

The set of alternatives must be a good question

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Abstract

A familiar way to represent the strengthened meaning of a sentence S is $\text{exh}(Q)(S)$, where Q is a set of alternatives and exh an operator akin to ‘only’ (Fox 2007, Chierchia et al. 2012). This representation is grounded in the view that restrictions on strengthening are restrictions on admissible alternatives: failure of Q to meet the relevant conditions blocks $\text{exh}(Q)(S)$ (Katzir 2007, Fox and Katzir 2011). A recent paper, Schwarz and Wagner (2024), proposes a different way to restrict strengthening: $\text{exh}(Q)(S)$ is blocked if there is an equally simple S' which has $\text{exh}(Q)(S)$ as its literal meaning. This note provides some arguments for the former approach. We argue that given independently motivated felicity conditions on expressions, in particular Partition by Exhaustification (Fox 2019, 2020) and Fatal Competition (Bar-Lev and Fox 2023), observations accounted for by constraining Q are a proper superset of those accounted for by Schwarz and Wagner’s condition.

Keywords: Strengthening, Blocking, Partition by Exhaustification, Fatal Competition, Questions

1 Introduction

1.1 Two approaches to strengthening

It is a well-known fact about natural language that a sentence S is routinely understood as conveying more information than what appears to be its literal meaning. For example, the sentence ‘some students left’ is by default interpreted as ‘some students left and some students stayed’. A common way to represent the strengthened meaning of a sentence S is $\text{exh}(Q)(S)$, where Q is a set of alternatives of S and exh an exhaustification operator akin to ‘only’: exh maps Q and S to true iff S is true and

the innocently excludable elements of Q given S are false.¹ This representation allows translation of the question ‘how can S be strengthened’ into ‘what can be alternatives of S ’. For example, suppose we observe that ‘some students left’ can be read as ‘some students left and some students stayed’ but not as ‘some students left and no students stayed’, i.e. as ‘all students left’. Given that the strengthened meaning of ‘some students left’ is represented as $\text{exh}(Q)$ (‘some students left’), the task of deriving this observation becomes one of constraining Q in such a way that it can be {‘some students left’, ‘all students left’} but cannot be {‘some students left’, ‘some students stayed’}.² The challenge of making sure that Q is constrained in this way is the so called ‘symmetry problem’ (see [Breheny et al. 2018](#) for review).

As suggested by our choice of symbols, a natural way to think about Q and $\text{exh}(Q)(S)$ is that Q is a question and $\text{exh}(Q)(S)$ is a response to Q : parsing S as $\text{exh}(Q)(S)$ amounts to interpreting S as ‘ S is the strongest true answer to Q ’, which squares with familiar claims about language use ([Grice 1967](#), [Groenendijk and Stokhof 1984](#), [Roberts 2012](#)).³ Under this view, the fact that ‘some students left’ cannot mean ‘all students left’ is due to there being no ‘good’ question Q such that $\text{exh}(Q)$ (‘some students left’) = ‘all students left’. The more general statement is (1), which we will call INPUT, as it constrains the input to strengthening.

- (1) INPUT (first version, to be revised)
 $\text{exh}(Q)(S)$ is blocked if Q is not a good question

We can then account for the distribution of strengthened meanings by calibrating the notion of ‘good question’ in (1).

A very different perspective on strengthening is proposed by [Schwarz and Wagner \(2024\)](#). What accounts for the distribution of strengthened meanings, these authors claim, is the principle in (2), which we will call OUTPUT, as it constrains the output of strengthening.⁴

- (2) OUTPUT (first version, to be revised)
 $\text{exh}(Q)(S)$ is blocked if there is a sentence S' such that (i) S' is no more complex than S and (ii) $S' = \text{exh}(Q)(S)$

OUTPUT imposes no condition on Q . What it says is that strengthening is possible only if necessary: if the same meaning can be expressed literally, without strengthening, by an equally simple sentence, then it must be so expressed. The fact that ‘some students left’ cannot be strengthened to ‘all students left’ receives a straightforward

¹We assume the definition of innocent excludability provided in [Fox \(2007\)](#): S' is an innocently excludable element of Q given S iff S' is an element of every maximal subset Q' of Q such that $\{S\} \cup \{-S'' : S'' \in Q'\}$ is consistent.

²Assuming that ‘stayed’ is equivalent to ‘did not leave’.

³Note that this way of thinking about strengthening also implies that S is a member of Q , i.e. that the set of alternatives of S includes S itself. We believe this condition on alternatives is assumed by most (if not all) works on exhaustification.

⁴The formulation of OUTPUT in (2) is presented in [Schwarz and Wagner \(2024\)](#) and is called ‘Blocking constraint’. In [Schwarz and Wagner \(2025\)](#), which extends and elaborates on [Schwarz and Wagner \(2024\)](#), a slightly more sophisticated version of the condition is proposed: $\text{exh}(Q)(S)$ is blocked if there is a sentence S' such that (i) S' is no more complex than S , (ii) $S' \subset S$, and (iii) $\text{exh}(Q)(S) \subseteq S'$. The reasons for updating OUTPUT to this version are orthogonal to present concerns.

explanation: the same meaning can be expressed literally by the sentence ‘all students left’, which is no more complex than ‘some students left’.

1.2 What this paper is about

As far as we can see, there is no need for Schwarz and Wagner to represent the strengthened meaning of S as $\text{exh}(Q)(S)$. It seems to us that OUTPUT may be formulated as follows: S cannot be strengthened to $S \wedge A$ if there is an S' such that (i) S' is no more complex than S, and (ii) $S' = S \wedge A$. However, we refrain from claiming that this is what Schwarz and Wagner meant. In fact, we take the fact that these authors do represent the strengthened meaning of S as $\text{exh}(Q)(S)$ to be a reason for remaining agnostic about whether they think constraints on Q are required in addition to OUTPUT. In other words, we remain agnostic as to whether Schwarz and Wagner’s claim is (3-a) or (3-b).

- (3) a. OUTPUT alone is needed to solve the symmetry problem.
- b. Both INPUT and OUTPUT are needed to solve the symmetry problem.

The aim of this paper is to show that neither (3-a) nor (3-b) is correct. Specifically, we will argue INPUT is all that is needed to break symmetry. The basis of our argument consists in two main considerations: (i) the ingredients for spelling out the notion of a good question are independently motivated, and (ii) there are facts which INPUT can but OUTPUT cannot account for.

2 Fleshing out ‘good question’

2.1 Q must be a Hamblin question

Let us try to make precise what ‘good question’ means in (1). We start with (4), which incorporates an idea borrowed crucially from Hirsch and Schwarz (2025): the domain of exhaustification must be a Hamblin question.⁵

- (4) INPUT (second version, to be revised)
 $\text{exh}(Q)(S)$ is blocked if Q is not a Hamblin question

A Hamblin question consists of ‘congruent answers’ (Hamblin 1973). Congruent answers are constrained by the syntax of the question. They are thus a formally defined proper subset of the relevant answers.⁶ Suppose the question is ‘who left’ and the people under discussion are John and Mary. The set CA of congruent answers would be {‘John left’, ‘Mary left’, ‘both left’},⁷ whereas the set RA of relevant answers would include CA and, in addition, such sentences as ‘John did not leave’, ‘John left but Mary did not leave’, ‘I believe John left but Mary did not’ ($\Box(j \wedge m)$), ‘John left and I am

⁵Hirsch and Schwarz (2025) were concerned with ‘only’ and a different set of facts from the one we are discussing in this paper. We will come back to ‘only’ in section 4.

⁶The idea that the set of alternatives must be a formally constrained subset of the set of relevant sentences lies at the core of the Neo-Gricean approach to strengthened meanings (‘implicatures’). For supporting arguments see Horn (1972), Sauerland (2004), Katzir (2007), Fox and Katzir (2011), Trinh and Haida (2015), among many others.

⁷We assume that ‘who’ ranges over both singular and plural individuals.

not ruling out the possibility that Mary did too’ ($j \wedge \diamond m$), etc.⁸ Given (4), we predict that B’s answer in (5) can be strengthened to ‘John left but Mary did not’ but cannot be strengthened to ‘both left’ or ‘John left and I’m not ruling out the possibility that Mary left too’ (Schmitt and Haslinger 2025). We believe this prediction is correct.

- (5) A: Who left?
B: John did.

We also predict that ‘some students left’ can be strengthened to ‘some students left and some of them stayed’ but not to ‘all students left’. Following Spector (2008), Fox (2018), Xiang (2021), Hirsch and Schwarz (2025), we assume that ‘who’ can also range over upward monotone quantifiers. In other words, there is a reading of ‘who left’ under which it has ‘some students left’ and ‘all students left’ as congruent answers. Importantly, there is no reading of ‘who left’ under which it has ‘some students left’ and ‘not all students left’ as congruent answers. Thus, $\text{exh}(Q)$ (‘some students left’), where Q is the Hamblin question ‘who left’ with ‘who’ ranging over quantifiers, can mean ‘some but not all students left’ = ‘some students left and some of them stayed’, but cannot mean ‘all students left’.⁹

It should be noted that speakers can and do ‘deflect’: they respond to a question Q with an answer A' that actually addresses a (slightly) different question Q' which must then be accommodated. Given (4), we predict that the strengthening of A' is computed from congruent answers to Q' . We believe this prediction is also correct. Consider the exchange in (6).

- (6) A: Who left?
B: Mary stayed.

We submit that the question which is naturally accommodated in this scenario is ‘who left and who stayed’, and that the set of congruent answers to this question is {‘John left’, ‘Mary left’, ‘both left’, ‘John stayed’, ‘Mary stayed’, ‘both stayed’}.¹⁰ What we predict, then, is that ‘Mary stayed’, due to the presence of the symmetric alternatives ‘John stayed’ and ‘John left’, cannot be strengthened to ‘Mary stayed \wedge S’ where S is a statement about John. We believe this prediction is correct: B’s response in (6) is naturally read as conveying ‘ignorance’ about John: it neither implies that John left nor implies that John stayed. This account also does justice to the intuition that the question this response alludes to, even though it is clearly not ‘who left’, does not make sentences of the form ‘x left’ incongruent. Rather, it seems to be one which has both ‘x left’ and ‘x stayed’ as congruent answers.¹¹

⁸We assume that relevance is closed under Boolean operations (Lewis 1988) and, also, under speaker’s belief (Fox 2016, Buccola and Haida 2019, 2020, Trinh 2024).

⁹Note that we also predict, correctly, that ‘some students left’, as response to ‘who left’, cannot mean ‘some students left and I’m not ruling out the possibility that all of them did’. OUTPUT does not make this prediction.

¹⁰Thus, we claim that ‘who left and who stayed’ is the union of ‘who left’ and ‘who stayed’. We remain agnostic as to how this claim is to be derived.

¹¹Note that B’s response in (6) also allows a slightly less natural reading in which it addresses the question ‘who stayed’ which has ‘John stayed’ and ‘Mary stayed’ as congruent answers. Under this reading, ‘Mary stayed’ is predicted to have the strengthened meaning ‘Mary stayed and John left’. We believe this is a possible interpretation of this response.

It is not clear to us how OUTPUT would deal with the observations above. Specifically, if there are no constraints on Q beyond relevance, we do not see how this condition can prevent B’s reponses in (5) and (6) from being strengthened into a conjunction consisting of the response and any of the relevant answers. For example, why can ‘John left’, as reponse to ‘who left’, not be strengthened into ‘John left and I am not ruling out the possibility that Mary did too’, given that this proposition cannot be expressed by a sentence no more complex than ‘John left’?

2.2 Q must be a felicitous question

We have considered wh-questions such as ‘who left’ and ‘who left and who stayed’. But what about disjunctive questions such as ‘did John talk to Sue or did Bill talk to Mary’. We will assume that the congruent answers to a disjunctive question are the individual disjuncts. Thus, disjunctive questions are helpful in this discussion because in them we can see directly what the congruent answers are. The congruent answers to the question above are ‘John talked to Sue’ and ‘Mary talked to Bill’. An issue then arises which we need to resolve: is there a Hamblin disjunctive question Q such that $\text{exh}(Q)$ (‘John left’) = ‘both left’? Given that this strengthened meaning is not attested, INPUT would be supported if such a question is not a ‘good’ question. We believe this is the case. Consider (7).¹²

(7) #Did John leave or did Mary stay?

This question would induce ‘both left’ as strengthened meaning of ‘John left’. We submit that (7) sounds odd, i.e. is infelicitous. Thus, we would further specify INPUT as (8).

(8) INPUT (third version, to be revised)
 $\text{exh}(Q)(S)$ is blocked if Q is not a felicitous Hamblin question

What about ‘some students left’? Is there a felicitous disjunctive question Q such that $\text{exh}(Q)$ (‘some students left’) = ‘all students left’? We submit that the answer is no. Consider the questions in (9), which would induce such a strengthening.¹³

(9) #Did some students leave or did some of them stay?

We submit that (9) is as infelicitous as (7), and thus, that INPUT, as formulated in (8), accounts for the fact that ‘some students left’ cannot mean ‘all students left’.

2.2.1 Partition by Exhaustification & Fatal Competition

We have adopted Hirsch and Schwarz’s (2025) crucial insight that the distribution of strengthened meanings is constrained by the requirement that the input question to exh be a Hamblin set. We assume that the addition we make, namely the condition that this question be felicitous, is already implicit in Hirsch and Schwarz’s proposal.

¹²Or, alternatively, ‘did John leave or did Mary not leave’, which is also infelicitous. The argument which follows can be replicated with ‘stay’ replaced by ‘not leave’.

¹³As would the question ‘did some students leave or did some of them not leave’, which is as infelicitous as (9). Assuming ‘stay’ is equivalent to ‘not leave’, what we say about (9) also applies to this question.

Has the symmetry problem been solved? The answer, in our view, is no. What we have done is shift the burden of explanation from the theory of strengthened meanings to the theory of questions. The issue that arises at this point is what makes certain questions felicitous and others infelicitous? While we will not provide a complete theory of the felicity of questions here, we will argue that some independently needed assumptions about questions and semantic strengthening systematically rule out certain questions, providing an explanation for their infelicity and hence for the systematic absence of some potential strengthened meanings. Thus, we will take the further step of explaining why (7) is infelicitous. As it turns out, the ingredients for such an explanation have been motivated in the literature. The first is the constraint which goes by the name of Partition by Exhaustification (PbE), proposed by Fox (2019, 2020).¹⁴

- (10) Partition by Exhaustification (first version, to be updated)
 A question Q is felicitous in a context C only if elements of Q , once exhausted with respect to Q , partition C

To illustrate how PbE works, consider the question ‘which girl left’, where Mary, Sue, Anne are the girls under discussion. Assuming that singular which-phrases range over atomic individuals, the congruent answers are ‘Mary left’, ‘Sue left’, ‘Anne left’. Given PbE, any world w in the context must be such that either only Mary left in w , only Sue left in w , or only Anne left in w . Thus, we derive the fact that ‘which girl left’ is only felicitous in a context where it’s presupposed that there is a unique girl who left, just as observed.

The second ingredient for explaining the infelicity of (7) is the constraint which goes by the name of Fatal Competition (FC), proposed by Bar-Lev and Fox (2023).¹⁵

- (11) Fatal Competition (FC)
 The use of a sentence S in a context C is infelicitous if there is an S' such that
 (i) S' is no more complex than S , (ii) $S' \subset S$, and (iii) $S =_C S'$

To illustrate how FC works, consider the (12). In the realistic context where Italians come from the same country, this sentence is odd, as noted by Magri (2009).

- (12) #Some Italians come from a warm country

The oddness of (12) is predicted by FC, as the sentence is contextually equivalent to ‘(all) Italians come from a warm country’, which is both no more complex and logically stronger than ‘some Italians come from a warm country’.

¹⁴The definition in (10) is informal. Here is the formal definition of PbE. Let C be a context, Q be a question, and E_Q be $\{\text{exh}(Q)(S) : S \in Q\}$ (i.e. the set of exhausted answers to Q).

- (i) A question Q is acceptable in a context C only if E_Q partitions C , i.e. only if
 a. $\forall S \in E_Q : S \cap C \neq \emptyset$ ‘no member of E_Q is empty’
 b. $\forall S, S' \in E_Q : S \cap S' \cap C = \emptyset$ ‘no members of E_Q overlap’
 c. $\bigcup\{S \cap C \mid S \in E_Q\} = C$ ‘ E_Q covers C ’

¹⁵We write $S' \subset S$ to mean S' is logically stronger than S and write $S =_C S'$ to mean S is contextually equivalent to S' in C , i.e. $S \cap C = S' \cap C$. The original formulation of FC in Bar-Lev and Fox (2023) is a bit different but the difference is immaterial for present purposes.

We are now in the position to explain the infelicity of (7) and (9). Given PbE, the context C required for (7) to be felicitous must be such that for every world w in C, either both left in w or both stayed in w. In such a context, ‘John left’ would be equivalent to ‘both left’ and ‘Mary stayed’ would be equivalent ‘both stayed’. Given FC, (7), which uses ‘John left’ and ‘Mary stayed’ as contextually equivalent to sentences that are no more complex and logically stronger, is predicted to be infelicitous, as observed.¹⁶

The infelicity of (9) follows from PbE and FC in the same way as that of (7). Given PbE, the context C required for (9) to be felicitous must be such that for every world w in C, either all students left in w or all students stayed in w. In this ‘homogeneous’ context, ‘some students left’ would be equivalent to ‘all students left’ and ‘some students stayed’ would be equivalent to ‘all students stayed’. Given FC, (9), which uses ‘some students left’ and ‘some students stayed’ as contextually equivalent to sentences that are no more complex and logically stronger, is predicted to be infelicitous, as observed.¹⁷

3 Interim summary

We have been arguing for INPUT, as presented in (8), and against OUTPUT, as presented in (2). Let us review the records. Here are two observations which can be explained by both OUTPUT and INPUT: (A) ‘John left’ can be strengthened to ‘John left and Mary stayed’ but not ‘both left’; (B) ‘some left’ can be strengthened to ‘some left and some stayed’ but not ‘all left’. The explanation from OUTPUT is very simple: the unattested reading can be expressed literally by another sentence which is no more complex. The explanation from INPUT is more involved: there is no good question Q which can input the strengthening process that yields the unattested reading, where Q is good only if it is a felicitous Hamblin question, i.e. one that satisfies PbE and FC.

As we said at the end of section 2.1, an observation which we think INPUT explains, but OUTPUT does not, is that ‘John left’, as response to ‘who left’, cannot be strengthened to ‘John left and I’m not ruling out the possibility that Mary left too’.¹⁸ From section 2.2.1 it should emerge that there is yet another fact which INPUT does but OUTPUT does not immediately explain: the infelicity of the questions in (7) and (9) as well as that of the Magri sentence in (12), reproduced below.

(7) #Did John leave or did Mary stay?

(9) #Did some of the students leave or did some of them stay?

¹⁶Note that if each individual disjunct in (7) is parsed as strengthened with respect to a ‘who’-question that has that disjunct as congruent answer, i.e. if ‘John left’ is strengthened to ‘John left but Mary did not leave’ and ‘Mary stayed’ is strengthened to ‘Mary stayed but John did not stay’, then (7) would consist of disjuncts which are equivalent: it would mean ‘did John leave and Mary stay or did Mary stay and John leave’. This question would of course violate PbE, which requires that its answers not overlap.

¹⁷Strengthening each individual disjunct in (9) with respect to a congruent ‘who’-question faces the same problem as in the case of (7). If each instance of ‘some’ in (9) is strengthened to ‘some but not all’, the questions would end up having equivalent disjuncts: it would mean ‘did some leave and some stay or did some stay and some leave’. PbE, which requires that answers not overlap, rules out such a question (see note 16).

¹⁸Also, that ‘some left’ cannot be strengthened to ‘some left and I’m not ruling out the possibility that all did’ (see note 9).

(12) #Some Italians come from a warm country.

INPUT has PbE and FC as components. The infelicity of (7) and (9) are explained by PbE and FC and the infelicity of (12) is explained by FC alone. It is not clear to us how OUTPUT would rule out these expressions. What is ‘blocked’ is the strengthening of ‘John’ to ‘both’ and of ‘some’ to ‘all’. This means OUTPUT would only rule out (7), (9), and (12) if such strengthening is obligatory in these cases. But we do not see why that should be the case. For example, we do not see why (12) has to be strengthened to ‘all Italians come from a warm country’.¹⁹ We fail to see which principle forces ‘some’ to be strengthened to ‘all’ just because ‘some’ and ‘all’ are contextually equivalent. Note, also, that it does not help to update OUTPUT into a ‘contextual’ variant in (13).

(13) OUTPUT (second version, to be revised)
exh(Q)(S) is blocked if there is an S' such that (i) S' is no more complex than S, and (ii) $S' =_C$ exh(Q)(S)

This formulation, although it might give the impression of being equivalent to FC, is in fact fundamentally different from FC in the same way as the original formulation in (2) is. Specifically, (13) would still only predict the infelicity of (12) under the assumption that this sentence must be strengthened to ‘all Italians come from a warm country’.²⁰

4 The case of ‘only’

As we have noted, the intuition behind OUTPUT is that being explicit is better than being suggestive. The reading ‘all left’ is blocked for the sentence ‘some left’ but not for the sentence ‘none stayed’, because it requires appending silent exh to the former but not the latter. INPUT, on the other hand, is not motivated by this intuition. It then follows that we would have an argument for INPUT and against OUTPUT if a case can be found where exh is overt but a strengthened meaning is still blocked in just the way predicted by INPUT. It turns out that such a case can in fact be found. Consider (14).

(14) Only some students left

It is clear that (14) can mean ‘some but not all students left’ but not ‘all students left’. Assuming that ‘only’ is, basically, the overt counterpart of exh, all of the arguments we provided about exh(Q)(S) in section 2 can be transferred to only(Q)(S), provided we revise INPUT slightly.

(15) INPUT (final version)
OP(Q)(S) is blocked if Q is not a felicitous Hamblin question (where OP is exh or ‘only’)

OUTPUT, we believe, has nothing to say about (14).²¹

¹⁹In fact, Magri himself explains the infelicity of (12) by claiming that it must be strengthened in the opposite direction, namely to ‘some but not all Italians come from a warm country’ (Magri 2009).

²⁰We will discuss another contextual variant of OUTPUT in section 7.

²¹As acknowledged by Schwarz and Wagner themselves (Schwarz and Wagner 2025: 7, footnote 8). Note that the same can be said about ‘only John left’.

5 Reformulating PbE

There is, however, a difference between *exh* and ‘only’, in that the former asserts while the latter presupposes the prejacent: *exh*(Q)(‘some students left’) asserts that some students left while *only*(Q)(‘some students left’) presupposes that some students left (Horn 1969). This is evidenced by the contrast in (16).

- (16) a. I’ve always known that there were students among the people who left.
Today I learned that only some students left.
b. #I’ve always known that there were students among the people who left.
Today I learned that some students left.

Given the local context of the second sentence established by the first, Maximize Presupposition (MP) militates against *exh* in favor of ‘only’ (Heim 1991, Sauerland 2008).²² Now, it turns out that both options are available as answers to ‘who left’ where ‘who’ ranges over quantifiers.

- (17) Who left?
a. Only some students did.
b. Some students did.

Given PbE, ‘who left’ = {‘some students left’, ‘all students left’} requires every world *w* in the context to be such that either some but not all students left in *w* or all students left in *w*. In other words, PbE requires ‘who left’ to presuppose that some students left. This means we predict (17-a) to be felicitous and (17-b) to be infelicitous. The fact that both are felicitous therefore poses a challenge. The challenge is sharpened by replacing ‘who left’ with the disjunctive question in (18), which clearly presupposes that some students left.²³ Again, we see that answers with ‘only’ as well as *exh* are felicitous.

- (18) Did some students leave, or did all of them leave?
a. Only some students left.
b. Some students left.

We propose to meet this challenge as follows. First, we provide a reformulation of PbE which is more differentiated than the version presented in (10). Let C_Q be $C \cap \bigcup Q$, i.e. the intersection of *C* with the union of *Q*.

- (19) Partition by Exhaustification (final version)
(i) A question *Q* is felicitous in a context *C* only if elements of *Q*, once exhaustified with respect to *Q*, partition C_Q

²²The contrast in (16) could also be explained by assuming the version of *exh* proposed in Bassi et al. (2021), called ‘pex’, together with the requirement that sentences must be informative after presupposition accommodation. However, we decide to stay with *exh* here instead of pex.

²³We assume that the first disjunct of (18) is strengthened with respect to $Q = \text{‘who left’} = \{\text{‘some students left’}, \text{‘all students left’}\}$ to circumvent a violation of Hurford’s Constraint (Hurford 1974, Chierchia et al. 2012). Note that it cannot be strengthened with respect to (18) itself, as that would incur an infinite regress.

- (ii) Q is strongly felicitous in C only if Q is felicitous in C and C entails that at least one exhaustified answer to Q is true

The reader is invited to verify for herself that ‘felicitous’ in (10), the first version of PbE, is equivalent to ‘strongly felicitous’ in (19), the final version. Reformulating PbE in this way allows us to ask which environments require questions to be not only felicitous but also strongly felicitous. We will not attempt to settle this question here. What we will say is that the domain of exh is not one of these environments. In other words, we would insist that INPUT remain as formulated in (15), with ‘felicitous’ now understood in light of (19).

Let us now come back to (17) and (18). We claim that while these matrix questions most probably do have to be strongly felicitous and therefore do presuppose that some students left, the response ‘some students left’ represents a case of ‘deflection’: it answers a slightly different question which does not presuppose that some students left. We submit that this question is (20).²⁴

- (20) Did no students leave, some students leave, or all of them leave?

Since Q = ‘who left’ = {‘some students left’, ‘all students left’}, which would presuppose some students left if it were matrix, occurs only as the domain of exh in the second disjunct of (20), the question (20) itself does not presuppose some students left.²⁵ And since ‘some students left’ is construed as answering (20) under the pretense that this question, not (17) or (18), has been asked, the sentence does not constitute a violation of Maximize Presupposition.²⁶ The contrast between (16-b) on the one hand and (17-b) and (18-b) on the other would then be due to the fact that it is easier for a speaker to pretend that she has been asked a different question than it is for her to pretend that she has uttered a different sentence.

Finally, note that the reformulation of PbE does not affect our arguments regarding (7) and (9), reproduced below, as the domain of strengthening for ‘John left’ and ‘some left’, respectively.

- (7) #Did John leave or did Mary stay?
 (9) #Did some students leave or did some of them stay?

For (7) to be felicitous in context C in the sense of (19), every world w in C in which John left or Mary stayed must be such that either both left in w or both stayed in w.

²⁴As in the case of (18), we assume that the second disjunct of (20), due to Hurford’s Constraint, is parsed as exh(Q)(‘some students left’) with Q = ‘who left’ = {‘some students left’, ‘all students left’}. Again, note that the second disjunct of (20) cannot be parsed as exh(Q)(‘some students left’) where Q is (20) itself, as that would incur an infinite regress (see note 23).

²⁵The context C required for (20) to be strongly felicitous must be such that for every world w in C, either no students left in w, some but not all students left in w, or all students left in C.

²⁶Another piece of evidence that (20) can be accommodated after (17) and (18) have been asked is the fact that both (17) and (18) can be answered with ‘no students left’. We assume that ‘some students left’, as answer to (20), is just the second disjunct of this question, i.e. is exh(Q)(‘some students left’) where Q = ‘who left’ = {‘some students left’, ‘all students left’}. There is another possible parse for ‘some students left’ as response to (20), namely exh(20)(‘some students left’). But this parse, due to the second and third disjuncts of (20) being symmetric alternatives (as the second means ‘some but not all students left’ and the third means ‘all students left’), would be equivalent to the non-strengthened meaning of ‘some students left’. In other words, the parse would make exh superfluous. We conjecture that this is the reason the other parse is preferred.

Thus, C is still a context in which ‘John left’ is equivalent to ‘both left’ and ‘Mary stayed’ is equivalent to ‘both stayed’, and the question is still predicted to violate FC and hence be infelicitous. For (9) to be felicitous in C in the sense of (19), every world w in C in which either some students left or some students stay must be such that either all students left in w or all of them stayed in w . Thus, C is still a context where ‘some students left’ is equivalent to ‘all students left’ and ‘some students stayed’ is equivalent to ‘all students stayed’, and the question is still predicted to violate FC and hence be infelicitous.

6 Solving Feinmann’s puzzle

Feinmann (2025) presents the following puzzle: $\text{exh}(Q)(S)$ cannot mean $S \wedge \neg S'$ even though S' is stronger and equally simple and there is no other stronger and equally simple S'' such that $S \wedge \neg S' \wedge \neg S''$ is a contradiction. In other words, exhaustification is sometimes blocked even if there is no symmetry. An example is (21), which cannot mean ‘John bought shoes that are not sneakers’, even though there seems to be no symmetric counterpart of ‘John bought sneakers’.²⁷

(21) John only bought shoes

INPUT can account for this observation. The question that would induce the unattested reading is ‘what did John buy’ = {‘John bought shoes’, ‘John bought sneakers’}. Assuming that exh is blind to encyclopedic knowledge (Magri 2009), the set of exhaustified answers would be {‘John bought shoes but not sneakers’, ‘John bought sneakers but not shoes’}. As the second sentence is a contextual contradiction, the question violates PbE, given the definition of ‘partition’ according to which no cell can be empty (see note 14).

We do not see how OUTPUT would deal with Feinmann’s puzzle: there is no sentence which is no more complex than ‘John bought shoes’ and means ‘John bought shoes that are not sneakers’.²⁸

7 An attempt to save OUTPUT

The reader may wonder whether our formulation of OUTPUT in (13) is still too uncharitable. Suppose we liberalize Schwarz and Wagner’s (2024) condition to such an extent that it includes not only the context but also ‘only’. Specifically, suppose we reformulate the principle as in (22).

(22) OUTPUT (final version)
 $\text{OP}(Q)(S)$ is blocked if there is an S' such that (i) S' is no more complex than S and (ii) $S' =_C \text{OP}(Q)(S)$ (where OP is exh or ‘only’)

²⁷Feinmann’s examples involve exh , not ‘only’, but the point remains, assuming exh , for the purposes at hand, can be considered a covert variant of ‘only’.

²⁸Nina Haslinger pointed out to us that the sentence ‘John only has an MA’ can and does naturally mean John does not have a PhD. The set of alternatives is thus {MA, PhD}. Given that having a PhD requires having an MA, this example poses a problem for our explanation of Feinmann’s puzzle. We must leave this problem for future research

As it turns out, even this version of OUTPUT, which no longer reflects the intuition that being literal is better than being suggestive, still loses against INPUT. Consider (16-a) again, reproduced below.

(16-a) I've always known that there were students among the people who left. Today I learned that only some students left.

It is clear that the sentence ‘only some students left’ in (16-a), in the relevant context, can mean ‘some students left and some students stayed’. INPUT predicts this meaning to be possible: the domain of ‘only’ is ‘who left’ = {‘some students left’, ‘all students left’}, which is a felicitous Hamblin question. OUTPUT, as formulated in (22), blocks this reading. The reason is that ‘some students left and some students stayed’, in this context, is equivalent to ‘some students stayed’, which is no more complex than ‘some students left’.

We believe that the failure of such an extensive reformulation of OUTPUT as (22) to account for this simple data point reveals a deep problem with an approach to strengthening which seeks to constrain its output instead of its input.

8 Conclusion

We have argued that the domain of exhaustification must be a felicitous Hamblin question (following Hirsch and Schwarz 2025). The felicity conditions involved in our explanation of the facts are Partition by Exhaustification and Fatal Competition. We showed that this approach to strengthened meaning, which seeks to constrain the input to exhaustification, is empirically more adequate than the approach proposed by Schwarz and Wagner (2024), which seeks to constrain the output of exhaustification.

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