

Towards A Unified Analysis of the Present Perfect
Ruoying Zhao, University College London

I will provide a novel analysis of the present perfect, and show that in English, the present perfect is indefinite (discourse new) and the simple past definite (discourse old). This analysis explains the various readings and constraints of the present perfect that previous accounts struggle with, such as the current relevance/hot news reading, and the Present Perfect Puzzle (Klein 1992). Furthermore, I argue that what morphologically looks like the present perfect in Romance and Germanic languages can be given the same compositional semantic analysis, with the variation explained in terms of the presence of absence of a (definite) competitor, parallel to the variation of (in)definites DPs (cf. Heim 1991, 2011).

DRT-Style Formalization (cf. Grønn 2003): The perfect operator (2) is a relative past that anchors on an input time t (cf. Grønn and von Stechow 2016 ‘the temporal center’), and introduces a t' ($t' \leq t$) into the discourse, without presupposing any novelty or familiarity condition on t' . I follow Pancheva and von Stechow (2004) and assume that a complex operator [present perfect] is formed at T. To maintain compositionality, it must have the formula as in (3). In contrast, the past (1) presupposes that a relation ρ (‘equals’ or ‘just after’) holds between t' and a t already in the context (Partee 1973, 1984, etc.).

- (1) a. $\llbracket \text{past} \rrbracket = \lambda p[t' | p(t')] \{ \underline{t} | \underline{t} < n, \rho(\underline{t}, t') \}$ b. $\llbracket \text{present} \rrbracket = \lambda p.[n | p(n)]$ ($n = \text{now}$)
(2) $\llbracket \text{perfect} \rrbracket = \lambda p \lambda t [t' | p(t')] \{ | t' \leq t \}$, where $t' \leq t$ iff there is no $t'' \subset t'$ such that $t'' > t$
(3) $\llbracket \text{present perfect} \rrbracket = \lambda p.[n t' | p(t')] \{ | t' \leq n \}$ ($\{ \}$ indicates presuppositions)

When the viewpoint aspect is perfective, whether t' overlaps with n doesn't make any difference, and the present perfect and the simple past only differ in the presupposition. In languages like English, **Maximize Presupposition** (Heim 1991, Singh 2011, etc.) rules out the present perfect when referring to an antecedent, and an **antipresupposition** (Percus 2006, etc.) arises that the present perfect must be **discourse new**, as a result of the competition with the simple past.

When the viewpoint aspect is imperfective, there are two cases: 1. the same kind of antipresupposition arises (*I #was/have been learning French out of the blue*); 2. the present perfect can get the **Universal Reading** since t' can overlap with n (with adverbials such as *ever since*, details omitted to save space).

Present Perfect as an Indefinite Past: As illustrated in (4)-(5), in English, the simple past and the present perfect contrast with respect to an antecedent time. In (4), it is when John visited Rome, and in (5), it is the time of John's trip. The simple past (4a,5a) refers to this time, while the present perfect (4b,5b) cannot and must refer to a new time. This parallels with the definite and indefinite DPs in (7)-(8). In (4), the antecedent is the chair John sat on, and in (5) it is the spider. The definites (7a,8a) refer to the antecedent, unlike the indefinites (7b,8b). When there is no antecedent in the context (i.e. not all parties in the conversation know it) as in (6) and (9), the simple past and the definite are infelicitous.

Simple Past vs. Present Perfect		Definite vs. Indefinite Noun Phrases	
(4)	John has visited _i Rome. He went _i there with some friends. Mary a. went _{i/#j} too. b. has visited _{j/#i} Rome too.	(7)	There were four chairs. John sat down on a chair _i . Then Mary a. knocked the chair _{i/#j} over. b. knocked a chair _{j/#i} over.
(5)	Mary knows that John had a trip to Italy last month _i , and she's asking if he visited Rome during the trip. a. Did _i you visit Rome? b. Have you visited _{j/#i} Rome?	(8)	There is a giant spider _i in the house. Everyone is scared. a. The giant spider _i may be in this room. b. A giant spider _{j/#i} may be in this room.
(6)	Mary asks about John's experience (out of the blue). #Did you visit/Have you visited Rome?	(9)	John saw a giant spider, but Mary doesn't know anything about it. John: I just saw #the/a giant spider!

The time/entity introduced by the present perfect and indefinite DPs as new discourse referents can be picked up in the subsequent sentence by the simple past (10a) or a definite DP (10b).

- (10) a. John has lived_i in London. He lived_i there with his parents.
b. I put some food_i in the garden and a cat_j appeared. The cat_j loved the food_i

In narration, the simple past can be used in a sequence, to refer to the time in the preceding sentence or the time ‘just after’ it (recall $\rho(\underline{t}, t')$ in (1)). The present perfect cannot be used in such a sequence (11).

- (11) Mary was_i crossing the road. She was_i careless. She turned_i around just in time. A truck rushed_i by.

Antipresupposition Effects are observed in languages like English where the present perfect loses the competition to a definite simple past, in the same way that indefinite DPs do. For indefinite DPs, Heim (1991, 2011) argues that the antipresupposition is the source of the ‘discourse new’ and the

‘multiplicity’ inferences. I further claim that it is related to the ‘hot news’ reading of the present perfect (12), where the time introduced is new to the addressee. It can also give rise to the **resultative** or the **experiential** reading, depending on the (extralinguistic) situation. For example, (13a) means either the water level now is higher than before (resultative), or has risen in the past (experiential). Similarly, (13b) means either John has the experience of breaking a leg or his leg is now broken.

(12) a. The president has been assassinated! b. (To a time-travelled Roman soldier) The Roman Empire has collapsed!

(13) a. The water level has risen. b. John has broken his leg.

The multiplicity inference is illustrated by the following. In (14), when the speaker could have used the definite DP (due to bridging, see below) but chooses not to, an inference arises that there could be more than one seat so the speaker failed to refer. Similarly, in (15), the inference is that there could be multiple instances of John’s death (N.B. unless it’s discourse new). This is the source of the **repeatability** inferences and the **habitual** reading of the present perfect.

(14) The bicycle was fine after... a. the seat was replaced. b. ??a seat was replaced

(15) ??Has John (ever) died? ??Yes, he has.

The English simple past also parallels with definite DPs in having **bridging uses** (Clark 1975), where the antecedent for the definite is not explicitly introduced but inferred from the trigger (there is a letter/church so there must be an envelope/building time). In these cases, the indefinite DP and the present perfect cannot be used. Note that cases like (16b) cannot be the deictic use (Partee 1973) or spelling out a ‘perfect aspect’ (Kratzer 1998). Compare (16b) to (17). Nothing prevents the use of the simple past in (17a) being ‘deictic’, but the bridging analysis successfully explains the data (can’t bridge in (17a) because the trigger-the scratches-is still discourse new, must bridge in (17b) when the trigger is already in the context). The ‘perfect aspect’ cannot rule out the present perfect in (17b).

(16) a. I got a letter. The envelope/#an envelope was broken. b. (Pointing at a church) Who built/#has built this church?

(17) a. (The speaker is reporting what she sees to an addressee over the phone) Fluffy #scratched/has scratched all over mom’s car! (N.B. unless talking about a time already in the context) b. (Both the speaker and the addressee looking at the scratches) Oh no! Fluffy scratched/#has scratched all over mom’s car!

More Patterns: In (18), the indefinite DP allows everyone to own a different cat, while the definite only means there is one cat. In (19), the present perfect allows everyone to visit Banja Luka at different times, while the simple past means there is a time (e.g. last summer) when everyone visited Banja Luka.

(18) a. Everyone owns a cat. b. Everyone owns the cat.

(19) a. Everyone has visited Banja Luka. b. Everyone visited Banja Luka.

Donkey anaphora sentences can also be constructed with the present perfect (20b).

(20) a. Every boy who owns a cat_i feeds it_i.. b. Every boy who has been_i to a rock concert enjoyed_i it.

An analog of the bathroom sentence (21a) with the present perfect and simple past is (21b).

(21) a. Either there is no bathroom, or (there is one) and *the bathroom* is downstairs. b. Either John has never been to Paris, or (he has and) he *went* there without us.

The so-called **Present Perfect Puzzle (PPP) (Klein 1992)** (22a) can also be straightforwardly solved under this analysis. Since the present perfect in English, as an indefinite, cannot refer to the antecedent provided by the past adverbial, in a way parallel to definite vs. indefinite DPs as in (18b).

(22) a. John {#has arrived/arrived}_i yesterday_i. b. I have a cat_i and {the cat/it/#a cat}_i is grey.

Crosslinguistic Variation: Heim (1991, 2011) argues that DPs in languages like Russian are semantically the same as English indefinites and carry no presuppositions. They get a wider range of felicitous uses due to the absence of competing definites. I will claim the same for the present perfect in **Romance** and **Germanic** languages and argue that we can unify the present perfect in them with the same compositional semantics. In languages with failure of competition, the present perfect does not get any antipresupposition and can replace either the English simple past or the present perfect in all the examples above, and no PPP is observed in its domain. In particular, colloquial French and Italian lack the simple past, and the present perfect behaves as predicted (ambiguous, no PPP). (Also, the present perfect obligatorily requires the perfective in these languages, so the Universal Reading is expressed by the present instead.) German (no PPP) non-[stative/modals] only allows the simple past if the antecedent is explicitly introduced (no bridging uses e.g. *Wer #baute/hat diese Kirche gebaut?*), but the present perfect can replace it (indicating change in progress?). Standard European Spanish and

Catalan split the usage of the simple past and the present perfect by the 24-hour boundary and the two are both ambiguous within its own domain.