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Four Perfects in One

An analysis of the perfect is proposed, which (i) assigns a single meaning (and structure) to all perfect expressions; and (ii) attributes the different interpretations of the perfect to the different contribution of the various aspectual categories embedded in the perfect.

Interpretation-wise, four types of perfects have been recognized (e.g., McCawley 1971, Comrie 1976, Binnick 1991) (cf. (1)). The Universal perfect asserts that the underlying eventuality holds *throughout* an interval, delimited by the reference time and a time prior to it (cf. (2a)). The Experiential perfect places the eventuality *prior to* the reference time (cf. (2b)). The Resultative perfect asserts that the result of the eventuality holds *at* the reference time (cf. (2c)). The Recent Past perfect situates the eventuality *prior to,* and *sufficiently close to*, the reference time (cf. (2d)). These readings obtain with the past, future, and non-finite perfects as well.

Two questions arise: (i) Is there a common representation for the perfect, unifying the four readings?, and (ii) If so, is the distinction between the types of perfect grammatically based? The answers given here are that, yes: (i) All perfect expressions share a single component of meaning localizable to an Asp_1P(rojection), which in turn selects for a viewpoint Asp_2P, and (ii) Different viewpoint aspect specifications of Asp_2 yield the different interpretations of the perfect (see (3)).

In previous accounts, the perfect interpretations are claimed to either arise from a single representation for the perfect in the absence of further formal specification (e.g., Matthews 1989, Parsons 1990, Klein 1994, Musan 2001) or from distinct structures without a uniform overall representation for the perfect (von Stechow 1999, 2001). Some accounts only address the Universal-Experiential ambiguity (Dowty 1979, Richards 1982, Mittwoch 1988, Abusch and Rooth 1990, Vlach 1993, Hitzeman 1998) and cannot be naturally extended to cover the remaining readings of the perfect.

The semantic contribution of PERFECT (as a value of Asp_1) is to introduce an interval, the Perfect Time Span (PTS) - which has the reference time as a final proper subinterval - and to locate an eventuality in this time interval (see (4)). This is an instantiation of the Extended Now (XN) theory (McCoard 1988, Dowty 1989, Iatridou, Anagnostopoulou and Izvorski 2001 (IAI), a.o.). But unlike previous XN accounts, this proposal posits that PERFECT is present in all four types of perfect. Viewpoint aspects embedded in the perfect temporally situate the time of the eventuality, $\tau(e)$, relative to the PTS. Asp_2 can be specified for one of four viewpoint aspects. UNBOUNDED and BOUNDED set up $\tau(e)$ as a superset or a proper subset of the reference time, respectively (cf. (5a,b)). In combination with PERFECT, these yield the Universal (1a), and the Experiential (1b) or Recent Past (1d) reading, respectively. NEUTRAL (term due to Smith 1991) is defined here as a viewpoint aspect that allows reference to the beginning point of an eventuality and part of its internal temporal structure but not to the end point (cf. (5c)). Like UNBOUNDED, NEUTRAL does not assert achievement of the goal with telic events, allows durative adverbials (e.g., *for an hour*), and does not allow completive adverbials (e.g., *in an hour*). Similarly to BOUNDED, NEUTRAL sequences with perfective eventualities (*when P(e)-perfective.past, P'(e)-neutral.past* is interpreted such that $\tau(e) < \tau(e')$), and allows both durative and inclusive interpretation of time intervals (e.g., *b/n 10 and 11am*) (see (7) and (8)). Combined with PERFECT, and given suitable adverbials, NEUTRAL yields the Experiential or the Recent Past reading. Unlike the situation with BOUNDED, however, only the beginning of $\tau(e)$ is asserted to be included in the PTS (see (9)). RESULTATIVE is defined as to assert the culmination of a telic event, but also, crucially, that the result state after culmination of the event holds at a time that includes the endpoint of the reference time (see (5d)). Combined with PERFECT, it yields the Resultative reading. (cf. (10) for the interpretive effect of the viewpoint aspects and their morphological realization in English.)

The present proposal can naturally account for the cross-linguistic availability of the four perfect readings through restrictions on the combinatorial properties of Asp_1 and Asp_2. Portuguese does not have a Resultative and an Experiential reading (Giorgi and Pianesi 1998, Schmitt 2001) whereas Greek does not have the Universal one (IAI). This follows, if in Portuguese Asp_1 necessarily selects, and in Greek it cannot select, an Asp_2 with the specification [UNBOUNDED].

The proposal also allows for a natural account of the incompatibility of the present perfect, but not of the other perfects, with adverbials such as *on Monday* (see (11)). Given the meaning of the PERFECT (see (4)), and of the tenses (see (12)), only the past enters a competition with the perfect in case $\tau(e)$ is included in a past Monday. As the PAST has a more restricted meaning, it is chosen over the weaker PERFECT under PRESENT.

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(1.) a. Since 2000, Alexandra has lived in LA. b. Lola has seen "The Princess and the Warrior."
c. Rebecca has lost her glasses. d. The Lakers have won!

(2.) a. $\exists e\,[(2000, Now) \subseteq \tau(e)$ & *Alexandra-live-in-LA* $(e)]$ $\tau(e)$ is the time of the eventuality
b. $\exists e\,[\tau(e) <$ *Now* & *Lola-see-P&W* $(e)]$
c. $\exists e \exists s\,[$ *Now* $\in \tau(s)$ & Result(s,e) & *Rebecca-lose-her-glasses* $(e)]$
d. $\exists e\,[\tau(e) <$ *Now* & (end($\tau(e)$), *Now*) is sufficiently short & *The-Lakers-win* $(e)]$

(3.) $[_{TP}$ T $[_{AspP1}$ **Asp$_1$**-PERFECT $[_{AspP2}$ **Asp$_2$**-{(UN)BOUNDED / NEUTRAL / RESULTATIVE} $[_{vP}$ Aktionsart]]]]

(4.) $[\![\text{PERFECT}]\!] = \lambda p \lambda i\, \exists i'\,[\text{PTS}(i', i)$ & $p(i')]$ PTS(i', i) iff i is a final proper subinterval of i'

(5.) a. $[\![\text{UNBOUNDED}]\!] = \lambda P \lambda i\, \exists e\,[\, i \subseteq \tau(e)$ & $P(e)\,]$
b. $[\![\text{BOUNDED}]\!] = \lambda P \lambda i\, \exists e\,[\, \tau(e) \subset i$ & $P(e)\,]$
c. $[\![\text{NEUTRAL}]\!] = \lambda P \lambda i\, \exists e\,[\, i \not\sqsubset \tau(e)$ & $P(e)\,]$ $i \not\sqsubset i'$ iff $i \cap i' \neq \emptyset$ & $\exists t\,[\, t \in i$ & $t \notin i'$ & $\forall t'\,[t' \in i' \rightarrow t < t']]$
d. $[\![\text{RESULTATIVE}]\!] = \lambda P \lambda i\, \exists e \exists s\,[$ Result(s,e) & $i \sqsubset\!\!\!\cdot\, \tau(s)$ & $P(e)\,]$
Result(s,e) iff e is telic & s is the result state of e; $i \sqsubset\!\!\!\cdot\, i'$ iff $i \cap i' \neq \emptyset$ & $\exists t \exists t'[\, t \in i$ & $t \notin i'$ & $t' \in i'$ & $t' \notin i$ & $t < t']$

(6.) $[\![vP]\!] = \lambda e\, P(e)$

(7.) a. stroix b. strojax c. postroix (Bulgarian)
build-**NEUT**.1sg.past build-**UNBOUNDED**.1sg.past build-**BOUNDED**.1sg.past
'I was engaged in building…' 'I was building…' 'I built…'

(8.) a. Az stroix pjasâ_na kula {* za dva _asa. / dva _asa.} (Bulgarian)
I build-NEUT.1sg.past sand castle in two hours two hours
'I was building a sand castle {*in two hours/for two hours}.' (no sand castle built)
b. Az stroix pjasâ_na kula me_du 10 i 11.
I build-NEUT.1sg.past sand castle between 10 and 11
'I was building a sand castle (for the entire interval) between 10 and 11.' (no sand castle built)
'I was engaged in castle-building for some time between 10 and 11.' (no sand castle built)

(9.) a. I have been sick (lately/previously).
b. I have been working very hard (these days/in the past).
c. I have been losing my glasses (recently).

(10.)

Perfect Type	**Semantics**	**Morphology**	**Aktionsart**
Universal	[UNBOUNDED]	non-progressive	state
		progressive	activity, telic
Experiential	[BOUNDED]	non-progressive	any
	[NEUTRAL]	non-progressive	state
		progressive	activity, telic
Resultative	[RESULTATIVE]	non-progressive	telic
Recent Past	[BOUNDED]	non-progressive	any
	[NEUTRAL]	non-progressive	state
		progressive	activity, telic

(11.) a. #She has read the book on Monday.
b. I met her yesterday and she had read the book on Monday.
c. She will have read the book on Monday.

(12.) a. $[\![\text{PAST}]\!] = \lambda p \lambda i\, \exists i'[i' < i$ & $p(i')]$ b. $[\![\text{PRESENT}]\!] = \lambda p \lambda i\, \exists i'[i' = i$ & $p(i)]$ c. $[\![\text{FUTURE}]\!] = \lambda p \lambda i\, \exists i'[i' > i$ & $p(i')]$