

Symbouletic Modality

Igor Yanovich

This paper argues for a novel semantic type of modality: *symbouletic modality* (from Greek *συμβουλευέω* ‘to advise’). *Symbouletic modals* are a subtype of *priority modals* that do not just neutrally state the facts, but urge somebody to take a particular practical action. Thus *symbouletics* have close ties both to other *priority modals* and to *performative verbs*. A formal semantics for *symbouletics* is provided within the framework for *performatives* by Condoravdi and Lauer.

Keywords: *symbouletic modality*, *advice*, *priority modality*, *grammaticalization*, *semantic maps*

1 *Symbouletic Modality: Performative Modality of Suggestion*

Portner (2009) defends a classification of modality that features *priority modality* as one of the superclasses. *Priority modals* share the circumstantial modal base, and their ordering source, in Kratzer’s semantics for modals, orders the practical options provided in that modal base according to some measure of goodness. *Deontic modal statements* describe what follows the rules best, as in (1). *Teleological statements* describe a means to reach a particular goal, as in (2). *Bouletic statements* describe desires, cf. (3).

- (1) **Deontic:** *Tax office’s website:* Everyone **should** file their taxes by April 15.
- (2) **Teleological:** To get to the Polar Bear Park, you **have to** take a plane.
- (3) **Bouletic:** I **must** try this cake. I simply **must**.

*Symbouletic*¹ modals, as in (4), intuitively fit the general category of *priority modality*: they select one practical option as preferable.

- (4) **Symbouletic:** You really **should** go to that concert!

What distinguishes them from other *priority modals* is that they do not just describe the best option, but also actively urge that it is actually chosen by the agent. Thus only *symbouletics* may be paraphrased by attitude reports with *performative verbs* like *advise*, *suggest* and *recommend*, as in (5).

- (5) *Reporting* (4):
 - a. I **advise** you to go to that concert.
 - b. I **suggest** that you go to that concert.
 - c. I **recommend** that you go to that concert.

I am grateful to the audiences at UConn, Stanford, UCLA, and Paris 8 at CSSP, and to Paul Bloomfield, Cleo Condoravdi, Kai von Stechow, Sabine Iatridou, Lauri Karttunen, Magdalena Kaufmann, Stefan Kaufmann, Paul Kiparsky, Natasha Korotkova, Manfred Kríž, Sven Lauer, Christopher Piñón, Yael Sharvit, Yakov Testeleets, and Sam Wheeler, as well as an anonymous reviewer for EISS 10. Their comments and suggestions made this paper better.

¹The term *symbouletic* is derived from Greek *συμβουλευέω* ‘to advise’. I am grateful to Paul Kiparsky, p.c., for suggesting it.

It is easy to check that none of the statements in (1)–(3) may be paraphrased that way. The reason is simple. The paraphrases in (5) do not directly express the idea that there are obligations, goals, or desires that make it necessary to go to the concert. But the message of (1)–(3) is irreducibly and directly about such obligations, goals or desires. I argue that symbolietic (4) may express a suggestion per se, without direct reference to desires, obligations, or goals. It is the suggesting itself that is the direct message of a symbolietic statement, or at least a part thereof.

Symbolietic modality may thus be also called the modality of suggestion and advice (as e.g. deontic modality is the modality of permission and obligation). A symbolietic, however, should not be confused with the various informal uses of the phrase “advice modal”. For example, in the formal-semantic literature, von Stechow and Iatridou (2005) call “advice modal” the teleological modal in anankastic conditionals such as *If you want to go to Harlem, you **must** take the A train*. (Cf. also Traugott and Dasher 2002:ch.3). The modal in that example is not a symbolietic: it neutrally describes the (optimal) means to achieve the goal of getting to Harlem but does not urge the addressee to actually undertake the action. Similarly, in the descriptive, typological, and grammaticalization literature, certain modals are said to be able to express advice, for instance, (*'d*) *better* when analyzed by Palmer (1990:sect. 4.7) or van der Auwera et al. (2013). Often, such modals would indeed be symbolietics according to the criteria of paraphrasability with *advise* or *suggest*. But embedded symbolietics, which I will argue below have the same semantics as non-embedded ones, are less likely to be informally classified as expressing advice. To sum up, I will use *symbolietic* as the official name for the new type of performative modality.²

It is instructive to compare symbolietic modality, that is, the performative modality of advice and suggestion, with such a well-known performative type of priority modals as performative deontics. Both (6) and (7) are self-fulfilling statements: (6) both describes the order and issues it, and similarly (7) both describes and issues a suggestion.

(6) **Performative deontic:**

Context: today is New Year's Eve, and everybody in the house knows that the usual rules about bedtime do not apply on that day. Instead, the parent will issue a new rule about when the child goes to sleep.

Parent to the child: You **must** go to bed at 1am. (Because I set the rules.)

(7) **Symbolietic:**

Sarah to Mary: You really **ought** to quit that job.

Both deontic and symbolietic performatives may be reported using the corresponding performative verb, and the report would only feature the prejacent (i.e. the argument proposition) of the modal, but not the modal itself, as in (8)–(9). The semantics of the modal of the original utterance is captured by the semantics of the attitude verb in the report.

²Nuyts et al. (2005) argue for a division of the “wide deontic” category of modality into deontics proper, which they argue qualify their complement as (un)acceptable, and *directive* modality, which compared to deontics has an important “action plan”. That understanding of the term *directive* differs from the usage I assume in the main text, where together with Condoravdi and Lauer I use *directive* to refer to performative attitudes of ordering. While symbolietic modality is also related to action, my notion is very different from Nuyts et al.'s: they do not view performativity as a necessary property of their directive modals; only a tiny portion of their directives are performative.

- (8) *Reporting (6)*: The parent **ordered** the child to go to bed at one.
 (9) *Reporting (7)*: Sarah **advised** Mary to quit that job.

Another property that symboletics and performative deontics have in common with other performatives such as imperatives or performative verbs is that the speaker who issues claims with them cannot be accused of lying, though she can be accused of doing something wrong. When the speaker issues a performative statement, its self-fulfilling component cannot be a lie: it just happens by the virtue of the utterance having been asserted. However, the speaker may be criticized for what she's done by making her statement – for instance, with a reply like *What a silly idea*. In (10)–(14) we can see that symboletics and performative deontics pattern with other performatives and not with non-performative modals with regard to how the speaker that issued them may be criticized:

- (10) **Control 1a, imperative**: (Just) **go** to that concert!
 a. #You are lying!
 b. What a silly idea.
 Reading 1: what a silly idea for you to tell me what to do
 Reading 2: what a ridiculous idea for me to go to that concert
- (11) **Control 1b, performative verb**: I **name** this chair Cosmos.
 a. #You are lying!
 b. What a silly idea.
- (12) **Control 2, descriptive deontic**:
 (According to the city), cars **must not** be parked here overnight.
 a. You are lying!
 b. (^{OK} or #) What a silly idea.
 # if referring to the speaker's statement
 ^{OK} if targeted at the city, which in the speaker's opinion introduced a bad rule
- (13) **Performative deontics side with other performatives**:
 You **must** go to sleep at once!
 a. #You are lying!
 b. What a silly idea.
- (14) **Symboletics also side with other performatives**:
 You really **should** go to that concert!
 a. #You are lying!
 b. What a silly idea.
 Reading 1: what a silly idea for you to advise me
 Reading 2: what a ridiculous idea for me to go to that concert

Just like performative verbs, performative modals only give rise to a truly performative statement if particular conditions are met. The speaker must be licensed to issue an order or a suggestion in question, and the sentence must be in the present tense. When such grammatical preconditions are not met, we get a *report* of a performative statement. Just as reports in (8) and (9), such statements have no performative force of their own.

Despite similarities, there is also a difference between performative deontics and sym-

bouletics. It becomes apparent when we consider how they may, or may not, be used in a non-performative context — for example, embedded under an attitude verb. Deontics are relative to obligations, symbouletics — to what is advisable (in the sense that we will formalize later). With a performative deontic, the obligation itself is created by the act of issuing the deontic statement. It does not exist without such a statement. But if Sarah thinks that it is advisable for Mary to quit her job, what she considers advisable would remain adviseable (as judged by Sarah) regardless of whether she actually has a chance to make the suggestion. The difference is illustrated in (15) and (16).

- (15) *Context: the parent has not yet issued the special bedtime rule for today.*
 The parent thought that the child **had to** go to sleep at 1am.
 = *Based on various considerations of what is best, the parent thought that 1am is the time to go to bed for the child. But the parent's decision to issue a special rule about that for today does not figure in those considerations, as it was not issued yet.*
- (16) Sarah thought that Mary **should** quit her job.
 = *It was compatible with Sarah's state of mind that it's advisable for Mary to quit her job. Even though Sarah hadn't issued a suggestion yet, what is advisable in her opinion is the same as it would be if she does provide advice.*

As for other performatives, a crucial challenge in developing a proper semantics for symbouletics is to assign them a meaning which makes proper predictions both for performative and non-performative, reportative uses. In section 3, I will provide such a semantics within the framework for performatives by Condoravdi and Lauer (2011) and Condoravdi and Lauer (2012).

But before we turn to formulating the semantics, we should study the empirical properties of symbouletics a bit more. However, it is not particularly easy to do this in English. Symbouletics *should* and *ought* have many non-symbouletic meanings, so especially when they are used non-performatively, it may be hard to tease symbouletic from non-symbouletic instances. On the other hand, (*d*) *better*, almost a specialized symbouletic, does not present such a problem, but instead it is quite restricted syntactically. Conveniently, in Russian we find a specialized symbouletic *stoit* which has few syntactic restrictions: it freely appears under negation, past tense, and attitudes. In the next section, we will look at its properties, and after that we will be in a better position to formulate a formal semantics for symbouletics in section 3.

2 Russian *stoit*: A Specialized Symbouletic

Russian impersonal verb *stoit* ‘should; (*d*) better’ is a specialized symbouletic modal: it may be used in suggestions and advice, but it cannot express other priority modal flavors such as deontic, teleological, or bouletic. For example, *stoit* is entirely appropriate when you are suggesting to a friend that she should take a vacation, as in (17). But if you want to assert that the rules make it necessary for your friend to submit a report before tomorrow (i.e. if you want to make an objective, non-performative deontic statement), *stoit* is out, cf. (18).

- (17) Tebe **stoit** poexatj v otpusk.
 you.DAT STOIT go to vacation
 ‘You should take a vacation.’

- (18) *Soglasno pravilam, tebe **stoit** sdatj otčot do zavtra.
 according rules you.DAT STOIT submit report before tomorrow
 ‘According to the rules, you should submit the report before tomorrow.’

When a parent uses *stoit* to tell a child that she should do something, this cannot be understood as a performative subjective deontic statement. The sentence may only be taken to convey a mild suggestion, where it is left to the child to decide what she would do.

- (19) *Parent to the child:* Tebe **stoit** pojti spatj.
 you.DAT STOIT go sleep
 # if the parent intends to issue an order/describe an obligation
^{OK} if the parent mildly suggests that it’s better for the child to go to sleep

In the teleological context in (20), Russian priority modal *nužno* is used to describe the means to reach the goal stated in the purpose clause. The example is perfectly fine even when the speaker does not actually think that goal is a good one and does not endorse taking the action needed to reach it, as the second sentence of (20) shows. But if we replace *nužno* with *stoit*, as in (21), the example becomes bad. The continuation ‘But I wouldn’t advise her to do this’ is incompatible with the *stoit* statement. Thus *stoit* cannot express regular teleological modality. When we replace a teleological modal with *stoit*, we turn it from a neutral description of what one needs to do in order to reach a certain goal into a genuine advice statement.

- (20) Čtoby povysitj svoi šansy, Maše **nužno** kupitj vtoroj loterejnij bilet.
 in.order.to improve her chances Masha.DAT NUŽNO buy second lottery ticket.
 No ja by ej ne sovetoval.
 But I would to.her not advise
 ‘To improve her chances, Masha **has to** buy a second lottery ticket. But I wouldn’t advise her to do that.’
- (21) #Čtoby povysitj svoi šansy, Maše **stoit** kupitj vtoroj loterejnij bilet. No
 in.order.to improve her chances Masha.DAT STOIT buy second lottery ticket. But
 ja by ej ne sovetoval.
 I would to.her not advise
 Intended: the same meaning as in (20)

Bouletic meanings also cannot be expressed with *stoit*. Thus *objazana* ‘obliged’ in (22) may express such a meaning, but *stoit* in (23) creates the impression of a non-sequitur:³

- (22) Ja xoču poprobovatj etot pirog. Ja prosto **OBJAZAN** eto sdelatj!
 I want to.try this cake I just have.to that.ACC do
 ‘I wanna try this cake. I just have to!’
- (23) #Ja xoču poprobovatj etot pirog. Mne prosto **STOIT** eto sdelatj!
 I want to.try this cake I.DAT just have.to that.ACC do
 Intended: the same meaning as in (22)

³Contrastive focus on the modal seems to greatly boost bouletic readings both in English and in Russian. With focus on the embedded VP, (23) becomes OK but still does not convey a statement about the desires. Instead, it asserts that the speaker has chosen a particular course of action.

We have established that *stoit* is a specialized symbolletic: it can be used in suggestions and advice, but it cannot express deontic, teleological, or bouletic meanings. This makes *stoit* a perfect item with which to study the properties of symbolletic modality. While some of *stoit*'s properties may be idiosyncratic to that word, at the least we can be sure that whenever we see *stoit*, we are dealing with a symbolletic, and not with any other kind of priority modal.

Below, I describe the following six semantic properties of *stoit*: (i) **Decision**, (ii) **Subject Benefit**, (iii) **Partial Rejection**, (iv) **Endorsement**, (v) **Embeddability**, and (vi) **Scope over Neg**. In what follows, let *stoit*(*x*, *p*) stand for 'x *stoit* p'.

Decision is the requirement that *x*, the subject of the *stoit* clause or the *suggestee*, has some control over whether *p*, the argument proposition, will be actualized or not. If that requirement is met, *x* faces a genuine *decision problem* where *p* is one of the possible choices. **Decision** may be violated in one of two ways. First, it may be that either *p* or $\neg p$ is not a metaphysical possibility, so objectively there is no choice. Second, it may be that metaphysically both *p* and $\neg p$ are possible, but it is not under *x*'s control which one will be actualized. (24) illustrates the second option: the acceptability of (24) depends on whether it is assumed in the context that the addressee has the control over getting employment.

- (24) Tebe **stoit** nanjatjsja na rabotu.
 you STOIT get-employed PREP job
 'You *stoit* get a job'

^{OK} if it depends on the addressee to get a job: there are plenty of jobs around, she has relevant qualifications, etc.

if there just aren't any jobs around, and no qualifications would guarantee getting a place to work.

The property **Subject benefit** is that to assert *stoit*(*x*, *p*) properly, the speaker must believe that acting towards *p* is of direct benefit to *x*. Thus (25) is only OK if it's the addressee for who it'd be nice if he baked a pie. Whether there is somebody else who would benefit is irrelevant.

- (25) Tebe **stoit** ispeč pirog.
 you STOIT bake pie
 'You *stoit* bake a pie'

if the speaker wants a pie, but there's no direct benefit to the hearer in baking one.

^{OK} if the hearer feels down, and the speaker knows baking a pie always lets him up.

As we have seen for English in (14), the speakers of symbolletic statements cannot be accused of lying, and that is true for *stoit* as well, cf. (26a). But at the same time, their statement may be rejected as incorrect by pointing out that **Subject Benefit** was not met, cf. (26b). Thus the effect of a *stoit* claim is twofold: on the one hand, once the statement is issued, it cannot be contested that the suggestion has been given (this is the self-fulfilling part that cannot be rejected), but on the other, it can be contested that it'd be good for *x* to do *p*. We can call the property of conveying two things at once only one of which can be rejected, **Partial Rejection**.

- (26) *Mary to Ann:* Tebe **stoit** sxoditj na etot koncert.
 you STOIT go to that concert
 'You *stoit* go to that concert.'

- a. *Ann*: #Ty lžoš: ty ne predlagaeš mne tuda pojti.
 you lie you not suggest me there go
 ‘You are lying, you are not suggesting that I go there.’
- b. *Ann*: Ty ošibaješsja: mne ne nraivitsja etot dirižor. Ty dala mne
 you are.wrong I NEG like that conductor you gave me
 nepraviljnyj sovet.
 wrong advice
 ‘You are wrong, I don’t like that conductor. You gave me wrong advice.’

The property **Endorsement** requires that the speaker of *stoit*(x,p) actually endorse x ’s acting towards p . The presence of such endorsement can be tested with suggestions, orders, etc. that specifically involve working towards $\neg p$. We have already seen an example that demonstrates **Endorsement** in (21). Another example is (27).

- (27) #Tebe **stoit** ispeč pirog, no ne delaj etogo.
 you **STOIT** bake pie but not do that
 ‘You *stoit* bake a pie, but don’t do that.’

So far, we have only seen *stoit* in proper performative contexts: in matrix clauses in the present tense. Moreover, the subject of *stoit* has always been a second person pronoun. Such contexts may be considered to represent the canonical advice situation. But *stoit* is not restricted to such contexts. For example, the subject of a *stoit* clause may denote an individual who the speaker doesn’t think she will ever actually give advice to. For example, *stoit* is fine in (28): the sentence conveys that the speaker subscribes that the president take a particular action. If the president suddenly asks for her opinion, she would have to give the president the same advice.

- (28) Presidentu **stoit** sozdatj agenstvo po zaščite prirody.
 president.DAT **STOIT** create agency for defense of.environment
 ‘The President **should** create an agency for the defense of the environment.’

Thus *stoit* is not just a word that directly marks the sentence as constituting actual advice. Instead, it is a lexical item with such semantics that creates the self-fulfilling effect in canonical advice situations, but need not be only used performatively — just as performative attitude verbs may be used both performatively or descriptively depending on the context. What demonstrates that even more is the property of **Embeddability**: *stoit* may be embedded under question operators, as in(29), and under past tense and attitudes, both illustrated in (30).

- (29) **Stoit** li mne zapisatjsja na etot klass?
STOIT Q I.DAT register for that class
 ‘**Should** I register for that class (I wonder)?’⁴
- (30) Maša teperj dumajet, što Ane **stoilo** tuda pojti.
 Masha now thinks that Anja **STOIT.PAST** there go
 ‘These days Masha thinks that (according to Masha’s current information) that (given

⁴(29) may be either a genuine question asking for the addressee’s opinion, or a question directed at oneself. This is similar to how *Should I go there?* may be used.

the circumstances back then) Anya should have gone⁵ there.⁶

Finally, consider the property **Scope over Neg**: when *stoit* appears in the same clause with sentential negation, the modal always scopes over negation:

(31) *Context: The addressee has a choice of going to Boston, NYC, or Philadelphia.*

Tebe **ne stoit** exatj v NYC.

you.DAT not STOIT go to NYC

= ‘You shouldn’t go to NYC.’

□ > ¬

≠ ‘It’s not that going to NYC is your best option.’

¬ > □

Crucially, there is nothing wrong semantically with the absent scope construal: it would have conveyed that the speaker does not suggest going to New York. In (32) we can see that a meaning very similar to the one absent in (31) may be obtained if we embed *stoit* under an upper-clause negation. That means that **Scope over Neg** is a genuine constraint: it rules out what would’ve been a reasonable meaning for (31).

(32) Eto ne značit, što tebe **stoit** exatj v NYC, vedj v Bostone tože interesno.
this not means that you.DAT STOIT go to NYC as in Boston also interesting
‘That does not mean you should go to NYC, because in Boston it’s also fun.’

Now that we have identified the properties of **Decision**, **Subject Benefit**, **Partial Rejection**, **Endorsement**, **Embeddability**, and **Scope over Neg**, two related questions arise. First, which of these follow directly from the semantics of *stoit*? The lexical meaning I propose in the next section would capture all properties but **Scope over Neg**, which I believe is due to an idiosyncratic constraint associated with the word.

The second question is, which of those properties belong to every symbolletic, and which are special for *stoit*? In the analysis that I propose, **Endorsement**, **Embeddability**, and the no-rejection part of **Partial Rejection** follow from the core symbolletic semantics. **Subject Benefit** and the rejection part of **Partial Rejection** do not; they are encoded into a separate, non-self-fulfilling clause of the meaning for *stoit*. A comparison of Russian *stoit* and English *better* and *should* will suggest that this is as it should be: those English symbolletics may urge action that is not of direct benefit to the subject of the symbolletic statement. Furthermore, while I predict that the semantic property of **Embeddability** follows from the symbolletic semantics, there may well be additional, possibly syntactic, constraints that prevent actual embedding. Thus (*d*) *better* is more restricted than Russian *stoit*. Similarly, the symbolletic semantics as such does not preclude *stoit* from scoping under clausemate negation, but in reality such

⁵The translation is not fully accurate in that the Russian example does not convey counterfactuality. It would be more natural to assert (30) in a context where it’s known that Anya didn’t actually go, but the sentence is not incompatible with a situation where Anya actually went.

⁶There are three temporal indices that are relevant in (30): (i) it is from the perspective of the present that the relative goodness of different options is judged; (ii) it is the perspective of the past which determines the circumstances that are taken into account; and (iii) the event of Anya’s going there is in the future from the time provided by the past perspective. The (ii) and (iii) are the familiar modal temporal perspective and temporal orientation – two parameters that are generally needed to account for modal semantics, Condoravdi (2002). What about (i)? After giving a formal analysis of *stoit*’s semantics in section 3, we will see that actually the present temporal perspective is only used by the attitude verb, and not the modal.

scoping is ruled out. Finally, the status of **Decision** is unclear, and will be discussed below.

3 Formal Semantics for Symbouletics

I will formulate the semantics for *stoit* using the framework for performative meanings developed in Condoravdi and Lauer (2011) and Condoravdi and Lauer (2012). I will now informally introduce that framework. A more formal exposition is provided in the works cited.

Two crucial notions of Condoravdi and Lauer's framework are *effective preference* and *public commitment*. Generally, people may have many various preferences. Those need not directly cause the agent to undertake any action. For example, I might prefer to be on the Hawaii islands just now, but there could be more important preferences of mine that override that one, and thus I won't take any practical steps towards getting to Hawaii. Importantly, as long as I need not act upon a set of preferences, my preferences need not be consistent. If I'm not going to decide whether to go to the movies or to read a book, I can prefer either option equally strongly. But if I need to choose what to do, I'd have to prioritize and select which preference I value more. We introduce the term *effective preference* to refer to preferences that directly guide actions: by its definition, to have an *EP* (=effective preference) for q is to have such a structure of preferences that q is a top priority in it, and there are no conflicting priorities of the same top rank. In other words, if I have an *EP* for q and I'm a rational being, then I will act towards achieving q .

The notion of *public commitment* arises in interpersonal interaction. I may have whatever preferences I like unbeknownst to you. But I may also publicly announce that I have a particular preference — or a particular effective preference, *EP*. A public announcement of an *EP* effectively commits me to particular actions, in the following way. As almost any statement, my announcement of *EP*(p) may be false. It will be false precisely when I don't actually have an effective preference for p . That, in its turn, will visibly manifest itself in my actions that do not lead towards p . So my statement of *EP*(p) will be found out to be false if I don't actually behave as if I value p more than any possible alternative. In particular, it will happen if I actively work towards $\neg p$, or do not care enough about $\neg p$ happening because of my inaction. Thus if I want my public announcement of *EP*(p) to be true, I will have to act in a particular way. So even though the announcement concerns my state of mind at the current moment, it at the same time restricts what I should do in the future. The public announcement of an *EP* is a promise about my actions.⁷

Having defined our crucial analytical notions, we can finally turn to the semantics of natural language expressions. In accounting for the behavior of performative verbs, it is a challenge to define their semantics so that it causes a performative effect when occurring in some contexts (e.g. *I promise to come*), while in others (e.g. *I promised to come*) it simply describes the facts, but does not create new ones.⁸ Effective preferences and public announcements allow Condoravdi and Lauer to answer that challenge in the following way.

The semantics of performative words is defined in terms of effective preferences. As such, that semantics is internally descriptive: it simply states the facts regarding people's mental states. However, when a person makes the public announcement that she currently has an *EP*,

⁷What about regular assertions that are not about effective preferences? In Condoravdi and Lauer (2011)'s framework, a simple assertion of p is analyzed as a public commitment to a belief in p (or knowledge that p , or whatever else your favorite norm for assertion requires).

⁸Except, of course, for the facts that arise as the result of any assertion being made — e.g., the fact that the speaker uttered something, and so forth.

the commitment to an *EP* entails being committed to certain practical actions in the future, as we described above. Even though the semantics itself is descriptive, the *EP*s described by it, if they truly exist, will inevitably cause certain actions. Thus publicly committing to one's own *EP*(*p*) creates the performative effect: a state that is asserted to exist can only be truly present if the speaker's future actions are towards *p*, the object of the described *EP*. To put this in a different way, the performative effect arises when an individual controls the actions that determine whether an *EP* actually existed. Consequently, when we describe other people's *EP*s (or our own *EP*s in the past), no performative effect arises: for our statement to be true, the actions by other people (or our own actions in the past) must be in a particular way, and we cannot directly affect that.⁹

Here is how this works for commissives (promises) and directives (orders): I adapt the analysis of Condoravdi and Lauer (2011) in (33) and (34). A *commissive* describes an *EP* for the subject of the performative verb towards *p* denoted by the embedded clause. If I commit to an *EP* for *p*, but then do not work towards *p*, I must have lied. So the truth conditions of my utterance of (33a) are such that it is only true if I act in a certain way, namely towards *p*. My promise that *p* is only true if I actually do my very best to achieve *p*.¹⁰

(33) **Commissives:**

- a. *I promise that p.*
- b. $[[\text{promise}]] = \lambda p \lambda x . EP(x, p)$
- c. $[[\text{(33a)}]] = EP(sp, p)$, where *sp* is the speaker
- d. Asserting (33a) makes *sp*'s *EP* a public one, abbreviated *PEP*. The *PEP* constrains future actions by *sp*: if *sp* doesn't act towards *p*, that makes (33) false.

The meaning of a *directive* is a bit more involved: it describes an *EP* on the part of the subject towards the object uptaking an *EP* towards *p*. In other words, it is stated that it is among the subject's top priorities that the object start working towards *p*. When we say past-tense *Ann ordered Bill to submit the report tomorrow*, we are simply describing the situation in terms of the effective preferences of its participants. But when we say (34a), by publicly committing to an *EP* we undertake particular practical obligations.

(34) **Directives:**

- a. *I order you to q.*
- b. $[[\text{order}]] = \lambda p \lambda y \lambda x . EP(x, EP(y, p))$
- c. $[[\text{(34a)}]] = EP(sp, EP(\text{hearer}, q))$

⁹What about the cases where a performative is issued on behalf of another person? E.g., an ambassador might sign a treaty or make an oath on behalf of the queen. In such cases, the performative effect arises for the queen, not the ambassador, and that happens because the power to make public announcements regarding certain types of our effective preferences may be delegated to others.

¹⁰The semantics of English *promise* is surely more involved than (33c). First, it is usually presupposed that the person making a promise that *p* can actually make *p* happen. This component is not represented in (33) at all. Second, there are different verbs of promising, including *swear*, *vow*, etc., and it is expected that they would all have slightly different semantics. Future work should show what kind of micro-differences between different promise verbs actually obtain, and how they may be formally captured. What the analysis in (33) is intended to be is a template highlighting the crucial part of any commissive's semantics rather than the semantics of a particular lexical item. When we turn to the semantics of *symboletics*, we will distinguish between the semantics for *stoit* as a particular lexeme and the core *symboletic* semantics which forms a part of *stoit*'s meaning that I take to be common to all *symboletics*.

- d. Asserting (34a) commits *sp* to an *EP* for the hearer to commit to *q*; if *sp* has authority to make orders to the hearer, that is enough to actually constitute an order.

Thus in Condoravdi and Lauer (2011)'s framework, all performatives are essentially promises. Promises proper are the simplest kind because they commit the agent to an *EP* towards the proposition directly denoted by the clausal complement. Directives are more involved as they are promises to do everything possible to make the object to act towards the *p* expressed by the embedded clause.

With the framework in place, I turn to formulating the new semantics for Russian *stoit* within it. I propose that the word's semantics consists of two asserted conjuncts, given in (35a); one idiosyncratic scope constraint, in (35b); and one non-assertive condition of uncertain nature, in (35c). I will explain each component in turn, starting with definitions for *best* and *advise* used in (35a). For simplicity I will leave out the temporal indices until we reach the discussion of (40) and (41).

(35) **Formal analysis of *stoit*:**

- a. $[[\textit{stoit}]] = \lambda p.\lambda t.\lambda x.\exists t' > t : \textit{best}(x, p(t'))(t) \wedge \textit{advise}(SU, x, p(t'))(t)$,
where *SU* (from *SU*ggest-er) is the subject in a matrix context
and the attitude bearer under attitudes.
- b. *stoit* always scopes over the clausemate negation.
- c. To believe in '*stoit*(*x*, *p*)', one has to believe that it is in *x*'s power to influence whether *p* will be actualized or not.

I use *best*(*x*, *p*) as a primitive predicate standing for '(proposition) *p* is best for agent *x*'. The notion can be formalized further, but I do not see a direct benefit from that for our understanding of *stoit*'s semantics. The direct assertion of *best*(*x*, *p*) is what explains the **Subject Benefit** property discussed in the previous section, and one half of **Partial Rejection**. As asserting *best*(*x*, *p*) is not self-fulfilling in any way, that conjunct can be targeted by a responder in the same way as any other asserted proposition. Hence if the addressee believes that *best*(*x*, *p*) is false, she may properly disagree with the speaker, as can be seen in (26b).

I do not take *best*(*x*, *p*) to be a part of the symbouletic semantics proper. The reason for that is that English symbouletic '*d better*' doesn't seem to contain such a meaning component. Namely, the symbouletic in (36) does not normally allow a response with, while a simple assertion of relative goodness (37) can be rejected that way.¹¹

- (36) *Mary*: You better go to that concert!
Ann: #You are wrong: I don't like the conductor.
- (37) *Mary*: It is better for you to go to that concert!

¹¹Of course, with some amount of creativity one can save the *You are wrong* response in (36). This is similar to what happens in the exchange in (i). In that dialogue, it is not that Ann is targeting Mary's imperative with her answer, and the imperative semantics surely does not include a hard-wired statement that the speaker of *Bring me X* needs *X*. Ann is simply targeting a proposition that she thinks is one of Mary's beliefs, and has caused Mary to issue the imperative.

- (i) *Mary*: Bring me that book, please!
Ann: #You are wrong: you don't really need it.

Ann: You are wrong: I don't like the conductor.

Formula $advise(SU, x, p)$ is the core symboletic meaning, formulated so as to encode the performative effect, as well as **Endorsement** and **Embeddability**. The definition I propose for $advise(SU, x, p)$ is as follows:

$$(38) \quad advise(SU, x, p) := EP(SU, \bigwedge_q best(x, q)) \rightarrow EP(SU, EP(x, p))$$

Let's consider the parts of (38). Formula $\bigwedge_q best(x, q)$ simply refers to the proposition containing all and only worlds where all best things for x are actualized. We can paraphrase that formula as 'all that is best for x '. Thus $EP(SU, \bigwedge_q best(x, q))$ means ' SU prefers all that is best for x , and moreover is going to act to achieve that'. This formula serves as the antecedent of the conditional that forms $advise(SU, x, p)$, so the whole definition says that *if* it is the case that SU has an EP for what is best for x , then the consequent is true.

Turning to the consequent $EP(SU, EP(x, p))$, it is essentially the meaning of a directive, as we saw in (34) above. Now we can paraphrase the conditional as a whole: 'if SU worked in the best interests of x , SU would have tried all in her power to get x to work towards p '.

This formalization of what it means to advise x to do p does not say that the adviser, SU , is *actually* doing everything they can to achieve what's best for x . In fact, in most real-life advice situations, that would not be true: the adviser may be willing to provide advice, but not to give up on all of their other top interests in order to achieve what's best for x . Thus our definition only says that *if* the adviser were to do so, *then* one of the topmost things on her list of priorities would be getting x to work towards actualizing p . Under this analysis, by issuing advice the adviser does not directly commit herself to any *immediate* action — but she does make a *conditional* commitment.

As $advise(SU, x, p)$ is strictly weaker than $order(SU, x, p)$ (which is equal to $EP(SU, EP(x, p))$, cf. (34)), issuing advice may lead to a scalar inference. For example, you can order the child to go to bed. If instead of that you only suggest that she goes to bed, you may then be taken to have implicated that you will not (yet) do all you can to get the child to bed — as would have been the case had you issued a directive. This prediction of our semantics agrees with the intuitions.

At the same time, if it is clear in the context that you are doing all in your power to fulfill the child's best interests (as you understand them) — for instance, if you are positively glowering when making your suggestion — then a directive and a symboletic are predicted to collapse. Again, this seems to be what happens: '*You stoit go to sleep*' or '*You'd better go to sleep*' from a glowering parent comes close to downright telling the child to (go brush her teeth and) go to bed already.

The property **Endorsement** is explained as follows. $advise(SU, x, p)$ entails that as far as the suggester can tell, p is good for x . In a normal situation, the suggester is providing advice in the addressee's interests, even if not committing to an EP for those. So it would be weird for her to suggest or issue a directive or an imperative for the opposite of p after giving advice for p . This explanation makes the following prediction: when the context determines that the suggester is *not* concerned with x 's benefit, a directive for x to actualize $\neg p$ should become OK. This is indeed what happens: while (27) is bad out of the blue, it starts to sound better if the context makes it clear that the suggester does not value the suggestee's interests very much, as in (39):

(39) *Context: the speaker runs a sweatshop bakery, and the addressee is his employee. In the*

past, the speaker didn't care a bit about making the employees happier.

Tebe stoit ispeč pirog, no ne delaj etogo. (Ja xoču, čtoby ty ispek pečenje, xotja
 you STOIT bake pie but not do that I want that you bake cookies though
 tebe eto i ne nravitsja.)
 YOU.DAT that PART not like

≈ '(Given your interests,) you should have baked a pie, but don't do that. I want you to make cookies, even though you don't like doing that.'

As for **Embeddability**, our semantics accounts for it because of the very fact that nothing in it precludes embedding. Just as performative verbs, symbouletics have no semantic reasons to be non-embeddable. Consider (40) and (41), the meanings that our semantics derives for the two examples with embedded *stoit* that we considered above.¹²

- (40) a. (29) in quasi-Russian: 'Stoit I register for that class?'
 b. $[[[(29)]]] = \{\exists t' > now : best(x, p(t'))(now) \wedge advise(addr, x, p(t'))(now),$
 $\forall t' > now : \neg best(x, p(t'))(now) \vee \neg advise(addr, x, p(t'))(now)\}$

The question denotation in (40b) has two propositions in it. The first of them is that it is good for the speaker to register, and that if the addressee were to act in the speaker's best interests, she would make her register. The second proposition is that there is no such moment in the future where having registered would be good for the speaker, or the addressee's working in the speaker's best interests would entail getting the speaker to register. If the addressee resolves the question, that would make it clear whether she advises the speaker to register or would refrain from that. This is indeed what the intuitions about the original question are.

The case of *stoit* embedded under an attitude verb and a past tense is technically more complicated, but again, the predictions of our analysis match the intuitions without any additional assumptions:

- (41) a. (30) in quasi-Russian: 'Masha now thinks that Anya **stoit.PAST** go there'
 b. $[[[that Anya stoit.PAST go there]]] = \lambda t. \exists t_{past} < t : \exists t' > t_{past} :$
 $best(Anya, go(Anya)(t'))(t_{past}) \wedge advise(SU, Anya, go(Anya)(t'))(t_{past})$
 c. $[[[(30)]]] =$ in every world compatible with Masha's beliefs at t_{now} , it is true that:
 $\exists t_{past} < t_{now} : \exists t' > t_{past} : best(Anya, go(Anya)(t'))(t_{past}) \wedge$
 $\wedge advise(Masha, Anya, go(Anya)(t'))(t_{past})$

In (41c), Masha's belief worlds are those worlds that she considers possible at the current moment t_{now} , given all her information. In all of those worlds, it was objectively best for Anya at a past time t_{past} to go there at some later time t' (and we do not know whether t' is earlier or later than t_{now}). Furthermore, in all of those worlds, if Masha were to adopt an *EP* for Anya's best interests at that past moment, it would have followed that she would, at the same t_{past} , urge Anya, or order her if she had the authority, to go there. So the facts that determine what is best for Anya and what Masha would have done were she to act in Anya's best interests, are

¹²In questions with *stoit*, *SU* is resolved as the addressee. This is parallel to how other shiftable elements shift towards the addressee in questions. If *embeddability-question* is used as a question to oneself, which it can be, then the addressee of the question is the same as the speaker.

determined from the past temporal perspective. That perspective is forced by the past tense in the embedded clause. However, what exactly those facts were at that time in the past is determined from Masha's present point of view: it is an assessment of the past facts that is made from the present. The perspective of that assessment is provided by the tense on the matrix attitude verb. Finally, the going event is placed in the relative future from t_{past} , in accordance with the normal future orientation of *stoit*. Thus the interplay of the attitude semantics, the embedded past tense, and the temporal orientation of the modal make three temporal parameters relevant in (30), repeated in (41).

As we have just seen in (40) and (41), the proposed meaning for *stoit* embeds easily as far as the semantics goes. This concerns both the meaning as a whole, and the specifically symbolietic part $advise(SU, x, p)$. Nevertheless, symbolietics often do not embed easily: for instance, English ('d) *better* cannot appear in the past tense. I conjecture that all such restrictions should not be accounted for in the core symbolietic semantics: the variation between different symbolietics regarding embeddability is significant without clear evidence that it follows directly from the semantics. For example, it is not clear what exact semantic property could prevent ('d) *better* from appearing in the past tense, while *stoit* can. At the same time, such restrictions may often be explained from the properties of the constructions that served as diachronic sources for symbolietics. For example, given that the source for ('d) *better* was a past tense construction *had better*, it is not surprising that even the form without *had* or 'd cannot cooccur with the past tense in Present-Day English, even though semantically that would have been fine.

Similarly, **Scope over Neg** requiring *stoit* to scope over clausemate Neg does not follow from the semantics. The missing reading $NEG(stoit(addr, NYC))$ for (31) would be as follows:

$$(42) \quad \forall t' > now : \neg best(addr, NYC(t'))(now) \vee \neg advise(sp, addr, NYC(t'))(now)$$

This is a perfectly normal reading: it simply says that either going to NYC is not in the addressee's best interests, or the suggester would not go as far as do all in her power to get the addressee to go to NYC even if she worked for the addressee's best. Given that there is nothing wrong with this meaning, I propose to analyze **Scope over Neg** as an idiosyncratic constraint of *stoit*, given in (35b).

Finally, let us turn to the condition (35c), repeated here as (43):

$$(43) \quad \text{To believe in 'stoit}(x, p)\text{'}, \text{ one has to believe that it is in } x\text{'s power to influence whether } p \text{ will be actualized or not.}$$

The way (43) is formulated, it is very close to the presupposition that it is in x 's power to influence whether p will happen. However, it is not easy to tell whether we are dealing with a presupposition, an entailment, or some sort of implicature. For example, the condition that x should have (at least some) power over p seems to project as a presupposition: (44) as a whole does not presuppose that it's up to the addressee whether to get a job.¹³

$$(44) \quad \text{If it is under your control whether to get a job, then you } \mathbf{should} \text{ get a job.}$$

Similarly, the condition in (43) passes the "wait a minute" test by von Stechow (2004), as presuppositions would:

¹³This is shown with English *should*, with the assumption that the modal is read symbolietically. The facts for *stoit* are the same.

- (45) *Ann*: You **should** get a job!
Mary: Wait a minute. It's not up to me — in fact, I'm very actively looking for one.

However, that x should have control over whether p happens may also be deduced from the fact that x 's *EP* towards p is being discussed in the first place. After all, it doesn't make sense to have $EP(p)$ if you have no control over p . We can compare the behavior of *stoit* and *symbolletic should* to that of directives:

- (46) *Context: the addressee cannot get to the top of the hill because the only road is blocked, and there is no other way.*
 #I order you to get to the top of the hill!
- (47) If you can get to the top if you try hard enough, then I order you to get to the top.
- (48) *Ann*: I order you to get to the top of the hill!
Mary: Wait a minute. That's impossible. Nobody can do that.

Does this behavior of *order* mean that it presupposes the feasibility to actualize p on the part of x ? It is not obvious, to say the least.

Returning to (43), logically we have (at least) three possible formal analyses. (i) *stoit*(x, p) may trigger the presupposition that x has influence over whether p is actualized. (ii) *stoit*(x, p) may implicate that the suggester believes that x has influence over whether p happens. The implicature would be derived as follows: if the suggester hadn't believed that, the suggestion would have been unrealizable, and thus it would have made no sense to make it. (iii) Finally, one can argue that reasoning similar to the one just sketched derives a direct entailment rather than an implicature. If we adopt reasonable assumptions regarding the consistency of people's mental states, it would follow from the fact that y believes *advise*(y, x, p) that y believes that x 's actions affect whether p happens. Personally, I find the last option most promising, but at the moment I cannot tease the three apart with certainty.

4 Conclusion: Symbolletics within the Modal System

In this paper, I have argued for the existence of a special semantic subtype of modality: *symbolletic modality*, or, informally, the modality of advice and suggestion. The two related crucial properties of *symbolletics* are: (i) *symbolletic* statements, unlike other modal statements, may be reported with attitude verbs such as *suggest*, *advise*, and *recommend*; (ii) *symbolletic* statements in the present tense and in a proper context have a (partially) self-fulfilling effect, and therefore cannot be challenged.

I provided the semantics for *symbolletics* in general and for Russian *symbolletic stoit* in particular within the framework of effective preferences and public commitments by Condoravdi and Lauer (2011) and Condoravdi and Lauer (2012). The core *symbolletic* semantics is given by the predicate *advise* as described in (38). Informally, it amounts to the following: "If the suggester's top priority were the suggestee's well-being, the suggester would have made everything possible to make the suggestee to commit to working towards the said proposition". When this meaning is asserted in the present tense and by a person who may speak for the suggester, a performative effect is created: the speaker obliges the suggester to back up the statement with practical actions in case she works in the suggestee's best interests. When the same meaning is embedded, no performative effect arises, and such statements only describe the suggester's mental state. As the proposed *symbolletic* meaning is strictly weaker than the

meaning of a directive such as *I order you to p*, we predict that symbouletics may give rise to the implicature that the directive would have been inappropriate, which fits the data.

I have also provided an analysis of the Russian specialized symbouletic *stoit*. The semantics of that modal consists of: (i) the core symbouletic semantics; (ii) the assertion that the suggested proposition is of direct benefit for the suggestee. In addition, *stoit* obeys the constraint that requires it to scope over the clausemate negation if there is one. Finally, when *stoit*(*x, p*) is used, the suggester needs to believe that the suggestee has some control over whether the suggested proposition is actualized.

What is the place of symbouletics in the larger modal system, and what kinds are there? Divided by their diachronic source, we can identify at least the following types, : (1) deontic-source symbouletics, as English *should* and *ought*; (ii) expressions of cost and worth, including Russian *stoit*, Polish *warto* ‘worth’ and cognate Ukrainian *varto* ‘worth’, and Finnish *kannattaa* ‘to be profitable, to pay off’; and (iii) expressions of relative goodness, as English (*'d*) *better*.

For modals, it may be not easy to determine when exactly they acquire symbouletic meanings. For example, Bosworth and Toller (1898)’s meaning II.4 for Old English *sculan* (> modern *shall*) already features some uses classified by the authors as “bidding, commanding”. But as a true deontic may in principle give rise to a symbouletic meaning via an implicature, as in (49), an examination of primary evidence is needed to determine how early symbouletic meaning for *shall/should* started to appear.

(49) You must do *p* because you’re obliged to \Rightarrow (*implicature*) You better do *p*.

In Yanovich (2013:chap. 5.4), I showed that at least in some cases it is possible to determine the period when a word becomes a symbouletic. I analyzed the rise of symbouletic *stoit* using the Russian National Corpus, www.ruscorpora.ru, and found the following trajectory of modalization (below I provide English quasi-translations for the historical Russian examples):

(50) **The rise of symbouletic construction ‘(X.DAT) *stoit* INF’:**

a. **Prehistory:**

- Non-metaphorical statements about cost:
‘[This book].NOM *stoit* (=costs) [two roubles].ACC’
- Metaphorical statements about worth:
‘Here, [human dignity].NOM *stoit* (=is worth) nothing.ACC’

b. **Infinitival subjects and objects:**

- Subject infinitives:
(a1820) ‘But what.ACC did [lead.INF you to the victory](.NOM) *stoit* (=cost) us.DAT?’
- Object infinitives:
(1814) ‘You.NOM do not *stoit* (=worth) [to be in my circle (of friends)].ACC’

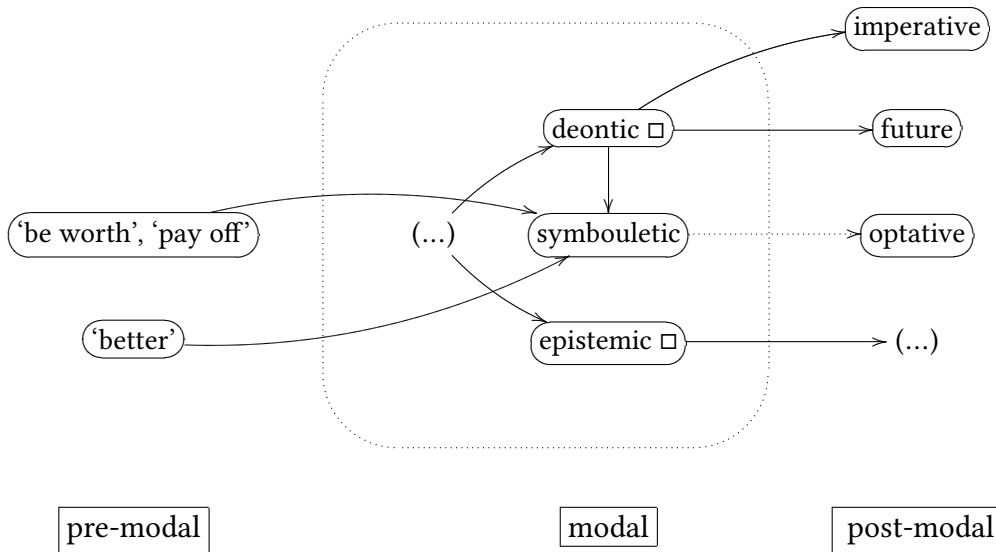
c. **Immediate precursors:** cost statements with overt or implied object DP “the effort”; may be taken to imply a symbouletic meaning:

(1833) ‘Exceptions are so rare that even [to mention them].NOM does not *stoit* (=worth) (the effort.ACC)’

d. **True symbouletic statements**, no longer compatible with object “the effort”:

(1915) ‘It would be good to ring the bells today!.. Which day is it? Wednesday?’

Figure 1
The place of symbouletics within the modal domain of meanings



If it's Wednesday, then *stoit* (= should) not...'

While in the mid-19th century, *stoit* could at best implicate a symbouletic statement, at the beginning of the 20th century examples occur where it can no longer be analyzed using its old meaning, as in (50d). The new modal first could only appear without a subject denoting the suggestee. But in the mid-20th century, *stoit* “picks up” a construction with a dative subject, very common for Russian modal words, resulting in the modern day pattern '(X.DAT) *stoit* INF'. The whole process of creating the new modal took no longer than a century.

The fact that symbouletics with very similar semantics (cf. Russian *stoit* and English *should* under its symbouletic meaning) may arise from quite different sources underscores their naturalness. Symbouletic meanings are a good fit for many practical situations, hence they are often implicated, and regularly grammaticalized. This makes them similar to other semantic types of modals: for example, ability modals commonly arise from verbs with meanings as seemingly dissimilar as ‘know’ (as happened to *can*) and ‘prevail’ (as was the case for *may*, which in Old English was an ability modal).

In the typological and grammaticalization traditions, it is common to draw ‘semantic maps’ of a particular grammatical domain, where adjacent meanings may be expressed by the same word in some languages, and arrows indicate attested trajectories of semantic change. I would like to close this paper with such a (simplified) map for necessity modality including symbouletics, as shown in Figure 1.¹⁴ More on semantic maps for modality may be found in Bybee et al. (1994), van der Auwera and Plungian (1998), Hansen (2004), and van der Auwera et al. (2009).

¹⁴The link to the optative is added on the basis of van der Auwera et al. (2013), who show that the marginal optative meaning of (*d*) *better*, as in “*It better be important. I hope it is*”, is diachronically recent, and thus likely stems from the suggestion meaning. As this has not yet been established firmly, the link is shown using a dotted arrow.

References

- van der Auwera, Johan, Petar Kehayov, and Alice Vittrant. 2009. Acquisitive modals. In *Cross-linguistic studies of tense, aspect, and modality*, ed. Lotte Hogeweg, Helen de Hoop, and Andrej Malchukov, 271–302. Amsterdam: John Benjamins.
- van der Auwera, Johan, Dirk Noël, and An Van linden. 2013. *Had better, 'd better and better*: diachronic and transatlantic variation. In *English modality: Core, periphery and evidentiality*, ed. J.I. Marín-Arrese, M. Carretero, J. Arús Hita, and J. van der Auwera, 119–153. Berlin: Mouton de Gruyter.
- van der Auwera, Johan, and Vladimir Plungian. 1998. Modality's semantic map. *Linguistic Typology* 2:79–124.
- Bosworth, Joseph, and T. Northcote Toller. 1898. *An Anglo-Saxon dictionary*. Oxford: Clarendon Press.
- Bybee, Joan L., Revere Perkins, and William Pagliuca. 1994. *The evolution of grammar: Tense, aspect and modality in the languages of the world*. Chicago: University of Chicago Press.
- Condoravdi, Cleo. 2002. Temporal interpretation of modals: modals for the present and for the past. In *The construction of meaning*, ed. David Beaver, Luis D. Cassillas Martinez, Brandy Z. Clark, and Stefan Kaufmann. Stanford: CSLI.
- Condoravdi, Cleo, and Sven Lauer. 2011. Performative verbs and performative acts. In *Sinn and Bedeutung 15: Proceedings of the 2010 annual conference of the Gesellschaft für Semantik*, ed. Ingo Reich, Eva Horch, and Dennis Pauly, 149–164. Saarbrücken: Universaar – Saarland University Press.
- Condoravdi, Cleo, and Sven Lauer. 2012. Imperatives: meaning and illocutionary force. In *Empirical Issues in Syntax and Semantics 9*, ed. Christopher Piñón, 37–58. <http://www.cssp.cnrs.fr/eiss9/>.
- von Fintel, Kai. 2004. Would you believe it? the King of France is back! (presuppositions and truth-value intuitions). In *Descriptions and beyond*, ed. Marga Reimer and Anne Bezuidenhout. Oxford: Oxford University Press.
- von Fintel, Kai, and Sabine Iatridou. 2005. What to do if you want to go to Harlem: Anankastic conditionals and related matters. Ms., MIT. Available at <http://web.mit.edu/fintel/www/harlem-rutgers.pdf>.
- Hansen, Björn. 2004. Vyráženije modal'nosti v berestjanyx gramotax [expression of modality in birch bark letters]. *Slavia* 411–422.
- Nuyts, Jan, Pieter Byloo, and Janneke Diepeveen. 2005. On deontic modality, directivity, and mood: A case study of Dutch *mogen* and *moeten*. In *Antwerp Papers in Linguistics*, volume 110, 1–56.
- Palmer, Frank Robert. 1990. *Modality and the English modals*, 2nd edition. London: Longman.
- Portner, Paul. 2009. *Modality*. Oxford University Press.
- Traugott, Elisabeth Closs, and Richard B. Dasher. 2002. *Regularity in semantic change*, volume 96 of *Cambridge Studies in Linguistics*. Cambridge University Press.
- Yanovich, Igor. 2013. Four pieces for modality, context and usage. Doctoral Dissertation, MIT, Cambridge, MA.

Universität Tübingen
 igor.yanovich@uni-tuebingen.de