Strengthening and Weakening in Semantic Change

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Outline

From a lexical to a functional category

Characterizing the change

Reanalysis via default inference

Intentions as structuring future possibilities

Be going to

- Grammaticalization of a lexical item into a functional category
- As a functional category it is non-compositional and functions as a futurate
- (1) a. NP_i be going [CP to PRO_i VP] control into purpose clause; NP thematic argument of both predicates
 - b. NP_i be going [?? to t_i VP] raising; NP is only a thematic argument of lower predicate and may be non-thematic
- (2) He is going to die.
- (3) a. There is going to be a riot.
 - b. It is going to rain.

Tranparent vs. futurate uses

- (4) A: What are you doing?B: I am going to get coffee.
- (5) A: What are you doing?B: I am on my way to getting coffee.

VS.

- (6) A: What have you decided?B: I am going to get that outfit.
- (7) A: What have you decided?B: # I am on my way to getting that outfit.

Transparent vs. futurate uses

- (8) A: Where is he?B: He went to get some coffee.
- (9) A: What did he do then? B: He went to look for his lost ring.
- (10) He was going to get some coffee when we ran into each other.
- (11) I was going to get that outfit when I changed my mind.
- (12) I was going to get that outfit but then I changed my mind.

Before 17th c.: Movement sense

(13) How now Michael whether are you going?My maister hath new supt,And I am going to prepare his chamber.

The Lamentable and Trve Tragedie of M. ARDEN of Feversham in Kent (1592).

An early example? (Traugott & Dasher 2002: 84)

- 1. Therfore while thys onhappy sowle by the victoryse pompys of her enmyes was goyng to be broughte into helle (*Monk of Evesham*, 1482)
- 2. But here *going to* is arguably used as a motion verb [the Latin text has *agitur in gehennam* 'is being driven into hell']. "The victoryse pompys of her enmyes" is a procession of the seven deadly sins leading sinners into hell, described in the text as "a cursyd companye of wyckyd spyrytys and a myghty ledyng with hem anone as they hopyde to helle a soule of a woman late departyd from her body." (p. 42)

going to be brought to hell



The grammaticalization of going to

- ► Two steps (Hopper & Traugott 2003, Hilpert 2008).
- ▶ In the early 17th c. it loses its motion component and becomes a control predicate meaning something like 'intend'.
- ▶ In the mid 19th c. it becomes a raising predicate, freely allowing non-thematic subjects and non-intentional complements.

going to ca. 1600-1850

- ► The complement of *going to* must be intentional.
 - ▶ *he is going to die/fail/fall, *it is going to happen/rain
- ▶ The intention is not necessarily that of the main clause subject.
 - ▶ The controllee does not have to be the volitional agent.
 - 1. You see that My Magazine is going to be taken from Me. (1642 Charles I Sp. Wks. 1662 I. 401)
 - 2. he tells me that Paul's is now going to be repaired in good earnest (1663 Pepys' *Diary*)
 - 3. Sir John Denham's poems are going to be all printed together; (1667 Pepys' *Diary*)
 - 4. They saw him in Bed, going to be dressd by the most skilful Surgeons,
 (Aphra Behn, *The Fair Jilt*)
- ▶ At this point, *going to* seems to be analogous to modern *is on its* way to.

going to ca. 1600-1850

- (14)He is fumbling with his purse-strings, as a school-boy with his points when he is going to be whipped, till the master weary with long stay forgives him. (1628 Earle *Microcosmography*)
- (15)and all this they did of purpose to affright and distract me, and to make me believe I was going to be racked again, to make me confess an untruth; and still thus they continued every day of five days to Christmas. (1632 William Lithgow Travels & Voyages [mod. spelling ed. 1814], cited by Garrett 2012)

An intermediate stage?

- ▶ In the earliest examples of non-motion *going to*, the intender is also the subject.
 - (16) Hort.: I must pick it out of him by wit.

 Flo.: ... what mary-bone [=marrowbone] of witte is your iudgement going to pick now?

 (John Day, *Humour out of breath*, 1608)
- At this point, going to seems to be analogous to modern is getting ready to.

Final stage

- ▶ By around 1850 *going to* is a raising predicate, like *seems*. At this point we get non-thematic subjects: *there is going to be..., it is going to rain, the chickens are going to come home to roost*, etc.
- Remains biclausal. At no stage is it an "auxiliary". Even the reduced form *gonna* does not have any of the auxiliary properties.

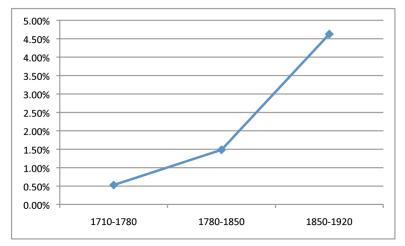
There is going to be

- ► Two 18th c. examples, both in drama
 - (17) There is going to be such a calm among us (Odingsells, Gabriel, *The bath unmask'd* 1725)
- ▶ there is going to be becomes common in the 19th c.

it is going to rain

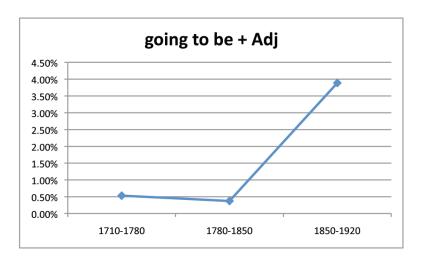
(18) I surmeese it is going to rain? Scott, Walter, St. Ronan's Well (1823)

going to + nonvolitional live, die, happen, fall, rain, last, cry

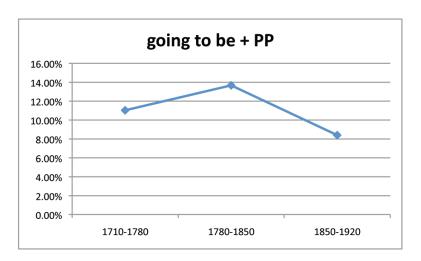


Source: CLMET_3 corpus (March 2013), about 34 million words

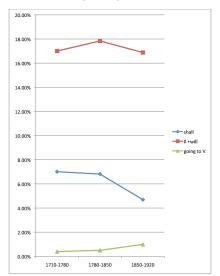
going to + Adj



going to + passive



shall, (wi)ll, going to + V



Did fixing to, finna arise independently of going to?

Probably not, because:

- 1. *going to* seems to have been present in all dialects that later developed *fixing to*.
- The weakening *going to* to *gonna* is explicable by otherwise motivated processes of phonetic reduction, but the weakening of *fixing to* to *finna* is not. It must be analogical to *going to* → *gonna*.

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Understanding the shift

- ► The grammaticalization of *be going to* is an instance of a well attested diachronic pattern.
- ▶ How are the meanings diachronically related?
- ▶ What is the change an instance of?
 - Pragmatic strengthening?
 - Semantic weakening?
 - ▶ Both?
- Although the path of change, like other instances of grammaticalization, is unidirectional, the change is not obviously generalizing, i.e., an instance of semantic weakening.

Is generalization even plausible?

Bybee and Pagliuca (1985) suggest that generalization is an inherent characterization of grammaticalization sense-shifts. ... With the Go-future it seems to me that we can no longer talk about generalization in the usual sense. Neither futurity (or future intention) nor physical motion is an instance of the other; nor is it at all evident that meaning is "lost" in the transfer from one of these senses to the other.

Sweetser (1988:390)

Pragmatic strengthening view

- ► The change is usually seen as an instance of pragmatic strengthening
- ▶ But what is involved, supposing that the original meaning is 'x moves in order to do Y'?
 - ► Hopper and Traugott (1993): the change is driven by the pragmatic inference 'x does Y in the near future'
 - ▶ Traugott and Dasher (2002): bleaching of the semantics of *go*; pragmatic strengthening, whereby the generalized invited inference 'x does Y in the near future' becomes part of the meaning; subjectification; and reanalysis of *be going to* as a functional category with a temporal semantics.
 - Eckardt (2006): compositionally-driven reanalysis via a default inference

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Eckardt (2006): From movement to futurity

Compositional interpretation at stage of full transparency:

- (19) Orlando was going to fetch water.
- (20) $Past_R(Prog(Orlando go to fetch water))$
- (21) $\exists e \exists e' [R \subset e \land R \prec \mathsf{Now} \land \mathsf{Go}(e, \mathsf{Orl}) \land \mathsf{Prepare}(e, e') \land \mathsf{Fetch\text{-}Water}(e', \mathsf{Orl})]$
 - ▶ $R \subset e$ due to the progressive
 - $ightharpoonup R \prec \text{Now due to past tense}$
 - ightharpoonup Go(e, Orl) main clause predication
 - ▶ Fetch-Water(e', Orl) purpose clause predication
 - ▶ Prepare (e, e') semantic relation between main clause and purpose clause

Eckardt (2006): From movement to futurity

Compositional interpretation is the same regardless of the lexical content of main and purpose clauses:

- (22) Orlando was running to fetch water.
- (23) $Past_R(Prog(Orlando run to fetch water))$
- (24) $\exists e \exists e' [R \subset e \land R \prec \mathsf{Now} \land \mathsf{Run}(e, \mathsf{Orl}) \land \mathsf{Prepare}(e, e') \land \mathsf{Fetch-Water}(e', \mathsf{Orl})]$
 - $ightharpoonup R \subset e$ due to the progressive
 - $ightharpoonup R \prec \text{Now due to past tense}$
 - ightharpoonup Run(e, Orl) main clause predication
 - ▶ Fetch-Water(e', Orl) purpose clause predication
 - ▶ Prepare (e, e') semantic relation between main clause and purpose clause

Eckardt (2006): Default inference

- ► The literal content of (25) allows the default inference (II) in (26).
- ► The inference is that the event the going is in preparation for, i.e. the fetching of water, is "imminent, assuming some world knowledge about Go and Prepare." (p. 118)
- (25) Orlando was going to fetch water.
- $(26) \qquad \exists e'[\mathsf{Imminent}(R,e') \land R \prec e' \land \mathsf{Fetch\text{-}Water}(e',\mathsf{Orl})] \qquad (II)$

Eckardt (2006): Steps in the reanalysis

- ▶ In certain kinds of contexts an utterance of (25) is mutually understood by the speaker and listeners as used "not only to give rise to certain implications but as a conventional way to express a certain kind of proposition." (p. 119)
- ► The imminence inference (II) "is not only an implication of [(25)], but a conventional implicature." (p. 119)
- Eventually, the conventional implicature is turned into the sole at issue content.
- At that point, the content of the main clause predication has to be reanalyzed as contributing nothing to the content of the sentence radical, but instead becoming, together with the progressive, a prospective aspectual operator.

Eckardt (2006): Steps in the reanalysis

- ► The sentence maps to the logical form in (28) instead of the logical form in (27).
- ▶ (29) is the new meaning from the 17c. on.
- (27) $Tns_R(Prog(Orlando go to fetch water))$
- (28) $Tns_R(Prosp(Orlando fetch water))$
- $(29) \qquad \exists e'[\mathsf{Imminent}(R, e') \land R \prec e' \land \mathsf{Fetch\text{-}Water}(e', \mathsf{Orl})]$
 - ▶ Imminent(R, e') due to prospective aspect
 - ▶ $R \prec e'$ due to prospective aspect
 - ▶ Fetch-Water(e', Orl) sentence radical

Eckardt (2006): The essentials

- ▶ A crucial feature of the analysis is the role of the progressive in giving the event internal perspective: the reference time is between the onset of the preparatory event and the intended event.
- ▶ (II) is a potential default inference for (30) just as it is for (31).
- ► Frequentistic explanation for why cases like (31) get reanalyzed but not those like (30)?
- (30) Orlando was running to fetch water.
- (31) Orlando was going to fetch water.

Imminence?

- ▶ Although imminence is often an implication of the *be going to* future, it does not seem to be part of the meaning.
 - (32) The universe is going to end in a few trillion years.
 - (33) You are going to regret it eventually.
 - (34) The rock formation is going to fall apart sooner or later.
 - (35) We are poor and are going to be poor forever.
- ▶ It is an open question if it was encoded as part of the meaning at the beginning of stage 2.
- ▶ If it was, then one would have to account for its disappearance in stage 3.

Imminence?

- Under what contextual assumptions would an implication of imminence arise?
- ▶ If *e* is already under way, then if you assume that *e* is the kind of even that doesn't last too long and that the temporal distance between *e* and *e'* is short.
- ▶ The temporal distance between e and e' is short if there need not be many or long events between e and e' which also stand in the Prepare relation with e'.
- ▶ For (II) to become conventionalized there have to be contexts of use of 'a be going to do X' in which the event description X is not presupposed to require little else to be initiated other than the movement of a from one place to another *independent of the utterance*. (II) has to arise as an inferred (by the hearer) intended implication (by the speaker).

Eckardt (2006): The missing intentions

- ▶ Intention must be hiding in the semantics of Prepare, or else in the semantics of Go, but it plays no role in the analysis of the change.
- ► The two step feature of the change is not captured.
- What does the existential quantification over the event corresponding to the purpose clause amount to? Does this event occur and if so in what kind of possibilities?

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Basic ideas

- ▶ Bring out the intentionality expressed by the purpose clause
- Notion of actionable intention, also relevant in the interpretation of imperatives and of commissive and directive predicates (Condoravdi & Lauer 2009, 2011, 2012)
- Link main clause and purpose clause via a 'necessary means of' relation
- Postulates linking actionable intention and action
- Action choices and the structure of possibilities
- ► Characterize the change as primarily semantic weakening

Intentional interpretation of purpose clause

Compositional interpretation at stage of full transparency:

- (36) Orlando was going to fetch water.
- (37) $Past_R(Prog(Orlando go to fetch water))$
- $\begin{array}{ll} \exists e[R \subset e \land R \prec \mathsf{Now} \land \mathsf{Go}(e,\mathsf{Orl}) \land \\ \mathsf{Intend}(\mathsf{Orl},R,\lambda w.\exists e'[occ(e',w) \land \mathsf{Fetch\text{-}Water}(e',\mathsf{Orl})]) \land \\ \mathsf{Nec\text{-}Means}(\lambda m.\mathsf{Go}(m,\mathsf{Orl}),\lambda g.\mathsf{Fetch\text{-}Water}(g,\mathsf{Orl}))] \end{array}$
 - ▶ $R \subset e$ due to the progressive
 - $ightharpoonup R \prec \text{Now due to past tense}$
 - Go(e, Orl) main clause predication

Intentional interpretation of purpose clause

- (39) $\exists e[R \subset e \land R \prec \mathsf{Now} \land \mathsf{Go}(e,\mathsf{Orl}) \land \mathsf{Intend}(\mathsf{Orl}, R, \lambda w. \exists e'[occ(e', w) \land \mathsf{Fetch\text{-}Water}(e',\mathsf{Orl})]) \land \mathsf{Nec\text{-}Means}(\lambda m.\mathsf{Go}(m,\mathsf{Orl}), \lambda g.\mathsf{Fetch\text{-}Water}(g,\mathsf{Orl}))]$
 - ▶ Intend(Orl, R, λw . $\exists e'[occ(e', w) \land \text{Fetch-Water}(e', \text{Orl})])$ (at time R Orlando has the intention to fetch water) semantic relation between main clause and purpose clause
 - Nec-Means(λm .Go(m, Orl), λg .Fetch-Water(g, Orl))] (Orlando's change of location is necessary to achieve his fetching water) semantic relation between main clause and purpose clause

Intentions and action choices

- Suppose an agent A believes himself to be in a world w at a given time t
- ► A's intentions at t determine the agent's behavior
- ▶ If A has the choice between w₁ and w₂, as continuations of w at t differing in what action, if any, A performs, and w₂ is 'better' relative to A's intentions, then A will choose w₂.

Intentions and action choices

Linking intentions to action choices, in the conceptualization of Belnap (1991:791)

As for choice, we idealize by postulating that at each moment w_0 , there is defined for each agent A a (possibly one-member) choice set, that is, a partition of all of the histories passing through w_0 . A member of a choice set is called a possible choice, so that a possible choice is a set of histories.

Action choices made by an agent at w_0 determine the development of w_0 by excluding certain cells of the partition.

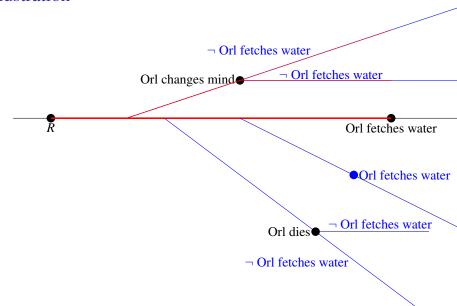
Historical alternatives

- ▶ Following Thomason's (1984) world-time model, let us fix for every time point t, an equivalence relation \simeq_t on W such that whenever $w \simeq_t w'$ and $t' \prec t$, $w \simeq_{t'} w'$.
- ► The basic idea of the world-time model is to have worlds be complete histories through time and bundle together worlds with an identical past and a distinct future.
 - ▶ Worlds may *historically determine* the same set of facts up to a given time *t*.
 - Any such two worlds are historical alternatives through t and may differ only in what is future to t.
- ▶ We can generalize to intervals by identifying \simeq_t , for any interval t, with $\simeq_{lub(t)}$, where lub(t) is the least upper bound of t.
- ▶ Settledness: Sett_t(ϕ) is true at w iff ϕ is true at all $w' \simeq_t w$.

Intentions and beliefs

- ► The intentions of an agent A in a world w at time t structure his doxastic alternatives $Dox_t(A, w)$ in the following way:
 - Supposing p in an intention of A in w at t, then for any $w_1 \in \mathsf{Dox}_t(A, w)$, the set $\{w_1\}[t] = \{w_2 \mid w_1 \simeq_t w_2\}$ is partitioned into those worlds A makes the right action choices and eventually realizes p, call it O, those worlds in which A is thwarted in his attempt to realize p, those worlds in which A changes his mind about realizing p, etc.
 - ► Take an ordering \leq_{w_1} on $\{w_1\}[t]$ to be the 'normal course of events' in w_1 .
 - ▶ Then the worlds in *O* will be the maximal elements relative to \leq_{w_1} .

Illustration



Implications

Take w to be any world compatible with the way the speaker of an utterance of (40) characterizes the actual world based on the semantic content of the utterance, which on our analysis is as in (41).

- (40) Orlando was going to fetch water.
- $(41) \qquad \exists e[R \subset e \land R \prec \mathsf{Now} \land \mathsf{Go}(e,\mathsf{Orl}) \land \\ \mathsf{Intend}(\mathsf{Orl},R,\lambda w.\exists e'[occ(e',w) \land \mathsf{Fetch\text{-}Water}(e',\mathsf{Orl})]) \land \\ \mathsf{Nec\text{-}Means}(\lambda m.\mathsf{Go}(m,\mathsf{Orl}),\lambda g.\mathsf{Fetch\text{-}Water}(g,\mathsf{Orl}))]$
 - ▶ Orlando's attempt to realize his intention of fetching water is already underway at the reference time *R* in *w*.
 - ▶ At the reference time *R* in *w*, Orlando believed that he would eventually fetch water if nothing unexpected happened.

Pragmatic inference

- ▶ **Realism:** $w \in Dox_R(Orl, w)$.
- ▶ Under the assumption of Realism, the speaker can be taken to characterize the actual world as being such that at the reference time, Orlando would be eventually fetching water unless something unexpected was to happen.

Side note on Realism

▶ Realism is behind the explanation of the apparent hole-behavior of attitude verbs with respect to presupposition projection by Karttunen (1973) and Heim (1992), who analyze them as filters.

"in situations where nothing has been said about [an agent's] beliefs, one tends to think that, if the presuppositions of [the utterance] are satisfied, they are satisfied by virtue of the speaker's tacit assumption that [the agent] shares his beliefs." Karttunen (1973:6)

Side note on Realism

 Realism is behind the explanation of the apparent hole-behavior of attitude verbs with respect to presupposition projection by Karttunen (1973) and Heim (1992), who analyze them as filters.

"What, however, if it isn't yet presupposed that John believes it was raining? Then something must be accommodated. What will this be? Our analysis as it stands, it would seem, leads us to expect the minimal accommodation required to make the sentence interpretable. This would be accommodation of the assumption that John believes it to have been raining. But in point of fact, we spontaneously accommodate something else, namely that it had in fact been raining."

Heim (1992:207)

Combined implications

With Realism, we have as an implication of an utterance of (40) that, according to the speaker's characterization, at the reference time the actual world was such that Orlando would eventually be fetching water (if nothing unexpected happened) and that a necessary means for Orlando's fetching water was already under way.

Change: Step 1

- ► The meaning of *go* in construction with a purpose clause gets generalized to any contextually suitable event.
- Change of location is a general enough precondition that it can be taken to be a necessary means for realizing a wide range of intentions.
- ► Some evidence for this stage from the use of *went to do X* with the meaning of 'was on his way to doing X' (see Eckardt 2006).
- (42) $\exists E \exists e [R \subset e \land R \prec \mathsf{Now} \land E(e,\mathsf{Orl}) \land \mathsf{Intend}(\mathsf{Orl}, R, \lambda w. \exists e' [occ(e', w) \land \mathsf{Fetch-Water}(e',\mathsf{Orl})]) \land \mathsf{Nec-Means}(\lambda m. E(m,\mathsf{Orl}), \lambda g.\mathsf{Fetch-Water}(g,\mathsf{Orl}))]$

Change: Step 2

- ► The progressive plus generalized *go* are reanalyzed into a temporal operator shifting the reference time and asserting settledness.
- ▶ Use of *go* with purpose clause in participial adjunct clauses characterizing the reference time may contribute to the reanalysis (see Eckardt 2006, Garrett 2012).
- $(43) \quad \exists E \, \exists R' [R' \subseteq R \land \mathsf{Sett}_{R'}(\lambda w. \exists e[occ(e, w) \land E(e, \mathsf{Orl})]) \land \\ \mathsf{Intend}(\mathsf{Orl}, R, \lambda w. \exists e'[occ(e', w) \land \mathsf{Fetch\text{-}Water}(e', \mathsf{Orl})]) \land \\ \mathsf{Nec\text{-}Means}(\lambda m. E(m, \mathsf{Orl}), \lambda g. \mathsf{Fetch\text{-}Water}(g, \mathsf{Orl}))]$

Change: Step 3

- ► The infinitival clause is no purpose clause anymore.
- ▶ Instead of intention, we get the implication based on Realism becoming the conventional meaning.
- ▶ 'Necessary means' gets generalized to 'necessary precondition'.
 - ▶ A necessary precondition for *a is going to fetch water* can merely be *a*'s decision to fetch water; for *it's going to rain* it can be some particular metereological configurations; for *the universe is going to fold onto itself* it can be some physical process.
- ▶ The futurate meaning of *be going to* involves necessity relative to historical alternatives and an ordering determined by the normal course of events.

$$\begin{array}{ll} (44) & \exists p \exists R' [R' \subseteq R \wedge \mathsf{Sett}_{R'}(p) \wedge \\ & \Box_{\simeq_{R'}, \leq} (\lambda w. \exists e' [occ(e', w) \wedge \mathsf{Fetch\text{-}Water}(e', \mathsf{Orl})]) \\ & \mathsf{precond}(p, \lambda g. \mathsf{Fetch\text{-}Water}(g, \mathsf{Orl}))] \end{array}$$

Summary: the three meanings

Fully transparent

 $\begin{array}{ll} (45) & \exists e[R \subset e \land R \prec \mathsf{Now} \land \mathsf{Go}(e,\mathsf{Orl}) \land \\ & \mathsf{Intend}(\mathsf{Orl}, R, \lambda w. \exists e'[occ(e',w) \land \mathsf{Fetch\text{-}Water}(e',\mathsf{Orl})]) \land \\ & \mathsf{Nec\text{-}Means}(\lambda m.\mathsf{Go}(m,\mathsf{Orl}), \lambda g.\mathsf{Fetch\text{-}Water}(g,\mathsf{Orl}))] \end{array}$

Semi-transparent

(46)
$$\exists E \,\exists R'[R' \subseteq R \land \mathsf{Sett}_{R'}(\lambda w. \exists e[occ(e, w) \land E(e, \mathsf{Orl})]) \land \\ \mathsf{Intend}(\mathsf{Orl}, R, \lambda w. \exists e'[occ(e', w) \land \mathsf{Fetch-Water}(e', \mathsf{Orl})]) \land \\ \mathsf{Nec-Means}(\lambda m. E(m, \mathsf{Orl}), \lambda g. \mathsf{Fetch-Water}(g, \mathsf{Orl}))]$$

In general, the first argument of Intend may be a contextually salient agent distinct from the referent of the subject.

Futurate

$$(47) \qquad \exists p \exists R' [R' \subseteq R \land R \prec \mathsf{Now} \land \mathsf{Sett}_{R'}(p) \land \\ \qquad \Box_{\simeq_{R'}, \leq} (\lambda w. \exists e' [occ(e', w) \land \mathsf{Fetch\text{-}Water}(e', \mathsf{Orl})]) \\ \mathsf{precond}(p, \lambda g. \mathsf{Fetch\text{-}Water}(g, \mathsf{Orl}))]$$

Conclusion

- ▶ Both Eckardt's analysis and this talk provide some plausible answers to what Deo (2013) would characterize as the 'constraints problem' for the grammaticalization of *be going to*.
- ▶ On the analysis offered here the grammaticalization of *be going to* involves primarily semantic weakening. The relevant pragmatic inference, based on the Realism assumption, is generally applicable, not just tied to this particular phenomenon.
- ► The analysis has good prospects for other grammaticalization paths, like those of commissive and volition predicates acquiring futurate uses.
- Can we go beyond post-hoc analyses?