Restitutive *again* without lexical decomposition: a Function Composition approach

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**The issue.** It is well known (Dowty 1979, von Stechow 1996, Fabricius-Hansen 2001, Beck and Johnson 2004 a.m.o.) that the adverb *again* (and its correlates in some other languages, such as German *wieder*) can prompt ambiguity between repetitive and restitutive readings of sentences, as illustrated in (1).

1. John opened the door again. = a. John opened the door, which he had done before. [repetitive]  
   or b. John opened the door, which had been open before. [restitutive]

(2) The temperature rose and then it fell again. = a. it had previously fallen [repetitive]  
   (Fabricius-Hansen 2001) or b. it had previously been low [restitutive]

It is easy to define a semantics for *again* which captures the repetitive meaning (after von Stechow 1996, slightly abbreviated; *i* is a variable/type over eventualities, i.e. both events (type *v*) and states (type *s*)):  

(3) a. [ ](again) = λP([i] λi P(i), iff ∃i′ P(i′) and i′ temporally precedes i; otherwise undefined.  
   b. [[[John open the door] again]] = λe open(door)(John)(e)  
   presupposition: ∃e′ open(door)(John)(e′) and e′ temporally precedes e

However, the restitutive meaning is more challenging; e.g. in (2b), there was no previous falling event, so on the face of it, the presupposition of *again* in (3a) will not be met. Two main approaches exist in the literature to capture restitutative readings. On a lexical ambiguity view such as in Fabricius-Hansen 2001, *again* has the denotation in (3a), but also a denotation which expresses counterdirectionality, with a presupposition that there was a previous ‘opposite’ event to that described by the VP; in (2b), the previous rising of the temperature. The other approach (von Stechow 1996) holds that *again* only has the denotation in (3a), but that verbs can be decomposed – in the syntax – into an eventive and stative component; the restitutive reading results from *again* taking scope over the stative component only.

(4) a. John [CAUSE [[the door open] again]] (CAUSE + open spelled out as the verb open)  
   b. [BECOME [[LOWER the temperature] again]] (BECOME + LOWER spelled out as *fall*)

**Problems for both accounts.** Both of these accounts face some problems. The counterdirectional account postulates an extra lexical ambiguity, and would in some cases give rise to unattested readings, as Beck & Gergel (2015) note; one would expect (5) to be able to mean ‘I wrote back to him’. (This was an attested reading in earlier stages of English, as Beck & Gergel note, suggesting that the counterdirectional reading of *again* was at one stage available; but it is not available in Modern English.)

5. He wrote to me and then I wrote to him again.  
   (# if I have never previously written to him)

In addition, the counterdirectional account cannot, except by stipulation, capture the fact that the ambiguity depends on the structural position of *again*, as discussed by von Stechow (1996) for German *wieder* and Beck & Johnson (2004) for English (6a). By contrast, the structural approach can capture this (6b): a low structural position for *again* (right-adjointed in (1)) is ambiguous in whether it takes scope above CAUSE (i.e. the eventive component) or not, leading to ambiguous meaning, while the left-adjointed position is unambiguously above CAUSE (see von Stechow 1996 for full details).

6. a. John again opened the door. (only repetitive)  
   b. [again [John [CAUSE [the door open]]]]

However, the structural account also faces the problem that there is very little independent morphological or syntactic evidence for the kind of lexical decomposition it proposes, as acknowledged by von Stechow (1996). For anticausative verbs like *open*, which moreover may plausibly have an underlying adjectival root *open*, such decomposition may be plausible; but it is much less clear that e.g. a verb like *fix* should be (syntactically) decomposed in the way that would be required (7b).

(7) a. John broke the {computer/figurine} and then he fixed it again. (restitutive reading available)  
   b. John CAUSE [the {computer/figurine} NOT-BROKEN again] (putative decomposition)

The relevant stative component of *fix*, which *again* takes semantic scope over in (7a), appears to be something like NOT-BROKEN. However, there is little independent evidence for the existence of an abstract *syntactic* formative NOT-BROKEN, or that the verb *fix* syntactically decomposes into a component that has such a meaning; *fix* has no anticausative/inchoative variant like *open* (*The computer fixed*), which might motivate structure of the type in (7b), and even the stative passive *the car is fixed* implies an event of fixing, and cannot simply mean that the car is not broken. We know that ‘target states’ of such verbs must be accessible at least in the semantics, because certain adverbials (e.g. *The judge jailed John for five years*) can modify them (Dowty 1979, Piñon 1999, Kratzer 2000 a.m.o.); but what is less clear is whether *syntactic* decomposition of the type in (7b) is needed to achieve this.

**Proposal.** I propose an analysis which (i) retains a univocal semantics for *again* (3a); (ii) captures the structural facts illustrated in (1)/(6); but (iii) does not require the postulation of (otherwise unmotivated)
lexical decomposition in the syntax. The proposal builds on Kratzer (2000)’s analysis of stative passives, and can be seen as a development of the approach considered but rejected in the appendix to von Stechow 1996. I propose, following Kratzer, that verbs with ‘target states’ (Parsons 1990) are relations between those target states, individuals (the internal argument), and events, e.g. (8a) for fix. The key innovation I propose is that verbs do not introduce a causal connection between the event and the target state. A functional head, v\text{cause}, does this (cf. Alexiadou et al. 2006, Pylkkänen 2008, and Kratzer 2005’s similar (but not identical) proposal for causatives). The external argument is added above this structure by Voice, not shown here. The verb \textit{fall}, not treated in detail here, would have a similar denotation (\lambda x\lambda e xfix(x) & lower(x)(s)), but as an unaccusative would lack an external argument.

\begin{enumerate}
\item \([\text{fix}] = \lambda x\lambda e xfix(x) & \neg\text{broken}(x)(s)\]
\item \([\text{fix the car}] = \lambda e xfix(x) & \neg\text{broken}(\text{car})(s)\]
\end{enumerate}

(8) a. \([\text{fix}] = \lambda x\lambda e xfix(x) & \neg\text{broken}(x)(s)\]
    b. \([\text{fix the car}] = \lambda e xfix(x) & \neg\text{broken}(\text{car})(s)\]

We therefore still have a degree of decomposition in the syntax, but one which is general to all ‘target-state’ verbs, namely factoring out the causal relation from the verb proper. However, the verbal root still contains an eventive component from the start (capturing relevant facts about stative passives, Kratzer 2000); and importantly, the target state of a verb is only represented in the semantics, not in the syntax (that is, we do not have to postulate a large number of otherwise unmodified syntactic formats). This factoring out of the causal relation permits an analysis of \textit{again} in which it accesses the target state of a verb before v\text{cause} is introduced, thereby capturing the restitutive reading. The repetitive reading of \textit{again} is handled in a similar way to other authors’ treatments, assuming the denotation in (3). I propose that the restitutive reading is the result of that same denotation for \textit{again} combining with phrases like (8b) via Function Composition ‘\o’, defined in (10), see e.g. Jacobson 2014. (‘\o’ = ‘temporally precedes’.)

(10) If \(F\) is of type (\(\sigma, \tau\)), and \(G\) is of type (\(\tau, \rho\)), then \(F \circ G = \lambda x. G(F(x))\).

(11) \([\text{fix the car}]_{(\sigma, \tau)} \circ [\text{again}]_{(\tau, \pi)} = \lambda e [\text{again}][[\text{fix the car}](e)] \) [types \(v, s\) sorts of type \(i\)]
    = \(\lambda e [\text{again}][[\lambda e s\text{fix}(e) & \neg\text{broken}(\text{car})(s)](e)]\)
    = \(\lambda e [\text{again}][\lambda s\text{fix}(e) & \neg\text{broken}(\text{car})(s)]\)
    = \(\lambda e s\text{fix}(e) & \neg\text{broken}(\text{car})(s)\), iff \(s^\prime \text{fix}(e) & \neg\text{broken}(\text{car})(s^\prime) & s^\prime < s\), else undefined.

In (11), again only contributes the presupposition that there was a previous state \(s^\prime\) in which the car was not broken (i.e. the target state of \(\text{fix the car}\) held). It does not presuppose that there was a previous event of fixing. (It only presupposes, harmlessly, that the event \(e\) referred to in the \textit{main} assertion is a fixing event.) This is what is required for the restitutive reading. The structural facts (1)/(6) are captured because \textit{again} must be merged low enough to function-compose with \textit{fix the car}, before v\text{cause} is merged.

**Prospects.** This proposal does not challenge analyses of constructions where there is independent evidence for syntactic decomposition, nor the possibility that \textit{again} can modify constituents which are \textit{visibly} separate in the syntax and which plausibly denote predicates of states, as in e.g. resultatives (\textit{John hammered [the metal flat] again}) or goal-PP constructions (\textit{John walked to the bar again} = John had previously been at the bar; Beck 2005). However, if restitutive readings of \textit{again} can in some cases be captured by Function Composition without lexical decomposition, this potentially casts doubt on at least one domain in which lexical decomposition has been proposed, namely double object verbs. Beck & Johnson 2004 note that double object verbs often allow for restitutive readings with \textit{again}, and argue on this basis that \textit{again} must be modifying a constituent headed by a silent HAVE.

(12) a. Mary gave John the map again.
    b. Mary give [[John HAVE the map] again]

But suppose that \textit{give} has a target state in the \textit{semantics} indicating a possessor relation between an indirect and direct object, as in (13). Then \textit{again} can function-compose, as above, to deliver the restitutive reading. In the full paper, I show how this treatment delivers the fact that some double object verbs like \textit{owe} do not show the restitutive reading with \textit{again} (cf. discussion in Bruening 2010, 2015).

(13) a. \([\text{give}] = \lambda x\lambda y\lambda e s\text{give}(e) & \text{have}(x)(y)(s)\]
    b. \([[[\text{[John give the map]} again]]] = \lambda e s\text{give}(e) & \text{have}(\text{map}(\text{John}))(s), \)
    \text{iff } s^\prime \text{give}(e) & \text{have}(\text{map}(\text{John}))(s^\prime) & s^\prime < s, \text{ else undefined.}