Talking about Sources[*]

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1.   Introduction

Adverbials like *'according to X'*, *'given X'*, *'in view of X'* are standardly considered guides to the intended flavor of modal expressions (Kratzer 1981):

(1)   a.   In view of these policies, we **have to** pay the conference fee.   *[deontic]*
         b.   In view of what we know, NELS **has to** be big this year.   *[epistemic]*

When concerned with knowledge, belief, or inference, German *'X zufolge'* and English *'according to X'* seem similar to English *'given X'*:

(2)   Given the article in the Hampshire Gazette, Mary **must** have been re-elected.

(3)   Dem Artikel in der HG zufolge, **soll**   Mary wiedergewählt worden sein.
         The article in the HG after   MODAL Mary re-elected   been   be
         'According to the article in the HG, Mary was reportedly re-elected.'   (German)

However, Kratzer (2012) observes that (2) and (3) differ in that the former, but not the latter commits the speaker to the belief that Mary has been re-elected. This becomes obvious from the (un-)acceptability of ***distancing*** as in (4), which can follow (3) but not (2).

(4)   But I wouldn't be surprised if she wasn't. The Gazette always reads too much into exit polls.

Building on this insight, we distinguish between ***A-adverbials*** (AAs; *'according to the article'*) and ***G-adverbials*** (GAs; *'given the article'*). We call the *X* in *'according to / given X'* the ***basis*** for the expression.

Kratzer concludes that A-adverbials contribute ***informational*** backgrounds (feeding reportative evidentials), and G-adverbials contribute ***realistic*** backgrounds (feeding epistemic modals) for the main clause modal. In the following, we show that the differences between AAs and GAs run deeper than that. We provide a compositional account that takes into consideration (i) the internal make-up of the adverbials and (ii) the interaction with the matrix sentence beyond epistemic or evidential modals. The core idea of our account is that GAs combine with facts that settle a question that the speech act performed by the main clause depends on, whereas AAs express reportative evidentiality.[1]

2. Adverbial make-up and integration into the sentence

2.1 Fine-tuning commitment for GAs

The unacceptability of distancing after (2) shows that G-adverbials commit the speaker to the main clause content. However, when the basis refers to a ***respository of information*** (ROI), no commitment to *its* content is implied. For instance, any aspect of the article (even its existence) can serve as evidence for the main clause in (2).[2] To give some examples: the speaker can build on the article's content but take it to be false as in Context 1; they can be agnostic about its truth but build on its topic as in Context 2; or they can reason from the mere existence of the article as in Context 3.

(5)   Context 1: We know that the Gazette's editorial board opposes Mary and that there was no voter fraud; the article claims that there was widespread voter fraud. We conclude: Mary was re-elected. – ✓ (2).

(6)   Context 2: We know that the Gazette's editorial board opposes Mary and would downplay a success of hers; the day after the election, their lead article is devoted to the annual meeting of the American Hydrangea Society. – ✓ (2).

(7)   Context 3: We know that Mary would have gotten depressed if she hadn't been re-elected and would have stopped publishing. A few days after the elections, before learning of the results, we see some article of Mary's published in the Hampshire Gazette. – ✓ (2).

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[1]We set aside possibly related cases, e.g., *'being paid according to wage class'*; *'given more time, we would...'*.

[2]Kratzer (2012) at times suggests otherwise: "[a]n assertion of (2) would commit [the speaker] to the truth of what the article says" (p. 21); "[the speaker] shouldn't assert (2) unless [they] believed the evidence for the Gazette report to be highly reliable" (p. 22). On the other hand, Kratzer notes elsewhere that a report can serve as evidence "even if it is packed with lies" (p. 34). Conclusions similar to ours are reached on this point in an unpublished email exchange from 02/2012 that Kai von Fintel (p.c.) shared with us in response to our presentation at NELS 50.

2.2 Internal make-up

2.2.1 AAs vs. GAs beyond ROI-denoting bases

AAs and GAs differ in what bases are available and what readings are generated for them.

Definite descriptions are available with both types, as seen in (2) and (3). They do not in general have to describe ROIs; however, with non-ROIs, there is a difference in meaning:

(8) a. Given John's lawyer. . .
         'given who John's lawyer is'; *'given that John has a lawyer'*; *'given what sort of lawyer John has'*; . . .
     b. According to John's lawyer. . .
         only: ≈ *'according to what John's lawyer said'*

'That'-clauses and *'the fact that'*-DPs can be the basis for GAs, but not for AAs:

(9) a. Given (the fact) that p . . .
     b. #According to (the fact) that p . . .

'Wh'-clauses as basis are acceptable for both GAs and AAs, but in Sect. 2.2.3 we will show that these are free relative in AAs and interrogative in GAs.

(10) a. Given who won the race. . .
     b. According to who won the race. . .

Finally, proper names are perfectly fine as AA bases, but appear rather marginal in GAs; however, the latter can be saved with sufficient contextual support.[3]

(11) a. According to John, . . .
     b. ?Given John, . . .
     c. Given Trump, we would be happy today if we had agreements and rules.[4]

From these data, we conclude that the basis of AAs is of type e and is interpreted as ROI; GAs are different in a way to be explored next.

2.2.2 Comparing GAs and Concealed Questions (CQs)

At first glance, DPs appearing as GA bases resemble ***Concealed Questions*** (CQs), i.e. noun phrases that are interpreted like embedded interrogatives (Heim 1979, Frana 2017, i.a.).

For instance, both CQs and GA bases can be interpreted as ***specificational questions***:

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[3]Originally, we took proper names to be unacceptable as the basis of GAs, and we are indebted to Frank Staniszewski (p.c.) for alerting us to the existence of examples like (11c).

[4]https://www.iranwatch.org/library/governments/germany/foreign-ministry/german-foreign-minister-sigmar-gabriel-iran-nuclear-deal-excerpts, retrieved 06/12/2020.

(12)   John told me the prime minister of Canada.
         ≈ John told me who the prime minister of Canada is.

(13)   Given the prime minister of Canada, . . .
         ≈ Given who the prime minister of Canada is, . . .

For both CQs and GA bases, substituting co-extensional expressions can give rise to differences in acceptability (and truth-conditions):[5]

(14)   a.   John told me { the prime minister of Canada / #Justin Trudeau }.
         b.   Given { the prime minister of Canada / #Justin Trudeau }, . . .

However, GAs and CQs also differ in crucial respects, including the following. Firstly, *CQs* are limited to specificational questions (Heim 1979, Nathan 2006), but GA bases are not: [6]

(15)   John told me the prime minister of Canada.
         a.   ✓ 'John told me the identity of the prime minister of Canada'   *[specif.]*
         b.   ✗ 'John told me that Canada has a prime minister'   *[existential]*
         c.   ✗ 'John told me what sort of prime minister Canada has'   *[predicational]*

(16)   Given the prime minister of Canada,. . .
         a.   ✓ 'Given the identity of the prime minister of Canada',. . .   *[specif.]*
         b.   ✓ 'Given that Canada has a prime minister',. . .   *[existential]*
         c.   ✓ 'Given what sort of prime minister Canada has',. . .   *[predicational]*

Secondly, quantifiers can be CQs, but not GA bases :

(17)   a.   John told me { a / every / three / most } president(s).
         b.   *Given { a / every / three / most } president(s), . . .

Thirdly, fact-denoting nominals cannot be CQs, but they can be GA bases:

(18)   a.   John { told me / knows / . . . } the fact that. . .   *[no CQ-reading]*
         b.   Given the fact that . . .

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[5]Proper names require strong contextual support in both cases. For CQs, a way to render them (and many non-relational nouns) felicitous involves reports about whether or not one in a series of identificational questions in a quiz was resolved (Frana 2006, Schwager 2008).

[6]An existential reading, which is oftentimes harder to access out of the blue, is readily available for (i):

(i)   Given his cat, he doesn't seem to be allergic.
         ≈ 'Given that he has a cat, he doesn't seem to be allergic.'

Overall, GA bases appear to pattern more closely with fact-denoting arguments as discussed by Kiparsky and Kiparsky (1970). The argument positions of emotive factives like *be glad* are similar in that definite descriptions or *that*-clauses can directly refer to particular facts (cf. (19a)), and a definite description (in an *about*-phrase) can refer to any sort of fact associated with their referent (cf. (19b)).

(19) a. I am glad (about the fact) that the report exists.
          ≈ only *'that the report exists'*
      b. I'm glad about the report.
          ≈ *'that the report exists'*; *'the content of the report'*; *'that the report is the kind of report it is'*

We conclude that both CQs and GA bases constitute intensional positions and may require shifts to interrogative-like denotations. But these have to be distinct enough to account for the contrasts in (15) to (18). We propose that *'given'* combines with **facts** and that (provided enough context) non-fact denoting expressions can be shifted to facts. CQs, in contrast, have been argued to be of (or be shifted to) almost any semantic type (following Heim 1979, Frana 2017, individual concepts; alternatively, sets of propositions, propositions, properties); they have, as far as we know, not been argued to refer to facts.[7]

2.2.3 AAs and GAs with *wh*-complements

Returning to the comparison between AAs and GAs, the behavior of *'wh'*-clauses is particularly interesting. Modulo a slight difference in preference for or against overtly modalizing the main clause, *'wh'*-clause bases are acceptable in both types of adverbials, cf. (20).

(20) a. According to who won the race, the last mile { was / $^?$must have been } tough.
      b. Given who won the race, the last mile { $^?$was / must have been } tough.

Closer inspection, however, reveals that the *'wh'*-clauses have a different status and interpretation. Specifically, they pass Rawlins's (2008) criteria for free relatives in AAs, and for embedded interrogatives in GAs. Firstly, 'WH-*ever'* cannot appear in GAs, whereas *'which'* without *'-ever'* cannot appear in AAs. (Both accept *'who'* without *'-ever'*.)

(21) a. Given { who(*ever) / which(*ever) contestant } won the race
      b. According to { who(ever) / which*(ever) contestant } won the race

Secondly, different proforms appear in echo questions:

(22) A: According to who was here yesterday, business is good.
      B: According to { WHO / #WHAT }?

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[7]Frana (2006) emphasizes that CQs appear under factive predicates like *know* and assumes that they involve reference to an individual *in analogy* to clausal complements referring to a fact.

(23) A: Given who was here yesterday, business is good.
      B: Given { #WHO / WHAT }?

Thirdly, multiple *'wh'*-items can appear in GAs but not in AAs:

(24) a. #According to who said what...
      b. Given who said what...

Fourthly, the *'what was X doing Y'* construction can only be interrogative, and it is compatible with GAs:[8]

(25) Given what John is doing making all those motions (namely slowing down the process), he really seems to be worried about the outcome.

We conclude that *'wh'*-bases are **free relatives** in AAs and **interrogatives** in GAs.

2.3 Integrating the adverbials into the host sentence

Both AAs and GAs can introduce conversational backgrounds for epistemic or evidential modals (cf. (2), (3) above; Kratzer 1981, 2012). But both AAs and GAs can also occur without epistemic or evidential modals. (26) and (27) show an AA and a GA, respectively, appearing with a root modal, an unmodalized (plain) declarative, and an interrogative. Explicit performatives, however, are acceptable with GAs but not AAs ((27d) vs. (26d)):

(26) a. According to Bill, you **have to** sign here.   *[✔ root modal]*
      b. According to Mary, John is home already.   *[✔ plain declarative]*
      c. According to your sister, who will show up?   *[✔ non-declarative]*
              (scopes under *wh*: *'Who does your sister say will show up?'*)
      d. According to the article, **I suggest** that we get started.   *[✘ expl. perform.]*
              (irrelevant: *'The articles says that I suggest . . . '*)

(27) a. Given her income, Mary's son **has to** pay tuition.   *[✔ root modal]*
      b. (?)Given the content of her article, she has lost her mind.   *[✔ plain decl.]*
      c. Given the precautions she took [. . .], which STD is she most likely to have
          contracted? (Google)   *[✔ non-declarative]*
      d. Given that we're all here, **I suggest** that we get started.   *[✔ expl. perf.]*

3. Analysis

Building on the data we have investigated to this point, we argue that the interpretation of AA vs. GA adverbials can be schematized as in (28a) and (28b), respectively:

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[8]While this test shows that GAs accept interrogative *'wh'*-clauses as bases, it cannot be used to show that AAs do not, because *'what X was doing Y'* cannot (readily) be construed as ROI-denoting.

(28) a. [[according to INDIVIDUAL] [(EVIDENTIAL) PROPOSITION]]
      b. [[given FACT] SPEECH ACT]

We assume that AAs combine with an INDIVIDUAL denoting expression and are defined only if this individual counts as a repository of information (agents associated with doxastic commitments; reports; records;…). If defined, the sentence is true iff the content associated with the individual entails the PROPOSITION (the prejacent if evidentially marked). In contrast, GAs present the FACT individuated by the basis as the speaker's *(epistemic) justification* for the SPEECH ACT undertaken with the main clause.

In the following, we give model-theoretic denotations in a standard possible worlds framework (abstracting away from temporal information) in a semiformal language.

3.1   AAs

We propose to spell out the semantics of AAs as in (29):

(29) $[\![\,$*'according to'*$\,]\!](x_e)(p_{\langle s,t \rangle})(w)$

   –   defined only if $\text{CONTENT}_w(x)$ is defined.
   –   if defined, true iff $\text{CONTENT}_w(x) \subseteq p$

The metalanguage predicate CONTENT, at world w, maps individuals to the contents they are associated with. For instance, $\text{CONTENT}_w(x)$ may be the set of worlds compatible with what x claimed in a contextually relevant discourse. Then the whole is true just in case the main-clause proposition (or prejacent) p is true at all the worlds in this set.

Overt reportative modals in the main clause are optional and can receive *harmonic* interpretations as in speech reports (Schenner 2008, Kratzer 2006, Moltmann 2019, i.a.).

(30) a. Peter zufolge   { ist Maria im   Büro / **soll** Maria im   Büro sein }.
          Peter according-to   is Maria in.the office   MOD Maria in.the office be
          'According to Peter, Maria is in the office.'
      b. Peter behauptet, dass Maria im   Büro { ist / sein **soll** }.
          Peter claims   that Mary in.the office is   be   MOD
          'Peter claims that Mary is in the office.'

On the most salient interpretation for both (30a), involving an AA, and (30b), involving a *verbum dicendi*, the weak necessity modal *'soll'* is optional. Both express that the proposition 'that Mary is in the office' follows from what Peter claimed. While we won't defend any particular solution to the problem, we take the data in (30) to argue in favor of an assimilation between AAs and verbal predicates of speech reporting. As far as we can tell, the Hintikka-style semantics for AAs that we propose in (29) can be replaced with whatever account of verbal speech predicates turns out best suited to deal with harmonic modals (and other issues of speech reporting, see Kratzer 2006, Moulton 2009).

3.2 GAs

3.2.1 The facts in GAs

Facts correspond to true propositions, but are not (necessarily) the same thing.[9] Besides attempts to identify the two, facts have also been analyzed as *making* propositions true, or as *exemplifying* true propositions (Kratzer 2002). We stop short of taking a stance on these issues. For the purpose of this paper we assume that for every proposition p and world w, if p is true at w then there is a unique object $\text{FACT}_w(p)$, *the fact that p (at w)*. We remain agnostic as to what exactly $\text{FACT}_w(p)$ is (e.g., a Kratzer-style situation; a Veltman-style fact; a Fine-style truthmaker; or something else). Note that $\lambda w[\text{FACT}_w(p)]$ is a partial "factual concept", i.e., a partial function from worlds to facts, defined only for worlds at which p is true and, where defined, returning the fact that p is true.

As stated at the top of this section, GAs refer to a fact that crucially motivates the speech act carried out with the main clause. This reference to the relevant fact can come about either **directly**, as in *'given (the fact) that'*, or **indirectly**, by shift from definite descriptions or interrogatives, as in *'given Sally's lawyer'*, *'given who Sally's lawyer is'*.[10,11] In the following we give some more details about the indirect mode.

3.2.2 From $\langle s, e \rangle$-basis to fact: Roadmap

In Sect. 2.2.2 we have seen that definite descriptions (which we assume denote individual concepts, i.e., of type $\langle s, e \rangle$) can map to different sorts of facts:

(31)   Given Joe's lawyer, we'd better prepare for an ugly fight.

    a.   given that Joe's lawyer is who she is   *[specificational]*
    b.   given that Joe's lawyer has the properties she has   *[predicational]*
    c.   given that Joe has a lawyer   *[existential]*

Of course Joe's lawyer is who she is and has the properties she has, yet these GAs are not trivial: GAs contrast the referent's *actual* properties with properties that the referent *could have* had. The alternatives induce a partition of the logical space (similar to a question denotation). By using a GA, the speaker conveys that their choice of discourse move depends on which cell in the partition is true (i.e. the true answer to the question).

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[9]Kratzer (2002) wrote: "I know of two areas in semantics where we seem to need a notion of 'fact' that cannot simply be identified with 'true proposition'. One is the semantics of the verb *to know*. The other is the semantics of counterfactuals." We concur and maintain that that GAs are a third such area.

[10]The somewhat marginal cases involving a proper name could, in principle, be assimilated to either direct reference (individuals as facts) or indirect reference. Since it is always a specific aspect of an individual that is taken to play a role (and not the individual as such), we suggest that this case is otherwise similar to what is going on with definite descriptions.

[11]Relatedly, Abenina-Adar (t.a.) proposes an interpretation of *wh*-complements of *interesting/interests* as two types of facts.

Knowing the answer, the speaker motivates her discourse move with the relevant fact (i.e., the fact that the true answer is the true answer).

3.2.3 From $\langle s, e \rangle$-basis to fact: Details

We assume that the different readings of GAs result from the criteria applied in deciding what move to make.

(32)   A **criterion** C is a set of properties, i.e. $C \subseteq D_{\langle\langle s,\langle e,t\rangle\rangle,t\rangle}$.

The particular criterion entering the interpretation of a GA is (typically) given by context.
  – specificational: identity to an individual $C_{spec} = \{\lambda w \lambda x[x = d] | d \in D_e\}$
  – predicational: properties more generally $C_{pred} = \{nasty, nice, \dots\}$
  – existential: we assume an *existence* predicate $\mathcal{E}$ of type $\langle s, \langle e,t\rangle\rangle$ $C_{ex} = \{\mathcal{E}\}$
We assume that the properties in C are mutually incompatible: if $P \neq Q$ then $P_w \cap Q_w = \emptyset$ at all worlds w. This ensures that C can be used to induce a partition of the logical space.

(33)   The **derived partition** $\pi(C)(f)$ for an individual concept f relative to criterion C represents the question which of the properties in C f has:[12]

$$\pi(C)(f) = \lambda w \lambda v \forall P \in C[P_w(f_w) \leftrightarrow P_v(f_v)]$$

For the three types of criteria listed above, this comes down to this:
  – specificational: "which individual is the f" $\pi(C_{spec})(f) = \lambda w \lambda v[f_w = f_v]$
  – predicational: "whether the lawyer is nasty or nice"
        $\pi(C_{pred})(f) = \lambda w \lambda v[(\text{nasty}_w(f_w) \leftrightarrow \text{nasty}_v(f_v)) \land (\text{nice}_w(f_w) \leftrightarrow \text{nice}_v(f_v))]$
  – existential: "whether f exists" $\pi(C_{ex})(f) = \lambda w \lambda v[\mathcal{E}_w(f_w) \leftrightarrow \mathcal{E}_v(f_v)]$

A comment is in order concerning the existential criterion. We assume that f can be a partial function: for instance, *'John's lawyer'* is undefined at worlds at which John does not have a lawyer. But if f_w is undefined for some world w, so is $\mathcal{E}_w(f_w)$. This makes $\pi(C_{ex})(f)$ a somewhat defective "equivalence relation": it has just a single equivalence class (the set of worlds at which f exists), and it does not exhaust the logical space (since worlds at which f does not exist are not related to any worlds). This helps us account for the special behavior of the existential criterion: If John does not have a lawyer, then *'given John's lawyer'* cannot be used to mean 'given that John does not have a lawyer'. This also means that our paraphrase of the derived partition under the existential criterion is not quite right: it should really read "whether f exists (if it does)".

(34)   The **true cell** in a derived question $\pi(C)(f)$ at a world w is the true answer to the question, $\pi(C)(f)(w)$.

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[12]Since the properties in C are mutually incompatible, $\pi(C)(f)$ is an equivalence relation on the set of worlds at which f is defined (similar to a question denotation).

For the three types of criteria listed above, this means:

- specificational: "that the f is the f" $\pi(C_{spec})(f)(w) = \lambda v[f_w = f_v]$
- predicational: "that the lawyer has the properties she has"
  $$\pi(C_{pred})(f)(w) = \lambda v\ [(\text{nasty}_w(f_w) \leftrightarrow \text{nasty}_v(f_v)) \wedge (\text{nice}_w(f_w) \leftrightarrow \text{nice}_v(f_v))]$$
- existential: "that f exists" (if it does) $\pi(C_{ex})(f)(w) = \lambda v[\mathcal{E}_w(f_w) \leftrightarrow \mathcal{E}_v(f_v)]$

Due to the possible partiality of f, the existential criterion yields a true cell only at world at which f is defined; at those worlds, the true cell is the proposition that f is defined.

3.2.4 Facts! Facts!

GA-bases that denote facts can be used as they are. Those that denote individual concepts (type $\langle s,e \rangle$), such as definite descriptions, can be mapped to the fact that an individual has the relevant property (that is, the true cell under the contextually given criterion) by a type shifter FACT$_1$:

(35) $[\![\text{FACT}_1]\!]^{w,C} = \lambda f_{\langle s,e \rangle}.\text{FACT}_w(\pi(C)(f)(w))$

Question-denoting bases can be shifted to the fact corresponding to their true answer:

(36) $[\![\text{FACT}_2]\!]^w = \lambda Q_{\langle s,\langle s,t \rangle \rangle}.\text{FACT}_w(Q(w))$

There may seem to be some redundancy in this setup because the shift from a question to its true answer is also part of what $[\![\text{FACT}_1]\!]^{w,C}$ achieves: it shifts individual concepts to interrogative denotations, which are then shifted to facts. This suggests that a single shifter might suffice for both types of GA bases. But unifying the two shifters would likely create problems for a theory of Concealed Questions: if CQ embedding predicates like *know, tell, reveal*, etc. can combine with $\langle s,\langle s,t \rangle \rangle$ denotations, we would then predict that they could combine with the result of the shift from individual concepts to interrogative denotation. But we have shown in Sect. 2.2.2 that GAs with individual concept bases have a wider range of readings than CQs, the latter being restricted to specificational readings. So the route from individual concepts to question denotations required for the theory of CQs must be more constrained than our shift from individual concepts (via question denotations) to facts. If we generated question denotations freely from GA bases under the predicational and existential criteria, then some other kind of constraint would have to make those question denotations unavailable for the complements of CQ-embedding predicates. While it may not be impossible to construct such a theory, this architecture strikes us as baroque. We refrain from a unification along these lines to avoid overgeneration for CQs.

3.3 GAs as a topic at speech act level

We assume that GAs are topics operating at speech act level, similarly to what Repp (2011) proposes for relevance topics. Like her, we build on Krifka (2001) and conceive of speech acts as functions from commitment states to commitment states. To account for the contri-

bution of GAs, we analyze *given* as a function mapping a fact *F* and speech act *A* to a new complex speech act that consists in carrying out the input speech act *A*, but in addition imposes a public commitment on the speaker that fact *F* constitutes their epistemic grounds for carrying out *A*.[13] In (37), the variables s, s' range over commitment states.

(37) $[[\text{given}]]^w =$
$\lambda F_{\text{Fact}}.\lambda A_{\text{SpeechAct}}.\lambda s.\lambda s'.s' \in A(s) \ \& \ \text{COMMIT}_{\text{Speaker}}(\text{EPISTGROUNDS}(F, A, s))(s')$

The interaction of GAs with reports of discourse moves provides evidence for our assumption that the modification involves discourse commitments and cannot be resolved as, for instance, a causal relation between worldly facts that the speaker subscribes to. Consider (38):

(38) Given that the incompatibility between imperative marking and negation is not universal, most authors propose a syntactic solution.

On its most salient reading, (38) does not commit the speaker to using a crosslinguistic fact as evidence for their own claim that most authors defend a certain type of theoretical position; instead, it commits the speaker to believing that most authors draw on the crosslinguistic fact to motivate *their* proposal of a syntactic solution. Crucially, while the speaker is committed to the GA-basis naming a fact, they aren't committed to the move ascribed to most authors (see (39a); they are, however, committed to the authors seeing the fact as motivation for their position (39b).

(39) a. ✓ ..., but I don't think that this is compelling grounds to not treat it in the semantics.
      b. ✗ ..., but I don't think they are even aware of these crosslinguistic patterns.

We suggest to capture this difference by allowing GAs to modify reported speech acts, with (40b) representing the discussed reading of (38).

(40) a. [Given FACT, COMMIT/QUESTION *p*]
      b. [COMMIT/QUESTION [Given FACT [SUBJECT *proposes, claims, believes, argues,...*]]]

In this paper, we have to stop short of developing further an analysis of (40b), but we maintain that a full-fledged account of GAs will extend to examples along these lines.

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[13]The choice of framework is guided mostly by ease of exposition. We believe that the idea could be implemented equally well with a treatment of speech acts that relies on richer contextual representations and specific assumptions as to how particular types of linguistic objects interact with them, e.g. Portner (2005), Farkas and Bruce (2010). We take it that examples involving *given* as anchoring to reported speech events as discussed for (38) will provide important feedback on the choice between alternative frameworks.

4. Conclusions and outlook

We have argued that AAs and GAs interact differently with their matrix clauses, both modalized and unmodalized. Specifically, GAs provide evidence that ***facts*** play a role not only at the level of sentence composition, but also at the level of discourse management.

Cross-linguistically, AAs vs. GAs may provide insights into richer evidential systems. For instance, the Japanese inventory of evidentials includes (reportative) *'soo-da'* and (inferential) *'yoo-da'*, among others.[14] One of the open debates surrounding their semantics is what attitude towards their prejacent they commit the speaker to, if any (e.g., its truth, the possibility of its truth, its falshood, none at all). In exploring this issue, it may prove instructive to consider how different GA-like and AA-like adverbials affect their felicity in a variety of contexts. For instance, Matsubara (2017) discusses various Japanese counterparts of the Kratzer examples we mentioned in the introduction. She observes the following pattern in the context given:

(41) [Context: The gazette is an unreliable source hostile to Higgins.]

    a. gazette-no   kiji-wo   yomu kagiri, Higgins-wa saitousen sita
       Gazette-GEN article-ACC read   extent Higgins-TOP got re-elected
       { yoo-da   / #soo-da   }.
         INFERENTIAL REPORTATIVE
       'Given what I've read in the G article, H got re-elected, it seems / I hear.'

    b. gazette-no   kiji-ni-yoru-to,   Higgins-wa saitousen sita
       gazette-GEN article-according-to Higgins-TOP got re-elected
       { #yoo-da   / #soo-da   }.
         INFERENTIAL REPORTATIVE
       'According to the G article, H got re-elected, it seems / I hear.'

Thus when the prejacent is known to be false, inferential *'yoo-da'* is felicitous with the GA-like construction in (41a) but not with the AA in (41b). The observation that *'soo-da'* is infelicitous with both adverbials suggests that it conveys some amount of speaker endorsement, its reportative semantics notwithstanding. This contradicts a claim by McCready and Ogata (2006) but is corroborated by Matsubara's (2017) extensive experimental work. Matsubara observes further interesting patterns, and many more remain to be explored, in Japanese and other languages.

The semantics proposed for GAs as encoding a relation at discourse level is worth comparing with the interpretation of free adjuncts (Sarah Zobel, p.c.). (42) exemplifies that the latter can, in the absence of modal or temporal operators to anchor to, be interpreted as inducing causal (or concessive) relations (Stump 1985).

(42) As a cat lover, Peter hates dogs.

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[14]The *'sou-da'* we have in mind is the one that combines with tensed clauses.

Zobel (2019) argues that such relations are established at the discourse level between the presuppositions triggered by the adjuncts (here, that Peter is a cat lover) and the content of the modified clause (that Peter hates dogs). GAs differ in that a relation is established at speech act level, and is encoded semantically.

Finally, GAs do not admit *'whether'*-interrogatives as complements:

(43) a. Given that John { is / is not } here, I propose an amendement.
      b. #Given whether John is here (or not), I propose an amendment.

In this, GAs are similar to (emotive) attitude verbs like *'regret'* (also *'resent'*, *'admit'*, *'be surprised'*, . . .), which embed interrogatives but not *'whether'*-interrogatives:

(44) Bill regrets { that / # whether } he went to the party.

The literature offers much discussion of this but little agreement (Ginzburg 1995a,b, Lahiri 2002, Sæbø 2005, Egré 2008, i.a.). We suspect that both GAs and *'regret'* reject *'whether'*-interrogatives for similar reasons, but we must leave the question open for future work.

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