Modality and speech acts: troubled by German *ruhig*

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Abstract. The paper aims to explain the distribution and effect of the German modal particle *ruhig*. It is argued to be licensed only in utterances that induce a particular change in the contextual settings with respect to the status of a particular possible future course of events.

1 Introduction

1.1 Modal particles in German

German makes abundant use of modal particles, especially in spoken discourse. While rarely obligatory, they often render utterances more natural. Most modal particles are tied to particular clause or speech act types. Therefore, it is often argued that they modify or specify the speech act (to be) executed (e.g. Zeevat 2003, Karagjosova 2004). Characteristically, their particular semantic or pragmatic contribution is very hard to pin down. In this paper I focus on the German modal particle *ruhig*, which has gained less attention than e.g. *ja, doch* or *wohl* (cf. Zimmermann t.a.). I consider *ruhig* particularly interesting in that its distributional restrictions raise far reaching questions about the relation between modality and speech acts, as well as some core-distinctions in the realm of modal verbs (i.e., universal vs. existential modal force; performative vs.descriptive; strong vs. weak necessity).

1.2 The friendly particle

When *ruhig* is added to a sentence, we mostly obtain a flavor of reassurance, roughly 'no worries'. Typically, the resulting sentences are used as permissions or recommendations. Examples are given in (1) and (2):

(1) *Du kannst/solltest* ***ruhig*** *weiterschlafen.*
you can/should RUHIG sleep.on
'You can/should just go back to sleep, no worries.' [declarative]

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(2) *Schlaf* ***ruhig*** *weiter.*
sleep.IMP RUHIG on
'Just go back to sleep, no worries.' [imperative]

In their written form, these sentences are ambiguous in that they could also contain the homophonous adverb *ruhig* 'calm, quiet, composed,...' from which the particle is derived. The two items are distinguished prosodically, as the particle is always unstressed. Moreover, many examples are unambiguous thanks to word order. In the following, I'm concerned exclusively with the particle. If there is ambiguity in the written form, grammaticality judgements pertain to the realization of *ruhig* as a particle. As the contribution of the particle ('no worries') seems closely related to the adjective/adverb one might wonder if the particle could semantically be equated to the adverb, contributing 'in a quiet way'/'without worrying'. But such an interpretation fails to account for the intricate pattern of distributional restrictions (discussed in 1.3). In many cases, such a contribution is also inadequate in either scopal relation with a co-occurring modal operator.

1.3 *ruhig* is picky after all

ruhig imposes two sorts of restrictions on the contexts of its occurrence. On the one hand, a formal restriction: the particle seems to occur exclusively in sentences that contain possibility modals or in imperatives.[1] On the other hand, a functional restriction: sentences containing the particle *ruhig* are used mostly for permissions or recommendations, but e.g. not for commands, assertions, or questions. The only formal analysis of *ruhig* proposed so far, Grosz (2009a, 2009b), starts out from the form side. In the following, I discuss his approach and argue that the formal restrictions are more intricate than what he assumes. I sketch an alternative account that starts out from the functional restriction. More work needs to be done to understand all details of the contribution of *ruhig*, but I hope to show that this strategy is more promising.

2 *ruhig* lizenced by a possibility operator

2.1 *ruhig* and modal concord (Grosz 2009a, 2009b)

In declaratives, *ruhig* seems to require the presence of a possibility modal. (3) contains *kann* 'can' and is acceptable; both (4) containing the necessity modal *muss* (roughly, 'must') and the unmodalized declarative (5) are unacceptable.[2]

(3) *Du kannst* ***ruhig*** *weiterschlafen.*
you can RUHIG sleep.on
'You can just go back to sleep, don't worry.' ◊-modal

[1] **declarative, interrogative** and **imperative** are understood as clause types, i.e. sentential form types with prototypical functions, Sadock and Zwicky (1985).

[2] For the moment, I do not want to make a case as to which grammatical level causes the violation. Crucially, it is not possible to come up with context of use in which the sentence would be acceptable.

(4) *#Du musst **ruhig** weiterschlafen.*
you must RUHIG sleep.on □-modal

(5) *#Du schläfst **ruhig** weiter.*
you sleep RUHIG on unmodalized declarative

Grosz concludes that this is an instance of modal concord. Two elements that match in modal force can sometimes give rise to a reading on which apparently only one of them is interpreted. The sentence in (6) contains a modal verb and a modal adverb that both express possibility. It can be interpreted either surface-compositionally with one modal operator in the scope of another (**doubly modal reading** in (6-a)), or as if there was just one modal element present (**modal concord reading** in (6-b)).

(6) *You **may possibly** be familiar with my story.*
a. 'It is possible that you are allowed to be familiar with my story.'
doubly modal reading
b. 'It is possible that you are familiar with my story.'
modal concord reading, standard view

No matter if the cancellation happens in syntax or in semantics, *ruhig* is interpreted as a test on whether it co-occurs (locally) with a modal verb of possibility. More recently, Grosz (2009b) argues that modal concord does not amount to a simple cancellation of one of the modal elements, but that they jointly express a high degree of possibility (or necessity). On this view, the modal concord reading has to be paraphrased as in (7).

(7) 'It is very possible that you are familiar with my story.'
modal concord reading, gradable modality view

ruhig is thus claimed to - roughly - turn 'possible' into 'very possible'. It is not entirely clear to me if this captures the intuitive 'no worries'-meaning of the particle. Yet, my main objection against a treatment in terms of modal concord is that the restriction of co-occurrence with a possibility modal is too strong. Before going into that, I would like to point out two issues that have to be added independently to the modal concord approach.

2.2 Addenda for modal concord

First, *ruhig* can never co-occur with epistemic possibility modals.

(8) *#Dieser Student könnte **ruhig** Peter sein.*
this student could RUHIG Peter be
intended: 'This student could be Peter, no worries.'

It seems that *ruhig* can only occur with modals that express possibility with respect to preferences or goals (deontic or teleological modality, cf. Kratzer 1981).

Second, *ruhig* does not occur in interrogatives, even if they contain a possibility modal of the right flavor:

(9) *#Kannst du* ***ruhig*** *weiterschlafen?*
can.2SgInd you Ruhig sleep.on

Principles that take care of these two observations can easily be added to the modal concord analysis. Yet, we will see that the analysis faces independent problems. The alternative analysis in section 3 offers a straightforward account of the incompatibility of *ruhig* with epistemic modality, as well as its absence from interrogatives.

2.3 Problems with modal concord

A question of modal force Grosz (2009a,2009b) claims that *ruhig* can never appear with necessity modals. Yet, *ruhig* often occurs with the modal verb *soll* (roughly 'shall'/'should') as well as in imperatives. Both are not standardly assumed to constitute or contain possibility modals. *soll* is usually considered a necessity modal (Kratzer 1981), but this is not undisputed: Ehrich (2001) argues that *soll* is truly ambiguous and is, on its weak reading, interpreted as a possibility modal.[3] For the presence of a modal operator in imperatives, Grosz draws on Schwager (2006), who argues that imperatives contain an operator that is interpreted like a necessity modal, so:

(10) *Go home!* ≈ *You should go home!*

This forces her to give a pragmatic account of **permission-imperatives**, i.e. imperatives that seem to constitute less an effort to get the addressee to do something, but rather open up the possibility for him to do so.

(11) *Take a cookie (if you like).*
a. ≈ 'You can take a cookie (if you like).'
b. ≉ 'You should take a cookie (if you like).'

Schwager (2006) argues that this effect can and should be dealt with in pragmatics (cf. also Portner 2007).[4] In contrast, Grosz argues that the modal operator in imperatives is semantically ambiguous between possibility and necessity. Moreover, for *sollen*, he argues that it passes Horn's (1972) **tolerance test**. Conjunctions of possibility modals with contradictory prejacents (cf. (12-a)) give rise to consistent modal states of affairs, while conjunctions of necessity modals with contradictory prejacents (cf. (12-b)) give rise to contradictory states of affairs.

(12) a. You may A and you may ¬A.

[3] Önnerfors (1997) argues that, in particular, all verb-first declaratives involving *sollen* as the main verb require an interpretaion of *sollen* as possibility.

[4] Actually, her story is more complex, as the necessity operator present in the imperative clause consists in exhaustified possibility. Nevertheless, this is relevant only in cases where exhaustification is blocked by elements like *zum Beispiel* 'for example'. In the absence of such elements imperatives contain a (complex) necessity operator and are thus not expected to licenze *ruhig* on the modal concord approach.

b. #You have to A and you have to ¬A.

According to Grosz (2009a), *soll* can behave like a possibility modal. This is contradicted by the data in Ehrich (2001) as well as the judgments of all ten native speakers I consulted.[5] Grosz does not test imperatives, but they fail likewise, cf. (13-a). This cannot be blamed on the performativity of the imperative: explicit performatives that constitute permissions pass the test as expressions of possibility, cf. (13-b). (For more natural utterances, with $B \subseteq \neg A$.)

(13) a. #*Come in by the front door and come in by the back door (it's up to you, really).*
b. *I hereby allow you to come in by the front door, and I hereby allow you to come in by the back door.*

The German equivalents of (13-a) and (13-b) behave analagously.

Absence of modal operator On closer examination, *ruhig* can even occur in sentences that do not seem to contain any modal operator at all. First, consider the free relative in (14): there is no modal verb and both finite verbs are marked present indicative.

(14) *Wer also eines der Hefte haben will,*
who therefore one of.the booklets wants.PRESIND, writes.PRESIND
schreibt ***ruhig*** *schon mal eine Email.*
RUHIG already PRT an email
'Who wants to have one of the booklets should simply write an email.'

Second, *ruhig* often occurs in subsentential constituents that are inserted in parenthesis and spell out how the details of a particular plan (presented in present indicative) could be filled out.

(15) *Du gehst einfach zu O2 (****ruhig*** *schon 2 Wochen bevor*
you go.PRESIND simply to O2 (RUHIG already 2 weeks before
dein Vertrag abläuft), schilderst denen das, dann
your contract expires), explain.PRESIND to.them that, then
geht das mit der Rufnummernmitnahme.
works.PRESIND that with the take-number-with-you
'You simply go to [the mobile phone company] O2 (RUHIG already 2 weeks before your contract expires), you explain it to them, and they'll let you keep your number.' [google]

[5] Ehrich assumes that *sollen* is ambiguous between expressing necessity and possibility. It is not clear to me how she intends to account for (i) (her (45a)), which she judges as unacceptable. The conflict is not addressed in her paper.

(i) **Du sollst den Rasen mähen und du sollst den Rasen nicht mähen.*
you shall the lawn mow and you shall the lawn not mow

Third, *ruhig* occurs in unmodalized declaratives that set up a plan for joint action:

(16) *Weißt du was? Du gehst jetzt* ***ruhig*** *schon mal in*
know you what? you go.PRESIND now RUHIG already Q-PART in
den Speisewagen, und ich komm nach, sobald der
the dining-car and I come.PRESIND VPART as-soon-as the
Schaffner die Tickets kontrolliert hat.
conductor the tickets controlled has
'You know what? (We do the following:) you go to the dining car and I follow you as soon as the conductor has controlled the tickets.'

Intermediate conclusions The distributional restrictions of *ruhig* cannot be explained in terms of modal concord with a possibility modal. *ruhig* occurs both with necessity modals and in the absence of modal operators as long as the sentences in question are used to guide future action.[6] This suggests that we should draw on the speech act theoretic side of the restriction. The idea is to endow *ruhig* with suitable restrictions on the speech act types/updates that can be performed with an utterance that contains the particle. The form restriction is then derived indirectly: sentences that cannot contain *ruhig* (e.g. *muss*-modalized ones) are sentences that cannot perform an update of the required type. To provide a formal account along these lines we have to bring together the semantics assigned to modalized declaratives with global notions relevant for speech acts (action alternatives, criteria for decision, ...). This is not without challenge as - in particular: non-epistemic - modal verbs are standardly interpreted pointwise.

3 Modeling utterance contexts for *ruhig*

3.1 Conditions on *ruhig*

I introduce a simplified notion of an **utterance context with a decision problem** as a quadruple $C = \langle s_c, a_c, CS_c, A^x{}_c \rangle$ where s_c is the speaker, a_c is the addressee, CS_c Stalnaker's (1978, 2002) context set, i.e. the set of worlds compatible with mutual joint belief of s_c and a_c. A^x_c is a set of possible future courses of events (here, a set of propositions) that constitute a salient decision problem for some agent(s) x. Moreover, CS_c determines a set of criteria K_c that are known to constitute x's criteria for deciding among A^x_c. Given a precontext C, update with an utterance ϕ (written $C + \phi$) results in a postcontext $C' = \langle s_{c'}, a_{c'}, CS_{c'}, A^x_{c'} \rangle$, where $s_{c'} = s_c$, $a_{c'} = a_c$, $A^x_{c'} = A^x_c$, and $CS_{c'} = CS_c \cap [\![\phi]\!]^c$ iff $[\![\phi]\!]^c$ is defined.[7]

[6] If Kaufmann's (2005) modal analysis of the English simple present were extended to German, the examples in (14)-(16) may not be unmodalized. But they would still contain a necessity operator and should thus not license the presence of *ruhig*.

[7] This is a simplification: the set of salient available actions A^x could change as well; also, the context set should consist of world-assignment pairs to capture standard dynamic effects. My representation is inspired by Davis (t.a.), who proposes a similar

Solving the decision problem means to establish a single $\alpha \in A_c^x$ as optimal. An action α is optimal in C iff it is optimal at all worlds in CS_c. Optimality at a given world is spelt out in terms of Kratzer's (1981) framework of graded modality that relies on two parameters,

- a **modal base**, e.g. $f : W \rightarrow (W \rightarrow T)$ that assigns to w the set of propositions describing the relevant circumstances, and
- an **ordering source**, e.g. $g : W \rightarrow (W \rightarrow T)$ that assigns to w the set of propositions consituting the relevant preferences.

g induces the partial-order $<_{g(w)} \subseteq W \times W$ ('strictly better') in (17-a). Under the assumption that g is always finite, this allows us to define the set of optimal worlds w.r.t. w, f, and g as in (17-b):

(17) a. For all worlds w_i, w_j: $w_i <_{g(w)} w_j$ iff
$\{p \in g(w) \mid p(w_j)\} \subset \{p \in g(w) \mid p(w_i)\}$
b. The optimal worlds in w w.r.t. circumstances f and wishes g:
$O(f, g, w) := \{w_1 \in \bigcap f(w) \mid \neg\exists w_2 \in \bigcap f(w) : w_2 <_{g(w)} w_1\}$

As usual, *can* and *must* express compatibility and entailment w.r.t. $O(f, g, w)$. The pointwise notion of optimality can also be used to define optimality in a context C. For this, the relevant ordering source is fixed as $g_c = \lambda w.\lambda p.p \in K_c$. Moreover, in deciding one has to take into account all possibilities the world could be like, therefore, as a modal base, we use $f_c =$ 'λw.the relevant circumstances in w', where $\bigcup_{w \in CS_c} \bigcap f_c(w) = CS_c$.

(18) a. An action $\alpha \in A_c^x$ is **optimal** in context C iff
$(\forall w \in CS_c)[O(f_c, g_c, w) \subseteq \alpha]$.
b. An action $\alpha \in A_c^x$ is **locally optimal** in context C iff
$(\forall w \in CS_c)$
$[(\exists w_i \in \bigcap f_c(w) \cup \alpha)[(\forall w_j \in \bigcap f_c(w))[w_j <_{g_c(w)} w_i \rightarrow \alpha(w_j)]]]$.

ruhig occurs in contexts C where K_c does not suffice for x to resolve the issue of what course of events to chose from A_c^x. This lack of an optimal candiate can be due to a lack of knowledge about the facts or to conflicting preferences in K_c. The requirements of *ruhig* are spelt out by making it a partial identity function on the set of proposition that returns its complement α_{st} iff it occurs in a sentence ϕ whose LF is a sequence $[\psi_1[ruhig[\alpha]]\psi_2]$ (with ψ_1 and ψ_2 possibly empty) and $C +$ '$\psi_1\alpha\psi_2$' $= C'$ s.t.:[8]

analysis for Japanese *yo*. The similarity has been pointed out to me by an anonymus reviewer for *17th Amsterdam Colloquium*.

[8] In my implementation, the condition (t.a.) imposes on Japanese *yo* (his (23a)) reads as in (i) (with the difference that for him, A_c^x need not be $A_{c'}^x$:

(i) $(\exists \alpha \in A_{c'}^x)[(\forall w_i, w_j \in CS_{c'})[[\alpha(w_i) \& w_j <_{g'_c(w_j)} w_i] \rightarrow \alpha(w_j)]]$.

If this is correct for *yo* (cf. McCready 2006 for an analysis that does not display much similarity between *ruhig* and *yo*), at least two differences are to be observed:

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(19) a. $\alpha \in A^x_C$ and $\alpha \in A^x_{c'}$
b. α is locally optimal in C
c. α is optimal in C'

We can now see why *ruhig* occurs in permissions: permitting α requires that the addressee is (taken to be) interested in realising α, but also in not violating the rules (Searle 1969). Therefore, as long as either, α is prohibited, or it is unkonwn if α is prohibited, α cannot be optimal. An utterance like (20) (without *ruhig*) rules out worlds at which following the rules and having a cookie are incompatible. This is why *ruhig* is acceptable.

(20) *Du kannst dir von mir aus ruhig ein Keks nehmen.*
you can yourself by me of RUHIG a cookie take
'You can take a cookie, no worries.'

In the absence of *ruhig*, the possibility modal could also be understood teleologically, and would then express a trivial truth: if we evaluate it at w' s.t. having a cookie is permitted, the best worlds are worlds where the addressee has a cookie and follows the rules. If we evaluate it at w'' s.t. having a cookie is prohibited, the best worlds are partioned into ones where she has a cookie (but violates the rules) and ones where she follows the rules (but doesn't have a cookie). Therefore, at both w' and w'', the optimal worlds have a non-empty intersection with having a cookie. The update does not eliminate any worlds, therefore $CS_c = CS_{c'}$, taking a cookie is not globally optimal in C' and *ruhig* is not licensed. Although it is not absolutely clear what governs the interpretation of contextual parameters of modal verbs (we can think of them as of covert pronouns), the pressure for a consistent interpretation is clearly a deciding factor. From this it follows immediately that, while *ruhig* does not tinker with the truth-conditions themselves, it can in many contexts help to trigger a particular ordering source (here, speaker deontic rather than hearer teleological).[9] Updates that constitute recommendations, plans and suggestions work slightly differently. For reasons of space I cannot discuss further examples.[10]

(*a*) unlike *ruhig*, *yo* does not require α to be mentioned in the sentence; (*b*) *ruhig* requires that α become globally optimal.

[9] Davis' requirement would make wrong predictions: e.g., an explicit prohibition to take a cookie removes all worlds where both preferences can be fulfilled simultaneously. Afterwards, (if nothing else is prohibited) both taking a cookie and not taking a cookie meet his condition (even if neither is globally optimal). Contrary to fact, *ruhig* would thus be predicted to be licensed in a prohibition.

[10] Note that the inacceptability of *ruhig* in interrogatives, even if used as indirect speech acts, indicates that the update-conditions imposed by *ruhig* pertain to the minimal ('automatic') update and ignore additional effects as mediated by pragmatic considerations. I am indebted to Eric McCready (p.c.) for pointing this out.

3.2 The *must*-problem

Besides sentences containing *kann* 'can', also those containing *soll* 'shall' or imperatives can give rise to the required update effect, in particular when occurring in recommendations. Consider a scenario described by Grosz: a cable car is about to depart. A passenger wants to use the restroom, but is insecure if he can make it back in time. The conductor issues (21):

(21) *Gehen Sie ruhig noch auf die Toilette!*
go.IMP you.POLITE RUHIG still to the toilet
'Just go to the restroom (if you like).'

Apparently, CS_c contains worlds w' where the preference 'go to the toilet' is compatible with the goal 'reach the cable car', and worlds w'' where this is not so. By saying that all the optimal worlds according to the circumstances and preferences verify that the addressee goes to the toilet, the speaker rules out worlds at which the two events are incompatible. Clearly, in the post-, but not in the precontext going to the toilet has the status of a globally optimal action. Given that this *ruhig*-permissible update was achieved by a necessity modal, why is it that it could not be achieved by a sentence containing *must*? In principle, two lines of reasoning suggest themselves, both of which have to do with the question what (kind of) ordering sources are involved. First, von Fintel & Iatridou (2008) point out that **weak necessity modals** like *ought* and *should* (historical subjunctives) differ from **strong necessity modals** like *must* in that they involve two ordering sources of different status. Loosely speaking, one of them is not actually binding, but only counterfactually. This idea merits closer investigation. Second, Ninan (2005) considers *must* inherently **performative**[11] because it is infelicitous with follow-ups that indicate that the particular necessity will not be respected:

(22) *Sam {#must, has to} go to confession; but he won't go.*

This contrast could also be accounted for if we require that *must* comes with an ordering source g that is considered 'binding' (CS_c entails that all g-optimal events will be realised). In contrast, *ruhig* seems to require an ordering source for which it is not granted that it is being followed (e.g. the speaker's rules in the cookie case, the hearer's preferences in the cable car case). A satisfactory implementation of this, as well as an answer to why imperatives and *sollen* 'should' are nearly but not fully interchangable, have to await further insight into the nature of modal bases, and, in particular, ordering sources.

4 Conclusions

I have argued that the German modal particle *ruhig* imposes both formal and functional restriction on its contexts of occurrence. On the one hand, it has to

[11] Roughly, inducing a change in a modal state of affairs, rather than describing it.

combine with the description of a possible future course of events α s.t. α belongs to a set of contextuall given alternatives. On the other hand, *ruhig* has to occur in a sentence that gives rise to an update that renders α a globally optimal choice. Some of the problems discussed show that we need a better understanding of the parameters involved in the standard Kratzer semantics for modality.

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