbs and NPIs, see Table 2, and divided the numbers in Table 1 by the numbers in Table 2 which gave us the proportion of "want to V NPI" constructions in "V NPI" constructions, see Table 3. As Table 3 demonstrates, the proportion of *a red cent* and *any money* used in the complement of *want* with intentional/non-accidental verbs *give*, *pay*, and *spend*, is roughly the same, but the proportion of *a red cent* with *lose* and *win* is much lower than that of *any money*. Thus, *a red cent* appears to be less appropriate in the complement of *want* when the verb expresses an unintentional/accidental action.

	<i>give</i>	<i>pay</i>	<i>spend</i>	<i>lose</i>	<i>win</i>
<i>a red cent</i>	16,700	13,100	6,470	3	0
<i>any money</i>	4,100,000	833,000	399,000	129,000	434,000

Table 1 "not want V NPI"

	<i>give</i>	<i>pay</i>	<i>spend</i>	<i>lose</i>	<i>win</i>
<i>a red cent</i>	27,100	60,700	32,300	4,500	6,970
<i>any money</i>	6,490,000	6,100,000	3,850,000	340,000	3,930,000

Table 2 "not V NPI"

	<i>a red cent</i>	<i>any money</i>
<i>give</i>	0,616236162	0,63174114
<i>pay</i>	0,215815486	0,136557377
<i>spend</i>	0,200309598	0,103636364
<i>lose</i>	0,000666667	0,379411765
<i>win</i>	0	0,11043257

Table 3 Relative numbers

To summarize, our last puzzle transports Szabolcsi's observation to the realm of strong/strict NPIs and is, in a sense, a mirror image of it. We see that strong/strict NPIs are fully acceptable in the complement of *not want* when the action in the complement clause is intentional but become deviant when the action is unintentional. By contrast, PPIs in similar settings are licensed with unintentional actions but are anti-licensed when the action is intentional. As is the case for Puzzle #1, weak NPIs do not show any sensitivity to the interpretation of the action.

## 5 Analogy

In this section, I briefly leave the domain of polarity sensitivity and discuss another phenomenon that has been reported in the literature as exhibiting the intentionality effect. The purpose of this discussion is twofold: first, to show that the polarity system is not the only domain of the grammar that is sensitive to the interpretation of the action as (un)intentional and second, to present some of the initial insights into how intentionality can be represented in the grammar.

In many European languages, including Hungarian, Romance, and Slavic, the subject of the subjunctive clause cannot co-refer with the subject of the matrix clause, (38). This restriction is known as the disjoint reference effect or obviation. This phenomenon has enjoyed a good amount of attention, for example, Bouchard, 1983; Picallo, 1985; Ruwet, 1984, 1991; Farkas, 1992; Constantini, 2006; Kempchinsky, 2009; Schlenker, 2005, 2011; a.o.

<sup>14</sup> These verbs are 'most common' in the sense that they are most frequently found in the online Web corpus of English (14 billion words, <https://www.english-corpora.org/iweb/>).

<sup>15</sup> The search was performed in February 2020.



- (38) a. Je veux partir. c. \*Je veux que je parte. (French)  
       'I want to leave.' 'I want for me to leave.'  
       b. Pierre veut partir. d. Pierre<sub>1</sub> veut qu'il<sub>\*1/2</sub> parte.  
       'Pierre wants to leave.' 'Pierre wants for him to leave.'

An interesting property of the disjoint reference effect is that it is weakened when the action expressed by the embedded clause does not (fully) depend on the will of the agent, (39), or the degree of agentivity of the subject of the matrix clause, (40), or both the matrix and the embedded clause, (41), is reduced by using a modal or the conditional mood (Zaring, 1985; Ruwet, 1984, 1991; Farkas, 1992; a.o.).

- (39) a. Je veux absolument que j'amuse ces enfants. (French)  
       'I absolutely want for me to amuse the children.'  
       b. Je ne veux pas que je me trompe de clé.  
       'I do not want for me to mix up the keys.' (Ruwet, 1984)
- (40) a. Je veux que je puisse partir tôt.  
       'I want for me to be able to leave early.'  
       b. Je voudrais bien que je parte tôt.  
       'I would like it well for me to leave early.' (Farkas, 1992: 88)
- (41) Je voudrais bien que je puisse partir des aujourd'hui.  
       'I would like well that I can leave already today' (ibid. p. 89)

The conditions for weakening of the disjoint reference effect are analogous to what we saw in Puzzles #1-#3 above. In Puzzle #1, we saw that strong/strict NPIs are not licensed in the complement of *forget*, which is a matrix predicate with reduced degree of agentivity. In Puzzles #2 and #3, the degree of agentivity of the embedded predicate affects the acceptability of PPIs and strong/strict NPIs. The difference is that with obviation, the reduced degree of agentivity results in lifting the co-referential restriction independently of the polarity of the sentence, cf. (39)a with (39)b, whereas with PPIs and strong/strict NPIs, polarity is an active ingredient.

Below, we briefly discuss one of the first proposals for capturing intentionality in language, that of Farkas 1988, and its extension to weakening of the disjoint reference effect in Farkas 1992. Although Farkas (1988) did not directly aim at explaining any of the phenomena above, she was (one of the) first to propose a way to capture intentional/unintentional distinction in the grammar by using a RESP(onsibility) relation. This relation (or a related operator) was later used in Farkas 1992 to account for the disjoint reference effect and in Szabolcsi 2010 to explain the behavior of PPIs (see section 7.3). RESP was also considered and rejected by Schlenker (2005) when analyzing the disjoint reference effect and used by Grano (2017) to provide the semantics for *intend* as an attitude predicate.

Farkas (1988) aimed at explaining controller choice in sentences like (42), that is to say the fact that in (42)a the implicit argument PRO in the embedded clause refers to John, whereas in (42)b, PRO refers to Mary. For this purpose, she postulated a new semantic relation RESP defined in (43), which, she argued, is not reducible to the traditional thematic role of an agent. One argument for this is that the initiator *i* of RESP does not have to be a participant in the situation *s*, which *i* brings about. For instance, in (44), John is the initiator of the situation described by the embedded clause, but not a participant in it. An agent cannot be a non-participant.

- (42) a. Mary convinced John to leave.  
       b. Mary promised John to leave.
- (43) "RESP(*i,s*) holds between an individual *i* (initiator) and a situation *s* just in case *i* brings *s* about, i.e., *s* is the result of some act performed by *i* with the intention of bringing *s* about."  
       (Farkas, 1988: 36)
- (44) John promised Mary that the children will be in bed by 8. (Farkas, 1988: 36)

According to Farkas, *convince* and *promise* are RESP-inducing in that they have RESP among their satisfaction conditions. The difference between (42)a and (42)b is that *convince* requires the first argument of RESP to be

Farkas (1988) argues that the absence of RESP can be tested, for example, by the unavailability of the modification by rational clauses introduced by *in order to*, (45). We saw this test above in section 2 and will see more in section 6.1.

- Farkas (1992) also applies RESP to account for weakening of the disjoint reference effect by suggesting that in order for the obviation effect to emerge, both the subject of the matrix clause and the subject of the embedded clause have to stand in RESP relation to the situation described by the complement. If either of RESPs is deficient, the obviation effect is weakened as we saw in (39)-(41).

(46) a. Jean<sub>1</sub> ne se console pas qu'il<sub>\*1/2</sub> soit handicapé. (French)  
       'Jean cannot console himself that he is handicapped.'  
       b. Jean ne se console pas d'être handicapé.  
       'Jean cannot console himself to be handicapped.' (Schlenker, 2005: 294)

## 6 Intentionality and *Luck*

### 6.1 Three tests

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employed to distinguish *call* vs. *offend* or *give* vs. *win*. Thus, I argue that weakness of will is a more adequate test for the linguistic notion of intentionality needed for explaining the three puzzles, which are our focus here.

Let us start with modification by rationale clauses introduced by *in order to*. In section 2, I suggested that the difference between *refuse*, *hesitate*, and *fail*, on the one hand, and *forget*, on the other hand, can be detected by the felicity of rationale clauses introduced by *in order to*. We also saw in section 5 that Farkas (1988) uses *in order to* clauses to argue for the presence/absence of RESP, cf. (47)a,b with (47)c,d. Jackendoff (1995) also notices that purpose clauses are only compatible with volitional acts, (48).

- (47) a. John read 'Anna Karenina' in order to impress Mary.  
 b. The shopwindow has a big sale sign in it in order to attract customers.  
 c. #John resembles his father in order to annoy his grand mother.  
 d. #The weather has been good lately in order to please the tourists. (Farkas 1988:36)
- (48) a. John went home in order to see his mother.  
 b. John bought a car in order to get to work quicker.  
 c. #John grew taller in order to . . .  
 d. #John is descended from royalty in order to . . . (Jackendoff 1995: 220)

In control constructions, there are in principle two predicates that can be modified by *in order to* clauses. We are interested in high scope cases where *in order to* modifies the embedding predicate (i.e., *refuse*, *hesitate*, *fail*, and *forget*). (49) shows that rationale clauses can modify *refuse*, *hesitate*, and *fail*.

- (49) a. One third of girls said they had starved themselves or [refused to eat [in order to become thinner]].<sup>16</sup>  
 b. By the end of 1838, Mosander knew he had found a new element in Berzelius' cerium oxide, but [hesitated to tell his mentor [in order to spare him any embarrassment from having failed to Purify his element ]].<sup>17</sup>  
 c. In the long run, a weaker currency will be positive for the economy only if Greece implements the reforms that the country [has failed to implement [in order to avoid exiting the Euro]].<sup>18</sup>

With *forget*, rationale clauses can modify the predicate that embeds *forget*, (50)a, or the predicate that is embedded by *forget*, (50)b, as long as both are intentional. But, crucially, *in order to* clauses cannot modify *forget* itself, (51).<sup>19</sup>

- (50) a. The IRS probably [hopes [you do your taxes wrong or simply forget to file] in order to keep the billions of dollars in unclaimed refunds]...<sup>20</sup>  
 b. Crap, what did I forget to [do in order to get this right & working]?<sup>21</sup>
- (51) a. #One third of girls said they had [forgotten to eat [in order to become thinner]]  
 b. #John [forgot to wash the dishes [in order to annoy his wife]].

Let us now try to apply this test to predicate from Puzzle #2 and #3, namely *call*, *eat*, *spend*, *give* that arguably have an intentional interpretation vs. *offend*, *break*, *lose*, *win* that are arguably unintentional. (52) and (53) demonstrate that, in principle, all these predicates can be modified by *in order to* clauses. This means that all of them have a certain

<sup>16</sup> <https://canadianwomen.org/the-facts/barriers-for-girls/>

<sup>17</sup> <https://www.nature.com/articles/s41557-018-0208-3>

<sup>18</sup> <https://www.businessinsider.com.au/this-is-the-horrific-consequence-of-greece-leaving-the-euro-2015-4>

<sup>19</sup> There can be found examples like (i) where *in order to* seems to modify *forget*. However, in (i) *forget* has a pretense interpretation roughly equivalent to 'refuse to' or 'neglect to'. Such examples do not present a counterexample to the claim that *forget* cannot be modified by *in order to*.

(i) In order to fulfill the desire of others, I forgot to express myself.  
<https://nojoto.com/post/498ded66ebfe722d94042a7892ce9958/in-order-to-fulfill-the-desire-of-others-i-forgot-to-express-my>

<sup>20</sup> <https://www.financialsamurai.com/what-happens-if-i-dont-pay-my-taxes-because-ive-run-out-of-money/>

<sup>21</sup> <http://forum.gsplayers.com/showthread.php?107443-New-to-lich-and-then-there-s-problems>

degree of intentionality (see e.g., Egré 2014 for the claim that intentionality is gradable) or equivalently that all of these actions can be initiated with a certain purpose in mind (we will come back to this idea shortly). Thus, if we aim at a unified account of Puzzles #1-#3, we need to find another test and define intentionality in a more precise manner.

- (52) a. After a few minutes, the driver of the vehicle called the police in order to file a report.<sup>22</sup>  
b. Eve ate the fruit in order to fulfill desires that God had already offered to meet.<sup>23</sup>  
c. ...as we have spent those funds in order to ship the package to you...<sup>24</sup>  
d. Farm owners give them antibiotics in order to keep them alive.<sup>25</sup>
- (53) a. There can also be times when he will step on other people's toes and offend some sensibilities in order to achieve his goal.<sup>26</sup>  
b. Thomas broke the handle in order to enter the room.<sup>27</sup>  
c. The fashion industry has lost the plot in order to be edgy and different.<sup>28</sup>  
d. The bourgeoisie in France won its victory in order to humble the people.<sup>29</sup>

The second linguistic phenomenon that Farkas (1988) employs to distinguish between intentional and unintentional actions (or RESP and RESP-less actions) is modification by the adverbial *intentionally*. Building on Jackendoff 1972, Farkas (1988) proposes that *intentionally* contributes the requirement for the agent of the action to be responsible for bringing about the situation described by the sentence. This explains the contrasts in (54).<sup>30</sup>

- (54) a. John hurt Mary intentionally.  
b. John fell off the ladder intentionally.  
c. #John resembles his father intentionally.  
d. #John is tall intentionally.
- (Farkas, 1988: 39)

Before we apply modification by *(un)intentionally* as a test to distinguish the predicates in (11)a and (11)b, it is important to note that all predicates in (11) take intentional actions as their complements. (55) shows that the predicates in (11) are incompatible with actions over which the agent lack control (based on Grano 2017, ex35, p.596). A similar point has been made by Jackendoff (1995), see (56).

- (55) a. #John refused/hesitated/failed/forgot to go through puberty.  
b. #John refused/hesitated/failed/forgot to snore while he was asleep tonight.  
c. #John refused/hesitated/failed/forgot to resemble his father.  
d. #John refused/hesitated/failed/forgot to be tall.
  - (56) a. John swore/decided/forgot to look at Sue.  
b. #John swore/decided/forgot to be born 10 years before Bill.
- (Jackendoff 1995: 204)

This observation may be connected to the fact that the verbs in (55) and (56) are implicative verbs, see (20)c and fn. 11, and it is well known that implicative verbs carry the presupposition that the embedded action is intended by the agent, e.g., Karttunen 2012. As shown in (57), *intend* is incompatible with unintentional actions:

- (57) a. #John intends to go through puberty next year.  
b. #John intends to snore while he is asleep tonight.

<sup>22</sup> <https://www.dispatch.com/content/stories/editorials/2015/12/06/1-driver-officer-neglected-rights-of-bicyclist.html>

<sup>23</sup> <https://austinstone.org/wp-content/uploads/2019/11/2019-Advent-Devotional-Book-.pdf>

<sup>24</sup> <https://www.aradanicostumes.com/pages/faq>

<sup>25</sup> <http://www.motivelesson.com/this-is-the-reason-why-you-should-never-consume-tilapia/>

<sup>26</sup> <https://trustedpsychicmediums.com/tarot-cards/king-of-wands-tarot-card-and-its-meaning/>

<sup>27</sup> <http://www.supersummary.com/the-scorch-trials/chapters-5-8-summary/>

<sup>28</sup> <https://www.celebitchy.com/518830/nicole-kidman-in-mcqueen-one-of-the-worst-looks-of-the-golden-globes/>

<sup>29</sup> <https://www.marxists.org/archive/marx/works/1848/11/06.htm>

<sup>30</sup> For cases like (i), Farkas (1988) argues that the use of *intentionally* is redundant, which explains their infelicity.

- (i) a. #John cooked the meal intentionally.  
b. #John wrote a novel intentionally.
- (Farkas, 1988: 40)

- c. #John intends to resemble his father.
- d. #John intends to be tall.

(Grano, 2017: 596)

The picture is different for *want*, (58). Our Puzzles #2 and #3 are grounded on the fact that the action in the complement of *want* can be either intentional/non-accidental or unintentional/accidental.

- (58) a. John wants to go through puberty next year.
- b. John wants to snore while he is asleep tonight.
- c. John wants to resemble his father.
- d. John wants to be tall.

(Grano, 2017: 597)

Given (55) and (56) above and our proposition that *forget*, but not *refuse*, *hesitate*, and *fail*, expresses an unintentional action, we expect that *unintentionally* can modify *forget*, but not *refuse*, *hesitate*, and *fail*. That this is so is shown in (59) for *forget* and *hesitate/refuse*.

- (59) a. ...and you probably unintentionally forgot to bring a few things as well<sup>31</sup>
- b. #And you probably unintentionally refused/hesitated to bring a few things as well.

The picture with *fail* is less clear cut. (60) illustrates that *fail* can be modified by *intentionally* or *unintentionally*. Nonetheless, *fail* is biased towards the intentional interpretation, which is demonstrated by the fact that in a 14 billion word web corpus (<https://www.english-corpora.org/iweb/>), the search for ‘intentionally fail/failed to’ returns 146 examples, whereas for ‘unintentionally fail/failed to’ 11 examples, two of which are of form ‘intentionally or unintentionally’, such as in (60)c. Table 4 shows the numbers for all three intentional predicates in (11)a.

- (60) a. He went on to say one thing the committee may have unintentionally failed to address is the fact that our community’s number one cycling user is kids<sup>32</sup>
- b. An employer has intentionally failed to make deductions required by this act.<sup>33</sup>
- c. ...he had incurred the penalty but intentionally or unintentionally failed to add the penalty to his score<sup>34</sup>

		refuse to	hesitate to	fail to
<b>PRES</b>	intentionally	17	1	57
	unintentionally	0	0	7
<b>PAST</b>	intentionally	23	0	89
	unintentionally	0	0	4

Table 4 ‘(un)intentionally V to’ iWeb

Let us now again apply this test to the predicates from Puzzles #2 and #3. As with modification by *in order to*, we see that modification by *(un)intentionally* is not an adequate linguistic test for distinguishing predicates like *call* vs. *offend* and *give* vs. *win*. (61) shows that *unintentionally* can modify verbs that express stereotypical intentional actions, such as *call*, *eat*, *spend*, and *give*. On the other hand, (62) illustrates that verbs describing stereotypically unintentional actions can be modified by *intentionally* when a correct context is provided. Such contexts usually concern situations where the agent of the action is highly skilled and as a result, the action is less susceptible to luck (e.g., Harman 1999, Jacob, Cova, and Dupoux 2012).

- (61) a. If an organization unintentionally calls a mobile number without consent, it is safeguarded against prosecution...<sup>35</sup>
- b. ...would you still be a vegan if you unintentionally ate an animal product?<sup>36</sup>

<sup>31</sup> <https://www.studyabroad.com/blogs/10-things-you-should-do-get-yourself-situated-abroad>

<sup>32</sup> <http://county10.com/lander-council-reacts-to-venom-in-tap-project-public-comments/>

<sup>33</sup> <https://www.legis.state.pa.us/WU01/LI/LI/US/HTM/1965/0/0511..HTM>

<sup>34</sup> <https://www.usga.org/custom-search-pages/rules/rules-and-decisions/decision-34.html>

<sup>35</sup> <https://adage.com/article/guest-columnists/5-ways-avoid-lawsuit-wake-telemarketing-rules/245614>

<sup>36</sup> <https://www.therawtarian.com/community/f/discussion/5949/b12-come-and-get-it>

- c. You may have unintentionally spent too much time trying to figure out how to manipulate algebra.<sup>37</sup>
  - d. I unintentionally gave him my phone number...<sup>38</sup>
- (62)
- a. If someone intentionally offends you, then your anger is justified.<sup>39</sup>
  - b. Of course if I intentionally broke something I should pay.<sup>40</sup>
  - c. I intentionally lost a few chips so I would have less than everyone else...<sup>41</sup>
  - d. Nate has intentionally won a few games, I'm still not brave enough to do that as I don't like to see my little buddy upset and am a born people pleaser.<sup>42</sup>

The two intentionality tests we discussed above are tuned to detect the presence of RESP (Farkas 1988, 1992). Although Farkas (1988, 1992) stresses that RESP covers both intentionality of the *initiation* of the action and *control* of the agent over it (the later component is argued to be essential by many philosophers, e.g., Davidson, 1963, 1980; Bratman, 1987; Raz, 2011), her tests for RESP only target the initiation component. For instance, rationale clauses introduced by *in order to* are acceptable only with actions that can be initiated by the agent, cf. again (63)a with (63)b repeated from above. Resembling someone is not an action that can be initiated by an agent, compared, for example, with offending someone or winning a lottery (for which you need at least to buy a ticket), as in (53). The same reasoning applies to modification by (*un*)*intentionally*, repeated in (64) where the adverbial can be seen as modifying the initiation phase of the action. Therefore, being tall that lacks the initiation phase cannot be modified by *intentionally*, (64)b, whereas *offend* and *win* can, as in (62).

- (63)
- a. John read 'Anna Karenina' in order to impress Mary.
  - b. #John resembles his father in order to annoy his grandmother. (Farkas, 1988: 36)
- (64)
- a. John fell off the ladder intentionally.
  - b. #John is tall intentionally. (ibid. p. 39)

The distinction captured by the tests in (63) and (64) is not adequate for the purpose of this paper. To see this, take again *win* which not only can be initiated intentionally, but also can be interpreted as a fully intentional action especially when the agent exhibits a high degree of control over the outcome as in the context in (65). In such a case, *win* can co-occur with *intentionally* and *in order to*, as in (65). Similar remarks apply to other 'unintentional' verbs from Puzzles #2 and #3.

- (65) *Context:* Bill has a 5y.o. son Jonnie. They were playing noughts and crosses and Jonnie gets upset.  
Bill has intentionally won in order to annoy his wife.

It appears that we need to talk not about the ability of the agent to initiate the action, but rather to control it, which is a stronger notion, in the sense that any action that is controlled by the agent is also initiated by the agent. But it is not the case that any initiated action is fully controlled by the agent. In section 6.2, we re-state this concept of control over the action in terms of accidentality, that is to say the action that is controlled by the agent will be an action that excludes luck or accident.

I propose that controllability/accidentality of an action can be linguistically detected by the presence/absence of weakness-of-will reading in constructions like *I didn't want to A, but I did*. If an action is fully controlled by the agent and thus, is not accidental, the weakness-of-will reading clearly manifests itself. If, on the other hand, the action is accidental, weakness of will is absent. In sections 3 and 4, we saw that this test successfully distinguishes between predicates like *call*, *eat*, *spend*, *give* vs. *offend*, *break*, *lose*, *win*, which show different patterns with respect to PPI anti-licensing and strong/strict NPI licensing. Examples in (66) show that weakness of will can also successfully

<sup>37</sup> <https://atarnotes.com/forum/index.php?topic=168150.0>

<sup>38</sup> <http://1000awesomethings.com/2010/06/02/492-the-first-text-message-between-new-friends/>

<sup>39</sup> <https://liveboldandbloom.com/11/self-awareness/how-to-control-your-emotions>

<sup>40</sup> <https://boxerworld.com/forums/threads/am-i-responsible.154187/>

<sup>41</sup> <https://mobiletechreview.com/games/PSP/World-Series-of-Poker.htm>

<sup>42</sup> <http://ourclaphamfam.blogspot.com/2016/03/im-baaaack.html>

distinguish predicates from Puzzle #1. In other words, weakness of will is present with predicates like *refuse* and *hesitate* but not *forget*.<sup>43</sup>

- |      |  |                                   |
|------|--|-----------------------------------|
| (66) | a. I didn't want to refuse to go to the movies, but I did. | ( <sup>ok</sup> weakness of will) |
|      | b. I didn't want to hesitate to call Mary, but I did.      | ( <sup>ok</sup> weakness of will) |
|      | c. I didn't want to forget to wash the dishes, but I did.  | (*weakness of will)               |

To summarize, in this section, we looked at three tests that can potentially distinguish between intentional/non-accidental and unintentional/accidental actions and concluded that only one test, namely, the weakness-of-will test is the most appropriate for separating the predicates that appear to affect PSI (anti-)licensing in the three puzzles that are the main focus of this paper.

## 6.2 Luck

The first question that we need to address in order to construct an account of Puzzles #1-#3 is which concept of (un)intentionality is relevant to the grammar. For this purpose, we briefly turn to philosophy. The coming paragraphs are a cursory presentation of the main concepts that philosophers have been using through centuries to reason about intentionality, volition, and accidentality.

Aristotle defines an action as voluntary if its outcome is desirable, the action is “in a man’s own power”, and is done “with knowledge, i.e. not in ignorance either of the person acted on or of the instrument used or of the end that will be attained” (Aristotle, *Ethica Nicomachea*, V, 10). Since Aristotle, philosophical reflections on the nature of intentions and intentional actions have revolved around two key components: desire and belief (Anscombe, 1957; Davidson, 1963, 1980, et seq.; Bratman, 1987, 1999; Velleman, 1989; Raz, 2011; a.o.). If the agent of the action does not desire to bring about a particular outcome and/or the outcome is not foreseen, the action has been considered to be unintentional/involuntary.

In the recent literature, a third component - control, “man’s own power” - is added (e.g., Mele and Moser, 1994). When an action is beyond one’s abilities or is performed under coercion, such an action is not voluntary or intentional (in some sense), although the outcome may be highly preferable and foreseen.

However, the presence of control (in addition to desire/motive and belief/foreseeing) does not necessarily guarantee that the success of one’s action is immune to luck (Greco, 2003; Pritchard, 2005, 2016; Horst, 2015). Let me borrow an example from Pritchard 2016. Imagine a skillful archer who confidently hits the target, but unbeknownst to her most targets on the field are fitted with an invisible force field that repels arrows and she just happens to choose the one that is not. Intuitively, the archer’s success is still accidental, although all three ingredients - desire, belief, and control (or skill) - are present.<sup>44</sup>

It appears that the lack of accidentality is a good candidate for conceptualizing intentionality. I propose to restate Farkas’ RESP (or rather non-RESP) in terms of *Luck*, thereby an action described by some proposition  $p$  is accidental (lucky) iff the agent of the action considers it epistemically possible that there is a nearby world where  $\neg p$  holds (e.g., Pritchard 2005).<sup>45</sup> In other words, *Luck* is a propositional operator that introduces the presupposition in (67), where ‘Near-by’ is a selection function which selects the worlds that are most similar to the world of evaluation and  $x$  is set to the agent of the action in  $p$ .

- (67)  $\|Luck\|^{c,g} = \lambda p_{\langle s,t \rangle} : \exists w' [w' \in \text{Near-by}(\text{Dox}_{x,w}) \ \& \ \neg p(w')] .p$

<sup>43</sup> The situation with *fail* is as before less clear. It appears that *fail* does not necessarily give rise to weakness of will or coercion reading. It seems that *fail* is ambiguous between intentional and unintentional interpretations. At this point, it is unclear to me how to control for this ambiguity. I leave this question for future work.

<sup>44</sup> In this paper, I lump together the notions of luck and accidentality. But see Pritchard 2005 ch. 5 and 6 for a lengthy discussion of why we might want to treat these two notions separately.

<sup>45</sup> This formulation was originally proposed by Pritchard (2005: 130-133) to construct the so-called Safety Condition for Knowledge, which seeks to improve on the notion of knowledge as justified true beliefs that is open to the so-called Gettier problem (Russell 1948, Gettier 1963).

Let us quickly see how this works on a simple sentence like (68)a. We first observe that winning a lottery is an action which is subject to luck, thus we introduce *Luck* into the LF representation, as shown in (68)b. Applying (67) to the proposition that John won the lottery, we have that it is true in  $w$  just in case John won the lottery in  $w$  and can be used only in those contexts where John considers it epistemically possible that he wouldn't have won the lottery were the circumstances slightly different, (69). The presence of this later presupposition can be evidenced from examples like (70), which is anomalous unless we assume that God is not omniscient or winning a lottery is a controlled action that a skillful player can easily preform with a guaranteed result (like playing noughts and crosses with 5y.o. Jonnie).

- (68) a. John won the lottery.  
b.  $[_{CP} \lambda W [ w [ Luck [_{TP} \text{John won the lottery} ] ] ] ]$
- (69) a.  $\|TP\|^{c,g} = \lambda w. \text{john won the lottery in } w$   
c.  $\|CP\|^{c,g} = \lambda w. \text{john won the lottery in } w$   
defined only if  $\exists w' [w' \in \text{Near-by}(\text{Dox}_{\text{john},w}) \ \& \ \neg \text{won-the-lottery}(\text{john})(w')]$
- (70) #God won the lottery.

Being a propositional operator, *Luck* has two sites where it can attach in control constructions – the matrix clause or the complement – as shown in (71):

- (71) a.  $[_{CP1} \lambda W1 [ w1 [ Luck [_{TP} DP3 \text{predicate} [_{CP2} \lambda W2 [ w2 [_{TP} PRO3 \text{predicate} ] ] ] ] ] ] ] ]$   
b.  $[_{CP1} \lambda W1 [ w1 [_{TP} DP3 \text{predicate} [_{CP2} \lambda W2 [ w2 [ Luck [_{TP} PRO3 \text{predicate} ] ] ] ] ] ] ] ]$

The configuration in (71)a captures the difference between *refuse*, *hesitate*, and *fail* (no *Luck*), on the one hand, and *forget* (with *Luck*), on the other. The structure in (71)b will be used for embedding under *want* that can take either intentional/non-accidental (*call*, *eat*, *spend*, ...) or unintentional/accidental (*offend*, *break*, *lose*, ...) actions. In principle, it is perceivable that *Luck* is present at both sites (with this respect recall that weakening of the disjoint reference effect is strongest when both the matrix and the embedded clauses are unintentional, (41)). But as we don't see this in Puzzles #1-#3 that interest us here, I leave this possibility as an open empirical question. The core of my proposal is that the presence of *Luck* intervenes with strong/strict NPI licensing and PPI anti-licensing, which explains their different behaviour in our three puzzles. In the next section, we see in detail how this works.

## 7 Analysis

Our analysis will consist of three ingredients. First, with respect to strict/strong NPI licensing, we assume the approach advocated in Gajewski 2011 and Chierchia 2013, according to which strict/strong NPIs are licensed in the environments that are DE with respect to both truth-conditional and non-truth-conditional contents of meaning (i.e., presuppositions and scalar implicatures - SIs). Second, we assume that attitude predicates that take infinitival complements are quantifiers over (centered) possible worlds (Chierchia 1989, Pearson 2016, a.o.). Third, we capture the distinction between accidental and non-accidental actions in terms of *Luck* modelled on the idea of “epistemic luck”, a concept proposed by philosophers in order to address the so-called Gettier problem, as discussed in section 6.2. Informally, an action is “lucky” (or accidental) if there is a world among nearby epistemic alternatives of the agent of the action (i.e., those worlds where the agent has the same beliefs and intentions as in the actual world), in which the proposition describing the given action is false. The core idea is that in negative contexts, *Luck* creates an Upward Entailing (UE) presupposition, which interferes with strong/strict NPI licensing, given our assumptions. In section 7.1, we briefly present the first two ingredients taken directly from the literature. Section 7.2 shows how the three ingredients of our analysis combined together explain Puzzles #1 and #3 concerning strong NPIs. In section 7.3, the analysis is extended to explain the sensitivity of PPIs to *Luck* (Puzzle #2).

### 7.1 Preliminaries

The first ingredient of our account concerns licensing of strong/strict NPIs and intervention effects. Gajewski (2011) and, following him, Chierchia (2013) argue for a revision of the strong/strict NPI licensing condition, which previously related their licensing to the strength of the operator they appear in the scope of (e.g., Zwarts 1998, van der Wouden 1997). Gajewski (2011) proposes that strong/strict NPIs, like (punctual) *until* or *in weeks*, are licensed not in the scope of AA operators, but rather in environments that are DE with respect to both truth-conditional and non-



truth-conditional contents of meaning (presuppositions and SIs).<sup>46</sup> One of the arguments comes from the fact that strong/strict NPIs, such as punctual *until*, unlike weak NPIs, such as *any*, are not felicitous in the restrictor of *every*, cf. (72)a with (72)b. This is puzzling because *every* is AA in its restrictor position, (73). The infelicity is explained by the fact that although in the assertion *until* is in a DE environment, (74)b, the existential presupposition of the relative clause creates an UE environment in which *until* is infelicitous, (74)c.

- (72) a. \*Everyone who left until Tuesday missed the meeting.  
b. Everyone who knew anything about Paul missed the meeting.
- (73) Every blonde or red-haired student came to class.  $\Rightarrow/\Leftarrow$   
Every blonde student came to class and every red-haired student came to class.

- (74) a. \*Everyone who left until Tuesday missed the meeting.  
b. Assertion:  $\forall x \in D [ \text{||left until Tuesday||}(x) \rightarrow \text{||missed the meeting||}(x) ]$  DE  
c. Presupposition:  $\exists x \in D [ \text{||left until Tuesday||}(x) ]$  UE

The infelicity of NPIs in UE environments is explained using a mechanism of meaning strengthening (or exhaustification). We will see some details of this mechanism in section 8. What is important for us here is that when the licensor triggers a UE presupposition or scalar implicature, weak NPIs are licensed, but strong/strict NPIs are not.<sup>47</sup> (75) and (76) provide two additional illustrations of the idea that the difference between weak vs. strong/strict NPI licensing can be attributed to the requirement that the latter but not the former are sensitive to the monotonicity of the non-truth-conditional content.

- (75) a. Only John read anything/\*a damn thing today.  
b. Assertion:  $\forall x \in D [ \text{||read anything/a damn thing today||}(x) \rightarrow x=\text{John} ]$  DE  
c. Presupposition: John read anything/a damn thing today UE
- (76) a. Few people bought anything/\*a damn thing in this store.  
b. Assertion: Few people bought anything/a damn thing in this store DE  
c. SI: Some people bought anything/a damn thing in this store UE

We will build on the above idea to explain Puzzles #1-#3, but before we can do that, we need to spell out our assumptions about the interpretation of infinitive embedding predicates.

The second ingredient of our analysis is the denotation of infinitive embedded predicates. Following Chierchia 1989, Pearson 2016, a.o., we analyse attitude predicates that take infinitival complements as quantifiers over (centred) possible worlds. For simplicity, we omit the temporal and individual coordinates of centred possible worlds in this paper, which reduces control predicates from property-taking to proposition-taking.<sup>48</sup>

We begin by looking at predicates like *want*. Following Heim 1992 and von Stechow 1999, let us assume that desiderative predicates, like *want*, have a doxastic modal base. We also assume that desiderative predicates are upward monotonic (von Stechow 1999) and have a conditional presupposition (Romoli 2012). The latter makes desiderative predicates suitable for strong/strict NPI licensing under the Gajewski-style account we assume here. To see this, consider (77)a, which is standardly assumed to have the non-veridicality presupposition in (77)b (e.g., Heim 1992). According to this presupposition, the speaker considers it possible that she gives the beggar some money and that she doesn't. This presupposition, however, creates upward monotonicity in one of the conjuncts preventing strong/strict NPI licensing under Gajewski's (2011) account. The (weaker) conditional presupposition in (77)c avoids this problem as in the antecedent of the conditional and in the consequent, the NPI would appear in DE (Romoli 2012).

<sup>46</sup> See Iatridou and Zeijlstra 2019 for a novel unified analysis of punctual and durative *until*, as well as a comprehensive discussion of the NPI-hood of *until* and *in weeks*.

<sup>47</sup> Note that we are talking about presuppositions and SIs triggered by the licensor here. The picture is different when the intervening presupposition/SI is introduced separately (not by a licensor). In this case both weak and strong/strict NPIs are illicit (e.g., Linebarger 1987, Chierchia 2004, Gajewski 2011). We will return to this question in section 8.

<sup>48</sup> As far as I can tell, the account developed in this paper is compatible with the property view on control predicates.

- (77) a. I don't want to give a red cent to the beggar.  
 b. defined only if:  $\exists w'[w' \in \text{Dox}_{x,w} \ \& \ p(w')] \ \& \ \exists w'[w' \in \text{Dox}_{x,w} \ \& \ \neg p(w')]$  (Heim-style)  
 c. defined only if:  $\exists w'[w' \in \text{Dox}_{x,w} \ \& \ p(w')] \rightarrow \exists w'[w' \in \text{Dox}_{x,w} \ \& \ \neg p(w')]$  (Romoli-style)  
 (where  $x$  = the speaker,  $p$  = that the speaker gives a red cent to the beggar)

Given these background assumptions, our denotation of *want* will look as in (78).<sup>49</sup>

- (78)  $\| \text{want} \|^{c,g}(p_{<s,t>})(x_e)(w_s)$  is defined only if  $\exists w'[w' \in \text{Dox}_{x,w} \ \& \ p(w')] \rightarrow \exists w'[w' \in \text{Dox}_{x,w} \ \& \ \neg p(w')]$   
 when defined,  $\| \text{want} \|^{c,g}(p_{<s,t>})(x_e)(w_s) = \forall w' [w' \in \text{BEST}_{\text{pref}}(\text{Dox}_{x,w}) \rightarrow p(w')]$   
 (where  $\text{BEST}_{\text{pref}}$  is an Ordering Source prioritizing the worlds that correspond to the preferences of the attitude holder in the actual world, e.g., Kratzer 1991)

The denotations of *refuse* and *hesitate* are similar to that of *want* with slightly different Ordering Sources, which we mark by different subscripts (“pref” for preferences for *want* and “consid” for different considerations for *refuse* and *hesitate*) and the opposite monotonicity. They are shown in (79):

- (79) a.  $\| \text{refuse} \|^{c,g}(p_{<s,t>})(x_e)(w_s)$  is defined only if  $\exists w'[w' \in \text{Dox}_{x,w} \ \& \ p(w')] \rightarrow \exists w'[w' \in \text{Dox}_{x,w} \ \& \ \neg p(w')]$   
 when defined,  $\| \text{refuse} \|^{c,g}(p_{<s,t>})(x_e)(w_s) = \neg \forall w' [w' \in \text{BEST}_{\text{consid}}(\text{Dox}_{x,w}) \rightarrow p(w')]$   
 b.  $\| \text{hesitate} \|^{c,g}(p_{<s,t>})(x_e)(w_s)$  is defined only if  $\exists w'[w' \in \text{Dox}_{x,w} \ \& \ p(w')] \rightarrow \exists w'[w' \in \text{Dox}_{x,w} \ \& \ \neg p(w')]$   
 when defined,  $\| \text{hesitate} \|^{c,g}(p_{<s,t>})(x_e)(w_s) = \neg \forall w' [w' \in \text{BEST}_{\text{consid}}(\text{Dox}_{x,w}) \rightarrow p(w')]$

We assume that *fail* has a causation-based semantics similar to that of *not manage* proposed by e.g., Baglini and Francez (2016) and informally represented in (80). Baglini and Francez’ (2016) analysis of *manage* is fleshed out using the framework for causality in Schulz 2011. We do not present the details of this framework, rather we base our semantics for *fail* on the informal presentation in (80) and use a primitive CAUSE operator to capture causality.<sup>50</sup> Our denotation of *fail* is shown in (81).

- (80) A sentence of the semantic form *manage*( $p$ ):  
 a. Presupposes the familiarity of a “catalyst”, a causally necessary, but causally insufficient condition for the truth of  $p$ .  
 b. Asserts that the catalyst actually caused the truth of  $p$ . (Baglini and Francez 2016: 546)
- (81)  $\| \text{fail} \|^{c,g}(p_{<s,t>})(w_s)$  is defined only if  $\exists s [s < w \ \& \ s \text{ is necessary but not sufficient for } p(w) = 1]$   
 when defined,  $\| \text{fail} \|^{c,g}(p_{<s,t>})(w_s) = \neg \text{CAUSE}_w(s,p)$   
 (where  $\text{CAUSE}_w(s,p)$  is true in  $w$  just in case  $s$  causes  $p$  to be true in  $w$ )<sup>51</sup>

The semantics of *forget* is similar to that of *not remember* (e.g., Pearson 2016) and is shown in (82).

- (82)  $\| \text{forget} \|^{c,g}(p_{<s,t>})(x_e)(w_s) = \neg \forall w' [w' \in \text{Dox}_{x,w} \rightarrow p(w')]$

With these preliminary assumptions in hand, we are now ready to see how the presence/absence of *Luck* can account for the different distribution of NPIs and PPIs in intentional and unintentional contexts.

## 7.2 Puzzle #1 and #3 explained

We start with Puzzle #1 from section 2. The core examples are repeated below:

<sup>49</sup> There are other possibilities for desire predicate, such as a degree semantics account by Villalta 2008 and preference-structure-based account by Condoravdi and Lauer 2016. I will not dwell on this here.

<sup>50</sup> For more elaborate views on causality see, for example, the volume edited by Bridget Copley and Fabienne Martin (2014).

<sup>51</sup> Note that we also need to assume that  $\neg \text{CAUSE}$  is DE to ensure that NPIs are licensed under *fail*. See also von Stechow 1999 and references mentioned there for earlier approaches to *fail* as an NPI licenser.

- (83) a. \*Jane forgot to do a fucking thing.  
b. Byron refused to do a damn thing.

First of all, recall that *refuse*, *hesitate*, *fail*, and *forget* do not allow unintentional complements. In other words, with this predicates *Luck* cannot appear in the embedded clause. The only position where *Luck* can appear is the matrix clause and it does so with *forget* but not with other predicates. I propose that this is what explains the difference in strong/strict NPI licensing with *forget* vs. *refuse*, *hesitate*, and *fail*. It is worth pointing out here that given the nature of the doxastic accessibility relation the presupposition of *Luck* over *forget* in (84)a can be simplified and presented as in (84)b since (84)a entails (84)b:<sup>52</sup>

- (84) a.  $\exists w' [w' \in \text{Near-by}(\text{Dox}_{x,w}) \ \& \ \neg \text{forget-p}(w')] =$   
 $\exists w' [w' \in \text{Near-by}(\text{Dox}_{x,w}) \ \& \ \forall w'' [w'' \in \text{Dox}_{x,w'} \rightarrow p(w'')]$   
b.  $\exists w' [w' \in \text{Near-by}(\text{Dox}_{x,w}) \ \& \ p(w')]$  (Luck-simplified)

With these observations in mind, it is easy to see that the presupposition of *Luck* in case of *forget* (**boldfaced**) is an intervener for strong/strict NPI licensing according to Gajewski's (2011) system because the NPI there appears in the upward monotonic environment. This is not so for *refuse*, *hesitate*, and *fail*, as illustrated for *refuse* in (86). This, I argue, explains Collins and Postal's observation. In what follows NPIs are marked with the subscript <sub>D</sub> signaling that they activate domain alternatives. Also, for the moment, I represent indefinites in-situ to keep sentences readable. This is sufficient for the present mostly informal explanation of the core idea and will be changed in section 8.

- (85) a.  $[\text{CP}_1 \lambda w_1 [w_1 [\text{TP Jane}_3 \text{ forgot } [\text{CP}_2 \lambda w_2 [w_2 [\text{TP PRO}_3 \text{ to do a fucking thing}_D ]]]]]]$   
b.  $\| \text{Jane forgot to do a fucking thing}_D \|^{c,g}$  is defined only if  
 $\exists w' [w' \in \text{Near-by}(\text{Dox}_{\text{Jane},w}) \ \& \ \text{do(a fucking thing}_D)(\text{Jane})(w')] \quad \text{UE} \quad (\text{psp. of Luck})$   
when defined,  $\| \text{Jane forgot to do a fucking thing}_D \|^{c,g} =$   
 $\neg \forall w' [w' \in \text{Dox}_{\text{Jane},w} \rightarrow \text{do(a fucking thing}_D)(\text{Jane})(w')] \quad \text{DE}$
- (86) a.  $[\text{CP}_1 \lambda w_1 [w_1 [\text{TP Byron}_3 \text{ refused } [\text{CP}_2 \lambda w_2 [w_2 [\text{TP PRO}_3 \text{ to do a damn thing}_D ]]]]]]$   
b.  $\| \text{Byron refused to do a damn thing}_D \|^{c,g}$  is defined only if  
 $\exists w' [w' \in \text{Dox}_{\text{Byron},w} \ \& \ \text{do(a damn thing}_D)(\text{Byron})(w')] \rightarrow \quad \text{DE} \quad (\text{psp. of refuse})$   
 $\exists w' [w' \in \text{Dox}_{\text{Byron},w} \ \& \ \neg \text{do(a damn thing}_D)(\text{Byron})(w')] \quad \text{DE}$   
when defined,  $\| \text{Byron refused to do a damn thing}_D \|^{c,g} =$   
 $\neg \forall w' [w' \in \text{BEST}_{\text{consid}}(\text{Dox}_{\text{Byron},w}) \rightarrow \text{do(a damn thing}_D)(\text{Byron})(w')] \quad \text{DE}$

We straightforwardly account for the lack of contrast in weak NPI licensing under *forget* vs. *refuse*, *hesitate*, and *fail*, as in (10), partially repeated in (87). Weak NPIs like *anything* are licensed under all predicates in (11) because weak NPIs are not sensitive to the monotonicity of the non-assertive content.

- (87) a. Anyway, the actress refused to sign anything and refused to pose for any photos...  
b. I totally forgot to write anything down about the next two murders...

Let us now turn to another puzzle involving strong/strict NPIs, namely Puzzle #3. Recall that *want* can take both intentional and unintentional actions. So, *Luck* can be present or absent in the embedded clause. The data from Puzzle #3 is repeated in (88). Following Szabolcsi (2010), we assume that in these cases the negation is interpreted in the embedded clause.<sup>53</sup> If *Luck* is absent as in (88)a where the action is interpreted as intentional/non-accidental, strong/strict NPIs are licensed because no intervening presupposition is introduced, see (89).

- (88) a. I don't want to give a red cent to the beggar.  
b. ??I don't want to win a red cent in this lottery.
- (89) a.  $[\text{CP}_1 \lambda w_1 [w_1 [\text{TP I}_3 \text{ want } [\text{CP}_2 \lambda w_2 [w_2 [\text{not } [\text{TP PRO}_3 \text{ to give a red cent}_D ]]]]]]$   
b.  $\| \text{I want not to give a red cent}_D \|^{c,g}$  is defined only if  
 $\exists w' [w' \in \text{Dox}_{\text{sp},w} \ \& \ \text{give(a red cent}_D)(\text{sp.})(w')] \rightarrow \quad \text{DE} \quad (\text{psp. of want})$

<sup>52</sup> The same point can be argued for given that *forget* is a two-way implicative (e.g., Karttunen 1971).

<sup>53</sup> This is because *want* is a Neg-raising predicate. That is to say, *Sally didn't want to dance* can entail *Sally wanted not to dance*.

$\exists w'[w' \in \text{Dox}_{\text{sp},w} \ \& \ \neg \text{give}(\text{a red centd})(\text{sp.})(w')]$	DE	
when defined, $\  \text{I want to not give a red centd} \ ^{c,g} =$		
$\forall w' [w' \in \text{BEST}_{\text{pref}}(\text{Dox}_{\text{sp},w}) \rightarrow \neg \text{give}(\text{a red centd})(\text{sp.})(w')]$	DE	(sp. = speaker)

When *Luck* is present, as in (88)b, it introduces the UE presupposition that acts as an intervener for strong/strict NPI licensing, (90):

- (90) a. [CP<sub>1</sub> λw<sub>1</sub> [ w<sub>1</sub> [TP I<sub>3</sub> want [CP<sub>2</sub> λw<sub>2</sub> [ w<sub>2</sub> [ Luck [ not [TP PRO<sub>3</sub> to win a red centD ]]]]]]]]  
 b. ||I want not to win a red centD||<sup>c.g.</sup> is defined only if  
     ∃w'[w' ∈ Near-by(Dox<sub>sp.,w</sub>) & win(a red centD)(sp.)(w')]                 UE          (psp. of Luck)  
     ∃w'[w' ∈ Dox<sub>sp.,w</sub> & win(a red centD)(sp.)(w')] →                     DE          (psp. of want)  
     ∃w'[w' ∈ Dox<sub>sp.,w</sub> & ¬win(a red centD)(sp.)(w')]                     DE  
     when defined, ||I want to not win a red centD||<sup>c.g.</sup> =  
     ∀w' [w' ∈ BEST<sub>pref</sub>(Dox<sub>sp.,w</sub>) → ¬win(a red centD)(sp.)(w')]           DE          (sp. = speaker)

As with Puzzle #1, we straightforwardly account for the difference between strong/strict vs. weak NPIs with respect to Puzzle #3. Weak NPIs are not sensitive to the non-truth-conditional content of meaning, thus the presence of *Luck* does not affect their acceptability in accidental constructions, see (91) partially repeated from (35). Note also that our explanation in terms of *Luck* is different from the intervention effect (or ‘shielding’), which affects both strong/strict and weak NPIs alike, which is illustrated in (92). We will return to this question in section 8.

- (91) a. I don't want to give any money to the beggar.  
b. I don't want to win any money in this lottery.
- (92) a. \*Nobody gave most beggars/every beggar a red cent. (Honcoop, 1998: 116)  
b. \*Nobody gave everyone anything.

To summarize, our account for the first and third puzzles, both involving strong/strict NPI licensing, capitalizes on the idea that strong/strict NPIs are licensed only if in addition to truth-conditional content of meaning, non-truth-conditional content (presuppositions and SIs) are DE. The introduction of the propositional operator *Luck* in unintentional contexts, which comes with an UE presupposition, disrupts strong/strict (but not weak) NPI licensing.

### 7.3 Puzzle #2 explained

The account for strong/strict NPI licensing in infinitives that we saw above can be extended to anti-licensing of PPIs in the complement of *want* with a relatively minor assumption. First, recall from section 3 the original Szabolcsi's observation repeated in (93):

- (93) a. I don't want to call someone. (\*not>some)  
b. I don't want to offend someone. (<sup>ok</sup> not>some)

Let us now assume that an intervening UE presupposition/implicature can interfere with PPI anti-licensing under clause-mate negation. This assumption is collaborated by the fact that *some* is not anti-licensed under DE quantifiers with intervening scalar implicatures, such as *few* and *at most*, as we saw in (25), e.g., Szabolcsi, 2004; Nicolae, 2012. With this assumption in hand, we can account for (anti-)licensing of PPIs and strong/strict NPIs in intentional vs. unintentional contexts in a parallel fashion. That is to say, *some* can be interpreted under negation when *Luck* is present because the UE presupposition it introduces interferes with PPI anti-licensing, (94). On the other hand, when the action is intentional (*Luck* is not present), PPIs are anti-licensed by negation, (95).<sup>54</sup>

- (94) a.  $[_{CP1} \lambda w_1 [ w_1 [_{TP} I_3 \text{ want } [_{CP2} \lambda w_2 [ w_2 [ \textit{Luck} [ \text{not } [_{TP} \text{PRO}_3 \text{ to offend someone } ]]]]]]]]$   
 b.  $\|I \text{ want not to offend someone}\|^{\text{c.g.}}$  is defined only if

<sup>54</sup> PPI anti-licensing is a topic which is much less understood than NPI licensing. There are different proposals, including a lexical semantics account (in terms of multiple negations) in Szabolcsi (2004), referential account in Giannakidou 2011, and alternative-based account in Nicolae 2012. I do not commit myself to a specific approach to PPIs. The hope is that the account for the intentionality effect proposed in this paper will be compatible with the future consensus analysis of PPIs.

$\exists w' [w' \in \text{Near-by}(\text{Dox}_{\text{sp},w}) \& \text{offend}(\text{someone})(\text{sp.})(w')]$	UE	(psp. of <i>Luck</i> )
$\exists w' [w' \in \text{Dox}_{\text{sp},w} \& \text{offend}(\text{someone})(\text{sp.})(w') \rightarrow$	DE	(psp. of <i>want</i> )
$\exists w' [w' \in \text{Dox}_{\text{sp},w} \& \neg \text{offend}(\text{someone})(\text{sp.})(w')]$	DE	
when defined, $\ I \text{ want to not offend someone}\ ^{c:g} =$		
$\forall w' [w' \in \text{BEST}_{\text{pref}}(\text{Dox}_{\text{sp},w}) \rightarrow \neg \text{offend}(\text{someone})(\text{sp.})(w')]$	DE	(sp. = speaker)

- (95) a.  $[_{CP1} \lambda W_1 [_{W1} [_{TP} I_3 \text{ want } [_{CP2} \lambda W_2 [_{W2} [_{\text{not}} [_{TP} \text{ PRO}_3 \text{ to call someone } ]]]]]]]]$   
b.  $\|I \text{ want not to call someone}\|^{c:g}$  is defined only if  
 $\exists w' [w' \in \text{Dox}_{\text{sp},w} \& \text{call}(\text{someone})(\text{sp.})(w') \rightarrow$  DE (psp. of *want*)  
 $\exists w' [w' \in \text{Dox}_{\text{sp},w} \& \neg \text{call}(\text{someone})(\text{sp.})(w')]$  DE  
when defined,  $\|I \text{ want to not call someone}\|^{c:g} =$   
 $\forall w' [w' \in \text{BEST}_{\text{pref}}(\text{Dox}_{\text{sp},w}) \rightarrow \neg \text{call}(\text{someone})(\text{sp.})(w')]$  DE (sp. = speaker)

In the remainder of this section, we discuss two existing accounts for Szabolcsi's observation and some criticisms that can be raised against them.<sup>55</sup> Szabolcsi (2010) and Zu (2018) notice the parallelism between anti-licensing of PPIs and the weakening of the disjoint reference effect discussed in section 5. These authors attempt to propose a unified syntactic/semantic and syntactic accounts respectively.<sup>56</sup> We start by looking at Szabolcsi 2010. Szabolcsi (2010) uses Farkas' (1988, 1992) insight that weakening of the obviation effect can be related to the absence of a RESP-relation between the embedded clause subject and the situation described in the embedded clause. Unlike Farkas, however, Szabolcsi postulates a syntactically present non-RESP marker, whose insertion is determined locally on the complement clause. In case of obviation weakening, the non-RESP maker provides an extra layer which weakens the obviation effect. Thus, (96)a, which represents the French example in (39)a using English glosses, is paraphrased as in (96)b.

- (96) a. I want non-RESP that I amuse the children (English glosses for (39)a)  
b. The speaker wants for it to be the case/to actually happen that she amuses the children

To account for the PPI anti-licensing phenomena, Szabolcsi proposes that non-RESP 'shields' the PPI from negation. 'Shielding' is a term coined by Szabolcsi (2004) to describe the observation that PPIs become acceptable under clause-mate negation when a strong scalar expression, like *always* or *every*, intervenes between the PPI and negation, see (97) repeated from section 3. Thus, for Szabolcsi (2010), non-RESP in (98) acts similarly to *always* and *every* in (97).

- (97) a. John doesn't always call someone. (<sup>ok</sup> not>always>some)  
b. John didn't tell everyone something. (<sup>ok</sup> not>every>some)
- (98) I don't want non-RESP to offend someone. (<sup>ok</sup> neg>some)

Szabolcsi's (2010) proposal faces a number of problems. First of all, as Szabolcsi (2010) herself points out the account is still very preliminary. It does not provide answers to fundamental questions, such as what the semantics of non-RESP is or what its syntactic distribution is. Secondly, the idea of 'shielding' by non-RESP cannot be extended to NPIs since interveners like *every* and *always* are known to disrupt licensing of both strong/strict and weak NPIs, as we saw in (92). The account put forward in this paper does make an attempt to provide a deeper understanding of the origin and semantics of unintentionality captured with *Luck*. In section 8, we will also see that our proposal avoids the shielding problem and makes some clear claims about the syntax of *Luck*. In this respect, the present account can be regarded as an improvement on Szabolcsi's intuition that in addition extends the empirical ground to NPIs.

The second account we are going to look at is that of Zu (2018). Zu (2018) proposes a purely syntactic account for weakening of the disjoint reference effect and licensing of PPIs in unintentional contexts. Specifically, she postulates a Sentience projection (SenP) at the left periphery of attitude complements, whose specifier hosts a perspectival expression (building on ideas in Speas and Tenny 2003). This Sen-head comes with a different featural mark-up in what Zu (following Farkas 1988) calls canonical control (RESP), non-canonical control (non-RESP), and non-control, (99). In canonical control, Sen comes with an unvalued  $\phi$ -features, which triggers domain suspension (Bobaljik and

<sup>55</sup> To the best of my knowledge, there are no working accounts for Collins and Postal's observation and for what I called transposed Szabolcsi's observation.

<sup>56</sup> Zu (2018) also discusses verbal inflection in Newari, see below.

Wurmbrand 2013), making the searchable domain of canonical control as large as the matrix CP, (99)a. In non-canonical control, Sen comes only with an unvalued feature [uD], which is valued by PRO via Spec-head agreement and the domain is closed off at SenP, (99)b. In non-control cases Sen has no uninterpretable features and thus, Sen can host any perspectival expression, (99)c. Minimal searchable domains are underlined in (99).

- (99) a. [<sub>CP</sub> DP<sub>iD,iφ</sub> V [<sub>SenP</sub> PRO<sub>iD,uφ</sub> Sen<sub>uD,uφ</sub> [<sub>TP</sub> t<sub>PRO</sub> V ... ]]] (canonical control)  
 b. [<sub>CP</sub> DP<sub>iD,iφ</sub> V [<sub>SenP</sub> PRO<sub>iD,uφ</sub> Sen<sub>uD</sub> [<sub>TP</sub> t<sub>PRO</sub> V ... ]]] (non-canonical control)  
 c. [<sub>CP</sub> DP<sub>1iD,iφ</sub> V [<sub>SenP</sub> DP<sub>2iD,iφ</sub> Sen [<sub>TP</sub> t<sub>DP2</sub> V ... ]]] (non-control)

The difference in PPI licensing is then attributed to the locality condition, as in (100) repeated from (24). Zu (20118) proposes that English control constructions are ambiguous between canonical and non-canonical control. In (99)a, where RESP is present and thus, actions are interpreted as intentional, a PPI and negation appear in the same domain (CP) and thus, the PPI is anti-licensed. By contrast, in (99)b with no RESP, the PPI is in a separate domain (SenP) and thus, is not anti-licensed by negation.

- (100) I don't think that [<sub>TP</sub> John called someone ] (<sup>ok</sup> not>some)

For the obviation, Zu proposes that subjunctives in Romance and Hungarian are ambiguous between non-canonical control, (99)b, and non-control, (99)c. The former is associated with no-RESP interpretation and allows the matrix and embedded subjects co-refer (weakening of obviation). The latter represents core cases of the disjoint reference effect, i.e., no co-reference between the matrix and embedded subjects.

Zu's account is problematic for strong/strict NPI licensing because it relies on syntactic domains. It is well known that Neg-raising predicates, including *want* (see the discussion in section 2 and fn. 53), create one syntactic domain (e.g., Zeijlstra 2017). Thus, Zu incorrectly predicts no contrast in strong/strict NPI licensing in intentional vs. unintentional contexts. By contrast, as we saw in section 7.2, our account in terms of *Luck* does not face these challenges.

To summarize, in this section, we saw that, given our assumptions about strong/strict NPI licensing (namely that unlike weak NPIs, strong/strict NPIs require both truth-conditional and non-truth-conditional content of meaning be DE, e.g., Gajewski 2011, Chierchia 2013), we are able to explain their infelicity in infinitival constructions in which the matrix or the embedded action is interpreted as accidental. The key is that accidental actions introduce a propositional operator *Luck*, which comes with an UE presupposition, thus, disrupting strong/strict NPI licensing. A parallel explanation was put forward for the puzzling behavior of PPIs in the complement of *not want* with an additional assumption that PPIs are not anti-licensed by negation when there is an UE presupposition or scalar implicature. In the next section, we will fill in some details of our account, in particular, those that touch upon syntactic properties of *Luck*.

## 8 *Luck* and exhaustification

In this section, we take up two issues with *Luck* that to a large degree concern its syntactic properties. The first issue has been already hinted at in previous sections. It pertains to the question in what configuration intervening presuppositions and SIs affect NPI licensing. In other words, we would like to know why the presupposition introduced by *Luck* in (101)a behaves like the intervening SI introduced by *every* in (101)b (affecting strong/strict NPIs only), rather than like the intervening SI introduced by *every* in (101)c (affecting both strong/strict and weak NPIs).

- (101) a. I don't want to win any money/??a red cent in this lottery.  
 b. Not everyone gave the beggar any money/\*a red cent.  
 c. John didn't give every beggar \*any money/\*a red cent.

The second issue relates to the question why simple sentences like (102)a do not show sensitivity to the interpretation of the action when it comes to strong/strict NPI licensing (see also the google search data in section 4). If *Luck* is introduced as in (102)b, why does its presupposition not act as an intervener, (102)c?

- (102) a. John didn't win a red cent in this game.  
 b. [<sub>CP1</sub> λ<sub>w1</sub> [ <sub>w1</sub> [ *Luck* [ not [<sub>TP</sub> John won a red cent<sub>D</sub> ] ] ] ] ]  
 c. Assertion: ¬ john won a red cent<sub>D</sub> in this game DE

The answers to these two issues that we will see in this section, although mostly descriptive, will provide some perspective on the syntactic distribution of *Luck*. I will have to leave the development of more precise solutions for future research.

Before we start looking at the first issue, let me briefly introduce the idea of exhaustification and meaning strengthening as this will allow us to see more clearly the difference between what has been known as ‘direct’ and ‘indirect’ implicatures (Chierchia 2004), which will help us to address the first issue, and to understand the underlying idea behind NPI-hood in an alternative-based approach to polarity sensitivity, which will be useful for addressing the second issue.

The alternative-based approach to polarity sensitivity assimilates the mechanism responsible for distribution of PSIs to that deriving SIs, such as in (103) (Chierchia 2004, 2006, Fox 2007, Chierchia, Fox, and Spector 2012, a.o.). Under this approach, SIs are generated in the grammar with the aid of an *Exh*(austification) operator whose contribution is to deny all non-entailed alternatives, (104). For example, (103)a has the structure in (105)a, where the set of alternatives is as in (105)b. The SI in (103)b is a result of exhaustification, as in (105)c. Exhaustification is, in a way, a grammatical image of the familiar Gricean proposal for the derivation of implicatures (Grice 1989).

- (103) a. Many of your students complained.  
b. SI: Not all of your students complained. (Chierchia, 2006: 545)

- (104)  $\text{Exh}(C)(p)(w) = p(w) \& \forall q \in C [q(w) \rightarrow p \subseteq q]$

- (105) a.  $[\text{Exh } C [\text{many}_D \text{ of your students complained}]]$   
b.  $C = \{ \text{all of your students complained,} \\ \text{many of your students complained,} \\ \text{some of your students complained} \}$   
c.  $\parallel \text{many}_D \text{ of your students complained} \parallel^{c,g} =$   
 $\text{many of your students complained} \& \text{not all of your students complained}$

NPIs are similar to *many* in (103)a, but instead of scalar alternatives as in (105)c, NPIs activate subdomain alternatives. Exhaustification of subdomain alternatives in UE environment leads to contradiction, (106), which explains unacceptability of NPIs in for example, positive episodic sentences. Exhaustification of subdomain alternatives in DE environments is vacuous, (107), thus, negative sentences with an NPI are acceptable as desired.

- (106) a. \*John ate anything.  
b.  $[\text{Exh } C [\text{anything}_D [\lambda x \text{ John ate } x]]]$   
c. Assertion:  $\exists x \in D [\text{thing}(x) \& \text{ate}(x)(\text{john})]$   
d.  $C = \{ \exists x \in D' [\text{thing}(x) \& \text{ate}(x)(\text{john})] \mid D' \subset D \}$  (subdomain alternatives)  
e. = john ate a thing in D, but he didn't eat anything in any of the subdomains of D (contradiction)

- (107) a. John didn't eat anything.  
b.  $[\text{Exh } C [\text{not} [\text{anything}_D [\lambda x \text{ John ate } x]]]]$   
c. Assertion:  $\neg \exists x \in D [\text{thing}(x) \& \text{ate}(x)(\text{john})]$   
d.  $C = \{ \neg \exists x \in D' [\text{thing}(x) \& \text{ate}(x)(\text{john})] \mid D' \subset D \}$  (subdomain alternatives)  
e. exhaustification is vacuous since all the alternatives in C are entailed by the assertion

In this system, the difference between weak and strong/strict NPIs can be captured by postulating two *Exh*-operators, one of which *Exh<sup>w</sup>* ‘looks’ only at the truth-conditional content and is used with weak NPIs, whereas the other *Exh<sup>s</sup>* takes into consideration both truth-conditional and non-truth-conditional content and is used with strong/strict NPIs, (108), e.g., Chierchia 2013. This difference in the extend of exhaustification explains, for example, the contrasts in (75) and (76) above.

- (108) a.  $\text{Exh}^w(C)(p)(w) = p(w) \& \forall q \in C [{}^ap(w) \rightarrow {}^ap \subseteq {}^aq]$   
b.  $\text{Exh}^s(C)(p)(w) = p(w) \& \forall q \in C [(\pi(q))(w) \rightarrow \pi(p) \subseteq \pi(q)]$

where  $\pi(p) = {}^a p \ \& \ \pi p$ ;  ${}^a p$  = truth-conditional content of  $p$ ;  $\pi p$  = non-truth-conditional content of  $p$ <sup>57</sup>

To account for the difference between (101)b and (101)c repeated below, Chierchia (2013) proposes a variant of the Minimality Condition that requires Exh to be applied to the alternatives of the closest scalar item, e.g., *every*, before taking care of the NPI, if Exh and the scalar item in question are not part of the same segment. The exhaustification of *every* disrupts the DE environment necessary for NPI licensing. If Exh and *every* are part of the same segment, Exh ‘overlooks’ the alternatives of *every* as it is ‘too close’ and NPI licensing goes unimpeded. The ‘same segment’ is defined as follows: “X and Y belong to the same segment iff X c-commands Y and the first node that dominates Y immediately c-commands X” (p. 177, fn. 24). As illustrated below, in (109)a, Exh and *every* belong to the same segment, (109)b, but in (110)a, they do not, (110)b. This explains the contrast for weak NPI licensing. As strong/strict NPIs are sensitive to monotonicity of presuppositions and SIs, *every* is an intervener when it is part of the same segment as Exh as well as when it is not, (101)b,c.

- (109) a. Not everyone gave the beggar any money.  
       b. [TP Exh [TP [DP not everyone] [VP gave the beggar any money ]]]
- (110) a. \*John didn’t give every beggar any money.  
       b. [TP Exh [TP not [TP John [VP give every beggar any money ]]]]

The same principle can be applied to presuppositions to explain why the presupposition of *only* or a relative clause does not intervene with weak NPI licensing, whereas the presupposition of *too*, *even*, and factive predicates do (Linebarger 1987, Homer 2009, Chierchia 2013, Horn 2014, a.o.).<sup>58</sup>

What this means for us is that *Luck* should be at least propositional, i.e., attach to a CP or vP, in order to be part of the same segment as Exh. As a piece of evidence that *Luck* is propositional, consider the example in (111) suggested to me by Gillian Ramchand (p.c.). Here, *some* can be read under negation although marrying a person is arguably an intentional action not susceptible to luck. However, the action in the second conjunct is clearly accidental. If *Luck* is purely local, e.g., VP level, the availability of *some* under negation reading is unexpected. On the other hand, if *Luck* is propositional, e.g., CP level, and thus, scopes over both conjuncts in the complement of *want* in (111), the ‘not>some’ reading is predicted.

- (111) I don’t want to marry someone and end up a housewife all my life. (ok not>some)

This is admittedly a very descriptive explanation and it needs to be understood why (and how) being part of the same segment affects NPI licensing. The point I am making here is that once such understanding is achieved, we will be able to extend it to the phenomena involving *Luck*.

The second issue to which we now turn is what explains the fact that in simple sentences like (112)a repeated from above and its counterpart with a PPI in (112)b, we do not observe the intentionality effect. That is to say if (112)a and (112)b have an abstract structure in (112)c, why does the presupposition of *Luck* not interfere with the licensing of a *red cent* in (112)a and does not rescue *some* in (112)b?

- (112) a. John didn’t win a red cent in this game.  
       b. John didn’t offend someone. (\*not>some)  
       c. [CP1  $\lambda w_1$  [  $w_1$  [ *Luck* [ not [TP John verb PSI ]]]]]

The suggestion that I would like to make in this respect is that the presence of *Luck* is intimately connected with the presence of the attitude ascription whose holder is also the agent of the action. That this is so can be evidenced from the contrast in (113) where embedding under *want* is contrasted with embedding under *deserve*. Strong/strict NPIs do not become deviant under the negated *deserve*.

<sup>57</sup> For expository purposes, I lump together presuppositions and Sis under the notion of non-truth-conditional content of meaning. Chierchia (2013) deals with presuppositions and Sis separately. See the monograph for details.

<sup>58</sup> Chierchia’s (2013) story is slightly more complex as it accounts for the intervention by presuppositions and Sis differently. But it is also very descriptive. The description I provide is (I believe) faithful to the general idea and is sufficient here.



- (113) a. ??John didn't want to win a red cent in this lottery.  
b. John didn't deserve to win a red cent in this game

What distinguishes *want* from *deserve* is that the former but not the latter is attitudinal in nature. This can be demonstrated using Pearson's (2016) test based on the famous 'double-vision' paradox from Quine 1956. Quine observes that in a scenario, such as in (114), (115)a and (115)b can be both true without attributing Ralph contradictory beliefs because Ralph bears two distinct acquaintance relations to Ortcutt. This shows that *believe* is an attitude verb for only attitude verbs give rise to 'double vision' paradoxes.

- (114) *Double vision scenario*: 'There is a certain man in a brown hat whom Ralph has glimpsed several times under questionable circumstances on which we need not enter here; suffice it to say that Ralph suspects he is a spy. Also there is a grey-haired man, vaguely known to Ralph as rather a pillar of the community, whom Ralph is not aware of having seen except once at the beach. Now Ralph does not know it but the men are one and the same [Bernard Ortcutt].'  
(Quine, 1956: 56 cited after Pearson 2016: 706)
- (115) a. Ralph believes that Ortcutt is a spy.  
b. Ralph believes that Ortcutt is not a spy. (Pearson 2016, 706)

Pearson (2016) argues that if we add (116) to the scenario in (114), we can truthfully utter the sentences in (117) without attributing irrationality to Ralph, but uttering the sentences in (118) would be contradictory. This demonstrates that *want* is an attitude verb but *deserve* is not.

- (116) *Addition to Double vision scenario*: it is Ralph's birthday, and he is considering who might come to his party. He is quite happy to welcome at the party anyone whom he considers a pillar of the community, but not a suspected spy. (ibid. p. 706)
- (117) a. Ralph wants to welcome Ortcutt at the party.  
b. Ralph wants to snub Ortcutt at the party. (ibid. p. 706)
- (118) a. Ralph deserves to welcome Ortcutt at the party.  
b. Ralph deserves to snub Ortcutt at the party. (ibid. p. 706)

The origin of this 'intimate connection' between the presence of *Luck* and the ascription of the mental state to the agent of the action stems from a kind of empathy principle behind Gricean reasoning which is at the heart of the alternative-based approach to polarity sensitivity. To put it differently, when we ascribe a mental state to an individual (by making him an attitude holder, i.e., using an attitude verb), we filter in this individual's beliefs, including his beliefs about the action. This explains why control constructions with non-attitudinal verbs, as well as simple unembedded sentences, do not exhibit intentionality effects.<sup>59</sup>

## 9 Intentionality in the grammar

Referentiality and polarity sensitivity are not the only domains of the grammar sensitive to the interpretation of the action as (un)intentional, (in)voluntary, or (non)accidental. Similar phenomena have been observed in different languages and different domains of the grammar. Below, I illustrate some of such cases.

### *Aspect*

Across Slavic languages, positive imperatives can take verbs in either imperfective (IPFV) or perfective (PFV) aspect with minimal interpretative differences, (119)a. Negative imperatives, on the other hand, are well-formed only with the imperfective, (119)b. This aspectual restriction on imperatives is well-known and has been amply discussed in the literature (Forsyth, 1970; Bogusławski, 1985; Zaliznjak, 2006; Paducheva, 2013; Despić, 2020; a.o.).

- (119) a. Otkryvaj /otkroj okno! (Russian)  
open-IPFV /open-PFV window  
'Open the window!'

<sup>59</sup> A more formal rendering of this idea is a topic for future work.

- b. Ne otkryvaj /\*otkroj okno!  
not open-IPFV /open-PFV window  
'Don't open the window!'

An interesting property of the aspectual restriction in Slavic is that it is lifted when the action expressed by the verb is interpreted as unintentional/accidental. Then, PFV becomes available in negative imperatives, (120), e.g., Bogusławski, 1985; Paducheva, 2013; Despić, 2020; Goncharov, to appear.

- (120) a. Ostorozhno! Ne upadi! (Russian)  
careful not fall-PFV  
'Be careful! Don't fall down!'  
b. Smotri! Ne zabud' kluchi!  
look not forget-PFV keys  
'Be careful! Don't forget the keys!'

### Verbal inflection

In Newari (Sino-Tibetan), the disjunct inflection with co-referential subjects is normally ungrammatical, (121)a, but it becomes possible when the action is accidental or non-controlled, (121)b,c, e.g., Hale, 1980; Wechsler, 2018; Zu, 2018.

- (121) a. wō: [wa ana wan-a dhakā:] dhāla (Newari)  
(s)he-ERG (s)he there go-PST.DISJ that said  
'(S)he<sub>1</sub> said that (s)he<sub>1/2</sub> went there.'  
b. Shyam-a dhāl-a ki [wō: masika shun nāpalāt-a]  
Shyam-ERG say-PST.DISJ that s/he-ERG accidentally someone meet-PST.DISJ  
'Shyam<sub>1</sub> said that he<sub>1</sub> accidentally ran into someone.'  
c. Shyam-a dhāl-a ki [wa birāmi jul-a].  
Shyam-ERG say-PST.DISJ that he ill become-PST.DISJ  
'Shyam<sub>1</sub> said that he<sub>1</sub> became ill.'  
(Zu, 2018: 70,146,147)

### Directives

In Greek and Slovenian, which exhibit the so-called directive obviation, i.e., inability of first person exclusive forms to be subjects of regular root imperatives or subjunctives used for directives, this obviation is lifted when the preajcent is not under the speaker's control (Oikonomou, 2016; Stegovec, 2017, 2019; Kaufmann, 2019). (122)a cannot be used as a directive to another person to bring it about that the speaker sends an email, whereas (122)b is acceptable in a context where the speaker does not have an alarm clock and expects, for instance, her mother, who usually wakes up before 6am, to wake her up. (Both (122)a and (122)b can be interpreted as talking to oneself, which is irrelevant here.)

- (122) a. #Avrio na stilo ena e-mail stin Ana. (Greek)  
tomorrow SUBJ send-1SG an e-mail to Ana  
'Tomorrow I should send an email to Anna.'  
b. Avrio na ksipniso stis 6.00a.m.  
tomorrow SUBJ wake-1SG at 6.00a.m.  
'Tomorrow I should wake up at 6.00a.m.'  
(Oikonomou, 2016: 168)

### Nominal marking

Some other phenomena sensitive to the interpretation of the action concern case assignment in languages that exhibit the so-called ergativity split, like Hindi/Urdu and Georgian, or have agent/patient marking, like Central Pomo (Pomoan language spoken in Northern California) (Tuite et al. 1985; Mithun, 1991; a.o.). For example, in Hindi/Urdu, the ergative case is used to mark subjects of controlled/voluntary actions, (123)a, whereas the nominative marks subjects of non-controlled/involuntary actions, (123)b.

- (123) a. Ramne khas-a b. Ram khas-a. (Hindi/Urdu)  
Ram-ERG cough-PFV Ram-NOM cough-PFV  
'Ram coughed (purposefully).' 'Ram coughed.'  
(Tuite et al., 1985: 264)

Finally, at least one language, St'át'imcets/Lillooet (Salish language spoken in southern British Columbia), was found that has a dedicated 'out-of-control' circumfix *ka...a* (Demirdache, 1997; Davis et al., 2009; a.o.). This circumfix adds a range of nuances to the interpretation of the action, including unexpectedness, ability, and accidentality, (124).

- Little research has been carried out on the phenomena described above and then only focused on individual cases or a subset of cases. No overarching theory of the linguistic underpinnings of action sensitivity has been formulated yet.

The primary goal of this paper is to re-open the discussion of the role of intentionality in the grammar and to urge more research in this direction. We saw that the grammatical phenomena that show the intentionality effect is very rich and spans unrelated languages and distant domains of the grammar. It calls for an overarching analysis of the concept of intentionality relevant for language competence and how it is manifested across different languages. This paper is one of the first steps towards such an analysis. It focuses on three concrete puzzles from the domain of polarity sensitivity and proposes an account of these puzzles using the idea of *Luck* borrowed from epistemology.

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