LSA220 Modals
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Covert Modals? One particular case.

Section 1: Introduction

As we already saw in Session II, modals have also been argued to exist "covertly". That is, there are constructions that clearly contain a modal meaning, but there is no obvious lexical source for this meaning. A common response to this situation has been to postulate the presence of a covert modal. However, while it is not impossible that semantically contentful covert elements exist, for each particular case, the standard of proof is quite high.

In this last session we will look at one particular case where a covert modal has been postulated and investigate in some detail the arguments for and against the postulation of such an element. In the course of doing so, we will explore a construction that is fascinating in its own right.

From your reading of 'De Modo Imperativo', you should have seen three proposals for an answer to the following question:

Q: What is there in the morphosyntax of a formally imperative verb (FIV) that is responsible for its semantics?

Here is a summary of what you should have read:

Table 1

	Semantics	Syntax
Han	Imperatives contain an illocutionary operator with Directive force	Imperative contains [dir] and [irr] features, situated in C.
Schwager	Imperatives contain a performative modal of universal force.	The imperative modal is in SPEC,CP. There is an +imp feature on C that ensures V-movement
Portner	Imperatives denote addressee-restricted properties. There is a pragmatic operation that interprets such properties as instructions to add items to the addressee's TO DO list.	The only imperative-specific syntax *might* be an operator that forces the imperative subject to be the addressee.

In a way, both Han and Schwager could be placed in the "modal" accounts of an imperative (and Portner certainly does group them together). However, of the two, the one that explicitly and in some detail calls her account 'modal' is Schwager. For Schwager, FIVs contain what is called a covert "performative modal of universal force".

We know what it means for a modal to be of universal force.
But what is a "performative modal"?

Overt modals have descriptive and non-descriptive, or "performative", uses.
When uttering a sentence with a descriptive modal, the speaker is making an assertion that the subject has, for example, a certain obligation.

(1)   John has to take out the garbage.
  (Because his mother has imposed this rule.)

When uttering a sentence with a performative modal, the speaker is *making* the subject have an obligation:

(2) Now, John has to take out the garbage.
  (I am hereby imposing this obligation on him)

The same holds for modals of existential force:

(3)   John may go to the movies.
  (His mother allows him to do so.)

(4)   Now, John may go to the movies.
(I am hereby permitting him as he has finished his homework)

What, for Schager, determines whether a modal is used descriptively or as a performative? Certain presuppositions on the context of use, specifically the following three:

– The Authority Condition: "…either the social status of the speaker with respect to the hearer allows him to issue an imperative that is meant to guide the actions of the latter, or, the speaker possesses some rational authority with respect to an issue that he is authorized to give advice on the matter" (p. 157; inspired by Hamblin 1967).

– Epistemic Uncertainty Condition: The speaker should consider both **p** and ~**p** to be possible.
Performative modals differ from descriptive modals, which can be uttered when the speaker knows that **p** is going to happen, or when the speaker knows that **p** is

not going to happen (6 and 7 are Schwager's, though she gives the German equivalents; these are her translations):

(5)   You have to do it but I know you will not
(6)   #Do it! But I know you will not.

(7)   I know that you are going to do it, and moreover you have to.
(8)   #I know that you are going to do it (anyway), so do it!   [1]

.

– <u>Ordering Source Affirmation</u>: "the speaker affirms the ordering source. (Therefore, he considers it to be better (sometimes with respect to a contextually salient goal) that the proposition modalized by the imperative operator come out true" (p. 169)

The imperative modal differs from overt modals in this:

(9)   You have to leave, but I don't want you to leave
(10)   #Leave! But I don't want you to leave.

According to Schwager, this condition is why "uttering imperatives induces a strong pressure on the addressee to act upon them, or, why imperatives are felt to be …'uncomfortable' as Wratil (2004) chooses to put it."

In short, for Schwager, when the context of a sentence with an overt modal satisfies the above conditions, the overt modal <u>can</u> be used performatively.
On the other hand, the covert modal in an imperative is only performative. That is, it can felicitously be used only when its context meets those three conditions.

In other words, if these conditions on the context are not met, an overt modal is used descriptively, but an imperative is undefined (suffers from presupposition failure).

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[1] Example (8) is actually fine when it is reinterpreted as "… so do it *now*". The obligatoriness of this reinterpretation supports the Epistemic Uncertainty Condition. Instead of (8) Schwager had the following (verbatim):
     i.   #I know that you are at any way going to do it, so do it also
However, (i) is ill-formed as a sentence of English for independent reasons.

Portner criticizes a modal account of FIV as follows:

 "A modal which only had a performative use might as well not be called a modal at all. The performative aspect of its meaning, modeled as the addition of its prejacent to the To-Do List or in some other way, would explain everything that needs to be explained about its meaning. In addition, there are no overt modals whose sole function is to update the To-Do List (even *must* has modal truth conditions as well… For these reasons, we're better off simply saying that an imperative's only role is to add to the To-Do List" (p. 11)

In short, the properties that one would need to ascribe to the imperative modal are so unique, and they would make the modal in the imperative so unlike any other modal, that you are just as well off saying that these are just the properties of the imperative.

Beyond Portner's criticism, how does a modal account fare in the face of several challenges?

In DMI, this issue is discussed with respect to
  * negative imperatives (some languages have such, some not)
  * the semantic variability of FIVs, in particular the fact that a FIV can sometimes be a command, sometimes a permission[2]:

(11)   a. Make your bed!
         b. Do your homework!

(12)   A: May I open the window
         B: Yeah, open it.

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[2] Other non-command uses of the FIV that have been reported include:

Instructions:
i.   A: How can I get to Ashfield?
                B: Take Route 2

ii. Peel the eggplants. Cut them into small pieces. Throw them in the soup.

Dares/ Threats (Han 2000) / Concessives (Schwager)
iii.   Go on. Throw the rock. I dare you.   (Han 2000)
iv.   Alright. Don't come then
                        (Schwager 2006)

Wishes:
v.   Have a good time!

(13)   It starts at 8pm but come earlier, if you like   (Schwager 2006)

If a FIV contains a performative modal of universal force, how can the permission readings come about? After all, the performative *You must leave now!* Can never mean that the hearer has permission to leave.
The question of how to analyze the permission use of the FIV given its more common command reading, has received a fair amount of attention (Han, Schwager). See the original sources or the summary in DMI.

Today, we will focus on yet another challenge for any account of FIVs and we will ask the question of whether a covert modal account is beneficial. We chose this particular phenomenon partly because it is fairly unknown and complicated (and therefore fun), partly because we are working on it and don't know the solution to it (though we do have several findings and thoughts to report).

Section 2: IaDs

FIVs can appear as a first conjunct, with the second conjunct being a declarative. We will adopt Schwager's term "IaD" (for "Imperative *and* Declarative") for this construction:

(14)   Study hard and you will pass the class.
(15)   Ignore your homework and you will fail the class.

Although we will see that this position has been called into doubt, we will assume for the time being that both (14) and (15) contain an FIV in Conjunct1.
Why are these so interesting? Because (15), unlike (14), is used to get the addressee to *not* do what the first conjunct says. That is, (15) intends to instigate the addressee to *not* ignore the homework by pointing out its undesirable consequence in the second conjunct. But if this is so, how can (15) contain the FIVP "ignore your homework"?

> We will call the IaDs that contain the meaning of directive and that are amenable to the paraphrase containing a command, as in (14), **Type I IaDs**. We will call the IaDs with the undesirable consequent, which cannot be paraphrased as containing an imperative, as in (15), **Type II IaDs.**
>
> **That is: IaDs with undesirable second conjuncts are always Type II IaDs**

Both types occur in languages other than English. Consider the following examples form Greek, which have the added benefit that the FIV is unambiguously imperative:

Type I IaD:

(16)a. Kane ta mathimata su   ke   ola   tha pane kale
        do   the   lessons   your and all   will go well

Type II IaD:

b.   Fae   ena apo afta   ke   tha
        Eat.IMP   one from these   and   FUT

        pethanis   mesa se 24 ores
        die   within 24 hours
      'Eat one of these and you will die within 24 hours'

Section 3:   Type I IaDs

Let us start with Type I IaDs, which have been taken to be the "easier" ones, as the FIV still retains the meaning of a directive in them.

Schwager 2006 and Russell 2007 have similar accounts for Type I IaDs:

- Type I IaDs are conjunctions of speech acts.
- Type I IaDs contain modal subordination[3] (Roberts 1989)

Krifka (2001) is credited with the idea that speech acts can be conjoined. Speech act *and* conjoins two sentences that already have force and returns another speech act. The result is as if the two speech acts applied in succession.
Because it is a speech act conjunction, the meaning of the imperative is not "buried" in the conjunction, i.e. the meaning of the FIV is retained in its full glory, more specifically the command reading.
Subsequently, Modal Subordination takes us to the worlds in which the command is satisfied. In effect, after the imperative speech act has been uttered, a conditional is created in which the modal *will* is restricted by an antecedent like *if you study hard* and the consequent of this conditional is the second conjunct.

All this gives us the composite meaning of Type I IaD:

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[3] In particular, modal subordination of the following type (Roberts 1989, p. 699): "The approach I suggest, which I will call **the accommodation of the missing antecedent** approach to modal subordination, is the pragmatic **accommodation** of a contextually given hypothetical common ground to be the antecedent of the modally subordinated clause".

(17)   Study hard and you will pass the class. =
(18)   Study hard! In the worlds in which you study hard you pass the class.

As we said earlier, speech act conjunction is taken to be the same as speech act sequencing (henceforth "I.D"s, with "." representing the period (exclamation mark, actually) between two sentences in the discourse). That is, (17) and (19) are claimed to be identical, both resulting in (19).

(19)   Study hard! You will pass the exam.

Certainly such an account seems to intuitively capture what we feel Type I IaDs to be saying. This is probably the reason why this idea is common to many accounts.

And indeed, IaDs provide the anaphora which is a well-known trademark of modal subordination:
(20)   Plant a fig tree and it will give you plenty of good shade.

Unfortunately, on closer inspection, there are some problems that have to be dealt with (for any account but we will focus on a covert modal account of FIVs)

P1: It is predicted that sentences with universal deontic modals should be amenable to a similar derivation. But this is not true. Compare Type I IaDs with MaDs (Modal *and* Declarative).

Type I IaDs don't behave like MaDs:

(21)   a.   Invest in this company and you will become rich. ≠
        b.   */??[4] You have to/must[5]/should invest in this company and you will become rich.

(22)   a.   Speak to them in French and they will hire you immediately. ≠
        b.   */??You have to/must/should speak to them in French and they will hire you immediately.

On the other hand, in speech act sequencing (as opposed to speech act conjunction), *I.Ds and M.Ds do behave the same*:

(23) a.   Invest in this company! You will become rich. =
      b.   You must /have to/ should invest in this company. You will become rich.

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[4] The judgment is for the reading of a sentence where the second conjunct is modally subordinated to the first. The sentences are fine as plain conjunctions, of course.
[5] The judgment holds even for *must*, which is taken to have performative uses (Ninan 2005)

(24) a.   Speak to them in French. They will hire you. =
      b.   You must speak to them in French. They will hire you.

In other words:
Modal Subordination (*the* crucial ingredient in this account) is possible in <u>sequencing</u>
with modalized sentences and imperatives alike. However, Modal Subordination in
<u>conjunction</u> is possible only with imperatives, not with modalized sentences.
Why should this be? There is nothing (yet) in our knowledge of modal subordination that
could explain this. Moreover, why would a covert modal (as in the covert modal account
of FIVs) behave differently from an overt one?

Within a modal account of FIVs,…

  –   If we say that modal subordination happens only in sequencing and not in
      conjunction we can explain why MaDs do not have it but we are left with no
      account for Type I IaDs.

  –   If we say that modal subordination happens in conjunction as well as sequencing,
      we have no account for why MaDs are not OK.

Hwever, if there is no covert modal in an FIV, then the fact that Type I IaDs differ from
M.Ds is in itself not a problem. We can say then that there is no modal subordination in
conjunction (though we would have to investigate why), The ability of FIVs to form
Type I IaDs would still have to be investigated.

At any rate, it doesn't seem that a modal account is advantageous with respect to this first
problem.

P2: A second problem that arises if we take Type I IaDs to contain an imperative
followed by modal subordination regards the phenomenon of polarity switch. Polarity
switch is a known possibility for modal subordination. Partee 1972 has this example[6]:

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[6] At first glance, it might seem that polarity switch is somewhat easier from negative to
positive:

(i)   Don't park on the even side of the street today! You will get towed. =
                    Don't park on the even side of the street today! If you park on the
even side, you will get towed.

(ii)   Park on the odd side of the street today! You will get towed. ≠
       Park on the odd side of the street today! If you park on the even side (i.e. if you
don't park on the odd side) you will get towed.

That is, it seems easier to subtract a negation rather than add one. However, example
(22b) from the text and (iii) below show that this is not necessarily so.

(25) John won't buy a car because he wouldn't have space for it in his garage
=John <u>won't buy</u> a car because in the worlds in which he <u>does buy</u> a car he does not
have space for it in his garage.

An FIV in sequencing (I.Ds) can involve modal subordination with a polarity switch:

(26)   a.   Don't park there. You will be towed. =
                  Don't park there. If you **do**, you will be towed.

        b.   Conserve your energy. You will run out of breath. =
            Conserve your energy. If you **don't**, you will run out of breath.

What the above shows us is that modal subordination in I.Ds can take us to the worlds in which the first clause is *not* satisfied (polarity switch). However, such a polarity switch is not possible in IaDs[7]:

(27)   a.   Don't park there and you will be towed. ≠
                  Don't park there. If you do, you will be towed.

        b.   Conserve your energy and you will run out of breath. ≠
            Conserve your energy. If you don't, you will run out of breath

The only meaning that (27) can have is the one where the polarity is maintained, i.e., where you will be towed if you *don't* park there and where you will run out of breath if you conserve your energy.

In addition, polarity switch is possible in sequencing not just with I.Ds but also with M.Ds[8]:

   (28)   You must not park on the even side on the street. You will get towed. =
        You must not park on the even side of the street. If you do, you will get towed.

(iii) Be careful! You will fall. =
    Be careful! If you aren't, you will fall.

It is unclear what the difference between (ii) and (26b)/(iii) is due to.
[7] The fact that the first conjunct retains its imperative meaning (that is, the speaker does want the addressee to not park there in (13a), and does want her or him to conserve energy in (13b)) makes these sentences Type I IaDs.

[8] MaDs, with modal subordination are not grammatical and thus we cannot test their behavior with respect to polarity switch and thereby compare IaDs to MaDs.

(29)   You should conserve your energy. You will run out of breath. =
            You should conserve your energy. If you don't, you will run out of breath.

It suffices to say that if IaDs are reduced to speech act conjunction and modal subordination, there is no reason whatsoever why they should not be able to have a polarity switch. And yet, polarity switch is out for IaDs, while it is fine for sequencing in both I.Ds and M.Ds.

P3: A third property of IaDs that seems to set them apart from other known cases of modal subordination is that typically, modal subordination permits a choice between *will* and *would*, even when the first clause is an imperative:

(30)   Read that book by Max. You will like it.
(31)   Read that book by Max. You would like it.

(32)   You have to/must/should read that book by Max. You will like it.
(33)   You have to/must/should read that book by Max. You would like it.

Possibly this choice reflects the choice in the accommodated antecedent: *if you do* .. versus *If you did,*..... However, in IaDs, the choice can be only *will*:

(34)   Study hard and you will pass the class.
(35)   *Study hard and you would pass the class.

So this is another place where IaDs behave differently from the known cases of modal subordination.

In summary, while the speech act conjunction plus modal subordination account of Type I IaDs seems intuitively appealing, it does face a few difficulties.

Moreover, a modal account of imperatives does not help things. If anything, it adds extra things to be explained in the cases where IaDs and MaDs behave differently.

More specifically, the fact that IaDs differ form MaDs is a problem for Schwager. In addition, the fact that IaDs differ from I.Ds is a problem for anyone who believes that speech act conjunction behaves identically to speech act sequencing.

Section 3: Summary and preview of accounts of Type I and Type II IaDs.

Before we proceed, it is useful to give a preview of certain ingredients that are common to the solutions proposed by Han, Schwager and Russell for Type II IaDs.

Basically, Han[9], Russell and Schwager, while they differ on quite a few things, they argue that in Type II, the first conjunct becomes the antecedent of a conditional:

(36) Ignore your homework and you will fail =
        If you ignore your homework you will fail

While they agree that the Conjunct1 of Type II IaDs does not receive the command reading typically associated with "imperative semantics", they differ on its exact nature. For Han, it is a "stripped" imperative, that is, an imperative that has lost its [+dir] feature. For Russell, the first conjunct of a Type II IaD is not an FIV but some sort of truncated, infinitival form. For Shwager it is still an FIV, but it gets reinterpreted in context in a way that we will come to later.

Here is a quick summary as preview:

Table 2:

	Type I IaD	Type II IaD
Han	Conjunct 1 is not an imperative but infinitive-like. It refers to hypothetically possible worlds/becomes a conditional antecedent. Conjunct2 is the consequent.	
Russell	Conjunct 1 is an imperative. Conjunct2 is modally subordinated	Conjunct 1 is infinitive-like. It becomes a conditional antecedent. Conjunct2 is the consequent.
Schwager	Conjunct 1 is an imperative. Conjunct2 is modally subordinated	Conjunct1 is an imperative. It becomes a conditional antecedent. Conjunct 2 is the consequent

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[9] Though, actually, Han proposes different analyses for different languages but the one in Table 1 is among those and it is the one relevant for English.

As you can see in Table 2, Han 2000 proposes that both types of IaD should be analyzed as transforming into a conditional, with the first conjunct being the antecedent.

As a working hypothesis, we will side with Han, who argues that <u>a unified derivation underlies both types.</u> In addition we will agree with the position that in some sense, IaDs transform into conditional sentences of sorts, with the Conjunct1 being akin to an antecedent. We will also follow Han in saying that the intuition that Type I contains an imperative is due to the fact that the consequent/Conjunct1 of a Type I IaD is positive and so there is the implicature that the speaker wants the hearer to do the action in Conjunct1.

As a first step towards this conclusion, let us see how we would account for problems 1-4 that we saw above.

Wrt P1: We noticed that IaDs behave differently from MaD, which are basically ungrammatical on the relevant reading. On the other hand, I.Ds and M.Ds are both fine. If we say that modal subordination is not possible in conjunction but only in sequencing[10], we correctly predict the acceptability of I.Ds and M.Ds, as well as the unacceptability of MaDs. What remains to be explained is what is behind the acceptability of Type I IaDs. As we said above, the solution to this will be found in the domain of a type of conditional semantics.

Wrt P2: We noticed that Type I IaDs do not permit the polarity switch that is possible in modal subordination, as with I.Ds and M.Ds. If Type I IaDs do not involve modal subordination, the lack of polarity switch is not noteworthy. Moreover, if we assign (Type I) IaDs a conditional semantics, we would expect the absence of a polarity switch, as these never happen with conditionals:

(37) *If you conserve your energy you will run out of breath
    (≠ If you don't conserve your energy you will run out of breath)

Wrt P3: We noticed that unlike known cases of modal subordination, namely, I.Ds and M.Ds, which permit a choice between *will* and *would* in the second clause, IaDs do not. We consider the choice between *will* and *would* a characteristic of modal subordination and due to the fact that the covert antecedent which is responsible for modal subordination can be as in (38) or as in (39) and similarly for the M.Ds in (40-41)

(38)   Read that book by Max. ~~If you do,~~ you will like it.
(39)   Read that book by Max. ~~If you did~~ you would like it.

(40) You must/should/ought to/have to read that book by Max. ~~If you do~~ you will like it.
(41) You must/should/ought to/have to read that book by Max. ~~If you did~~ you would like it.

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[10] Though we do not know why this should be the case.

On the other hand, with IaDs, there is no such covert antecedent, as there is no modal subordination. If IaDs receive conditional semantics, the CF morphology in the consequent is possible only with matching CF morphology in the first conjunct/ antecedent (specifically past morphology), and that is clearly lacking in IaDs.

Finally, recall that we had given as argument in favor of the modal subordination account of Type I IaDs the fact that we observe the anaphoric relationship associated with modal subordination:

(42) Plant a fig tree and it will give you plenty of good shade.

However, the acceptability of the anaphoric relationship between *it* and *a fig tree* would be just as expected under a conditional semantics for this sentence. That is, under modal subordination, the derivation would be schematically as in (39), while with a conditional semantics, it would be as in (40):

(43) Plant a fig tree and ~~if you plant a fig tree,~~ it will give you plenty of good shade.

(44) If you plant a fig tree, it will give you plenty of shade

In other words, while the acceptable anaphora in (42) is certainly consistent with a derivation that involves modal subordination, it does not argue in favor of it over an account that assigns conditional semantics to the sentence.

In short, we keep alive the hope that a common derivation for bth Types will be possible.

Section 4: Type II IaDs

Remember that these are the IaDs that cannot readily be paraphrased as containing an imperative.

These include cases where the speaker is trying to get the addressee to NOT do what the imperative verb says:

(45)   Ignore your homework and you will fail the class
(46)   Insult him and he will get you fired.
(47)   Don't study hard and you will fail the exam.
(48)   Continue this way and you will be dead before you are 20.
(49)   Eat that and your cholesterol will go through the roof.

Type II also contains cases where the speaker is neither trying to get the hearer to do what the first conjunct conveys, nor trying to dissuade the hearer from the action in

Conjunct1 (attributed by Russell to Bolinger 1967 and Franke 2005). The reason these are considered Type II is that they do not contain "imperative semantics", that is, they do not contain a command.

(50) Tell him anything and he just looks at you blankly.
(51) Open the Guardian and you'll find three misprints on every page.

In this section, we will go in more detail over the accounts of Type II IaDs provided by Han, Russell, and Schwager, respectively.

Subsection 4.1: Han 2000

Recall that Han 2000 argues that no type of IaDs contains a true imperative. That is, Han does not make the Type I versus Type II distinction. She argues that the first conjunct of neither type is an imperative. Instead, she transforms all IaDs into conditional statements[11]. That is, (53) somehow becomes (54):

(53)   Study hard and you will succeed.
(54)   If you study hard, you will succeed.

According to Han, imperatives have the features [directive] and [irrealis] The reason Conjunct1 can become a conditional antecedent, Han says, is because it has the feature [irrealis] only, not [directive], which would have made it an imperative.

However, it remains unclear how the morphosyntax of Conjunct1 generates the desired semantics, as no compositional account is given.

In addition, if such a "defective"/"stripped" imperative is possible in an IaD, why couldn't the same happen to an embedded imperative? According to Han, true imperatives cannot be embedded because of their [directive] feature.

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[11] Actually, Han describes her account as making an IaD similar to a conditional statement (p.199-200) and indeed, Russell p. 25 describes Han's account in those terms as well. However, in the section where she formalizes the description within a dynamic semantics model (p.197-200) she argues that Conjunct1 is interpreted like a *might*-statement, introducing a hypothetical possibility, about which Conjunct2 then makes a modally subordinated claim:

(i)   Study hard and you will succeed.
(ii)   You might study hard and then you will succeed.

In addition, Han has a different account for dfferent languages. What we say in the main text is her account for English IaDs. For Greek and German she says that IaDs do contain imperatives. We will return to this point shortly.

Han says we *think* that some IaDs contain a directive for action (the ones we call Type I) but that is not the result of them containing an imperative. It is the result of Conjunct2 being desirable, from which we draw the conclusion that we have an incentive to do what Conjunct1 describes.

So for Han, (55) does not contain an imperative any more than (56) does:

(55)   Come closer and I will give you five dollars.
(56)   Come closer and I'll shoot.

Han argues to have a variety of behavioral points on which Conjunct1 of any (i.e. of either type) IaD differs from an FIV. We will summarize these points shortly, in combination with a summary of the next author.

SubSection 4.2: Russell 2006 [12]

Russell claims that Conjunct1 in a Type II IaD is not an FIV. If this were tru, we would not need to worry about where the directive meaning has disappeared to, a problem which one faces if one thinks that Conjunct1 is an FIV. Though Russell gives some properties of Type II IaDs, he does not try to give a full account of Type II. That is, his main point is to show that Type II IaDs do not contain imperatives but Type I IaDs do. What is the nature of Conjunct1 in Type II for Russell then? He says that it is a bare infinitive, the nature of which he does not investigate much[13] and he acknowledges that he really has no account for it. However, he does say that Type II properties are reminiscent of Jackendoff and Cullicover's 1997 "Left Subordinating *and*" or "LSand". We will return to what this is shortly.

According to Russell, there is a series of differences that distintinguish Type I from Type II IaDs. Moreover, he claims that these differences cluster together. He concludes that this provides support for his position that Type I and Type II undergo different

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[12] Although Russell admits that his account has elements of Han's, see his p. 25 for some criticism of her proposal.

[13] Though Russell is very explicit about not committing himself to the nature of this bare VP, he speculates that they may be simple present declaratives with deletion of subject *you*. The existence of such deletion is motivated by sentences like the following:

(i)   Want a cracker?
(ii)   Know what I did today?

These have in common with the base VP of a Type II IaD that the missing subject can only be *you* and no other person is possible (though in Type II IaDs, missing impersonal *you* is also possible).

derivations. Interestingly, some of these differences are inspired by Han, who, though, took them to be differences between *any* type of IaD and imperatives.
That is, some of these facts discussed below were taken by Han as differences between IaDs and imperatives, and by Russell as differences between Type II and Type I IaDs.

In other words, there is considerable disagreement about the data, and we found this too: several of the tests below we were not able to duplicate[14]. We will point out our own findings for each difference. We turn to these differences in the next section.

Subsection 4.3: Is Conjunct1 in English IaDs imperative or not?
[This subsection contains a discussion of whether English Type II IaDs contain an FIV or not. As you will see, the data are inconclusive. However, whatever happens to be the case for English, there are languages where Conjunt1 of a Type II IaD is clearly morphologically an FIV, as we saw. In other words, the type of language that Russell wants to avoid admitting to, does clearly exist. So if you want, you can skip to section 4.4 on page 22]

What are these alleged differences then? Below is a list of what Han and Russell claim to have found and their comparisons. We also mention our findings for each point, but details of our findings are shown at the end of the section.

A) Both Han and Russell discuss subjects in imperatives, though they disagree about the facts. According to Russell, some IaDs can contain a subject, others cannot. Russell claims that the ones with undesirable consequences (Type II) can never contain a subject. As it is a known characteristic of the (English) imperative to take a subject, Russell concludes that Type II IaDs do not contain an imperative but Type I does.
These are Russell's examples:

Type I:

(57) Nobody steal and you'll all go to heaven.
(58) Everyone tithe[15] and you'll all go to heaven.
(59) Don't you steal and you'll go to heaven.

Type II:

(60) #Nobody tithe and you'll all go to hell.
(61) #Everyone steal and you'll all go to hell.
(62) #Don't you tithe and you'll go to hell.

According to Han, however, no IaD can contain a subject, not even those with desirable consequents:

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[14] Schwager makes the same point about several of these alleged differences.
[15] To tithe: to pay one tenth of your income, especially to a church.

(63) *Everybody come to the party and she will be happy.
(64) *Someone open the window and we'll get some fresh air.

So from these facts she concludes that IaDs do not contain imperatives, since imperatives can take subjects.

We were unable to duplicate this difference systematically.

B) According to Han, no IaD can be negated with *don't*:

(65) ?Don't show up on time and you'll miss the beginning of the movie
(66) *Don't you worry so much and you'll be happier

From this she concludes that IaDs do not contain an imperative, since imperatives can be negated with *don't*:

(67) Don't move!

Russell, on the other hand, describes the facts differently. According to him, both types of IaDs can contain *don't*[16]:

(68) Don't steal and you'll go to heaven (Type I)
(69) Don't tithe and you'll go to hell (Type II)

However, according to Russell, a difference between the two types shows up in their possibility to take *don't – subject – verb* word order.
Type I IaDs can contain the order *don't – subject – verb*; Type II cannot:

(70) Don't you steal and you'll go to heaven
(71) #Don't you tithe and you'll go to hell.

From this, Russell concludes that Type II does not contain an imperative but Type I does.

We found (68, 69) equally acceptable, but found no difference between (70) and (71). In other words, in our findings, Type I and II both accept negation with *don't*. However, for our informants, neither Type I nor Type II accepts *don't you V* as first conjunct.

C) Russell says that Type I IaDs can be negated with *Do not*, and Type II cannot:

(72) Do not steal and you'll go to heaven

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[16] Though how the infinitive that is Conjunct 1 of Type II IaDs according to Russell can support *don't* according to him is unclear.

(73) #?Do not tithe and you'll go to hell

From this he concludes that Type II does not contain an imperative but Type I does.

Han does not discuss similar facts; she asserts that IaDs cannot be negated but gives examples only with *don't* , as above, not with *do not*.

We found that both Type I and Type II equally accept *do not*.

D) According to Han, IaDs can never contain emphatic *do*. This sets them apart from imperatives, which can contain emphatic *do* (judgment Han's):

(74) Do put the light on!
(75) *Do put the light on and you'll see better.
(76) *Do come one step closer and I'll shoot.

For Russell, Type I IaDs can contain emphatic *do*; Type II cannot (judgments are Russell's):

(77) Do tithe and you'll go to heaven.
(78) #Do steal from the church and you'll go to hell.

From this he concludes that Type II does not contain an imperative but Type I does.

We were unable to duplicate this difference between Type I and Type II. Our speakers found no significant difference between (77) and (78).

E) Han discusses facts from Davies 1986, actually first discussed by Bolinger 1967, and says that IaDs can contain NPIs. This sets them apart from imperatives which can never do that:

(79) *Come any closer.
(80) Come any closer and I'll shoot.
(81) Lift a finger to help her and you'll be sorry.
(82) Say one word to anyone about this and I'll never forgive you.
(83) Drink any more beer and you'll puke.

Russell, though, points out that only *some* IaDs can contain NPIs, namely Type II ones (and if you look at Han's examples with NPIs in IaDs, you will see that indeed all of them have undesirable consequents). Russell concludes this by putting an NPI in IaDs that have Type I properties for him, like emphatic *do* and overt subjects:

(84) *Do eat any raw pork and you'll contract trichinosis.

(85) *Anyone turn out the light and I'll show you my slides.
(86) *Someone lift a finger to help and we'll finish building the model
today.

From this Russell concludes that Type II does not contain an imperative, though it is still possible to conclude that Type I does.

Since our speakers did not systematically distinguish between Type I and Type II on the basis of emphatic *do* or overt subjects, we cannot set up the control environments in (80-82). However, we did find that our speakers made a difference wrt NPI-licensing, and we will return to this.

F) Han, discussing facts from Clark 1993, says that IaDs do not contain an imperative because the subject of Conjunct1 in an IaD can be impersonal 2nd person, an option which allegedly does not exist for imperatives:

(87) Wash yourself every day and your skin gets dry.

Russell points out that the impersonal subject is an option only for Type II.
According to him, (88) is fine and it is a Type II IaD. However, (89) is meant to be a Type I, as evidenced by the *don't – subject – verb* sequence, which is possible only for Type I, according to him:

(88)   Marry your sister and your kids will probably be messed up.
(89)   #Don't you marry your sister and your kids will probably be OK.

However, Schwager 2006 (p. 247) disputes this difference because she found that plain imperatives can have impersonal subjects, as in proverbs:

(90) What you can manage to do today don't postpone for tomorrow

So this difference may not be real.

G) Han argues that IaDs do not contain imperatives as they can contain Conjunct1 with predicates that can never be imperatives:

(91) ?Doubt that you will succeed
(92) Doubt that you will succeed and you won't

(93) ?Know the answer
(94) Know the answer and you'll get an A

Russell does not discuss such facts. We found that our speakers agree with this. This is indeed a difference between unembedded imperatives and IaDs. However, this is not something that distinguishes Type I from Type II.

H) Russell, inspired by Jackendoff and Cullicover 1997[17], points to an additional difference between the two types. Type I IaDs cannot contain a pronoun in the first conjunct which is bound by a quantifier in the second; Type II can:

(95) *Someone come up with a few nice stories about him_k and every $senator_k$ will change his vote in our favor.
(96) *Everyone give him_k enough money/ten dollars and every $senator_k$ will give us access to his files.
(97) *Don't you slander him_k and every $senator_k$ will give you access to his files.

(98) Come up with a few nice stories about him_k and every $senator_k$ will change his vote in your favor.
(99) Give him_k enough money and every $senator_k$ will give you access to his files.

Han does not discuss such facts. We could not duplicate Russell's judgments. We found people who like Binding in IaDs with subjects contra Russell. We found people who accept subjects in IaDs with undesirable consequences
But the people that like IaDs with subjects also accepted Binding in those cases, contra Russell.

I) On the assumption that comma separation of conjuncts is possible only with *and*s of the same category, Russell concludes that Type I IaD has "normal" *and*, while Type II does not. That is, Type I but not Type II can have the form *p, q and s* interpreted as *If p and q, then s*. (Again, the presence of an overt subject is meant to ensure a Type I derivation, as in Russell's system, while a desirable second conjunct is not by itself sufficient to do that, since desirable conjuncts can also undergo a Type II derivation).

(100) Everyone sit down, someone turn out the lights, and I'll show you my slides.
(101) Everyone sit down and someone turn out the lights and I'll show you my slides.
(102) If everyone sits down and someone turns out the lights, I'll show you my slides.

(103) *Make a lot of noise, goof off, and you won't get a lollipop.
(104) Make a lot of noise and goof off and you won't get a lollipop.
(105) If you make a lot of noise and goof off, you won't get a lollipop.

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[17] Schwager 2006 also discusses such facts but does not present them as a difference between the two types of IaDs.

Han does not discuss such facts. We were not able to duplicate these judgments. Our speakers had no obvious problem with (103)

J) Han, discussing facts from Davies 1986 and Clark 1993, says that IaDs can contain a Conjunct1 with past reference, an option not available for imperatives. This is another argument for her that IaDs do not contain imperatives:

(104) Life was hard in those days.
   a.   Say one word out of turn and they'd dock you a week's wages.
   b.   Take a holiday in those days and you were regarded as a spendthrift.

Russell does not discuss such facts. However, Schwager 2006 p.251 says that examples like (104) may be the result of interior monologue and that therefore "it does not have to be interpreted as prior to the utterance time, but rather as simultaneous with fictive *now*". We did not check this, as the parameters of this test are unclear to us and as it does not involve a difference between Type I and Type II anyway.

In summary, the only difference between Type I and Type II that we were able to duplicate involves NPIs.

Recall that our ultimate goal is to achieve a unified account of Type I and II in terms of some type of conditional semantics. Conditionals support NPIs in their antecedent, but not always. If we manage to show that the IaDs that do not support NPIs in the first conjunct correspond to conditionals that do not support NPIs in their antecedent, then the conditional account of both types will not be endangered by the variable acceptability of NPIs in IaDs.

We find that this is indeed the case.

(105)   Lift a finger to help him and I will never speak to you again
          If you lift a finger to help him I will never speak to you again

(106)   *Lift a finger to help him and he will finish the building in time
(107)   *If you lift a finger to help him he will finish the building in time

(108) *Anyone turn out the light and I'll show you my slides.
          *If anyone turns out the light, I'll show you my slides.

(109)   *Someone lift a finger to help and we'll finish building the model today.
          *If someone lift a finger to help, we'll finish building the model today.

(110) Drink even a single glass of wine and your boss will fire you
     If you drink even a single glass of wine, your boss will fire you

(111) Take even a single one of these pills and you will feel better
     If you take even a single one of these pills you will feel better

As we see form the above, NPI licensing in IaDs does seem to track the acceptability of an NPI in the corresponding conditional. We will not go into details into the licensing of NPIs in conditionals here but will be content with the conclusion that they do not endanger a unified account[18]. However, there are types of conditionals that do not correspond to IaDs and some of these can license NPIs as well, which correctly give the impression that there are more NPIs in conditionals than in IaDs.

So far then, it seems that the data provided do not amount to an insurmountable obstacle to a unified account.

Section 4.4: Schwager[19].

Schwager's account for Type I IaDs is the one we already discussed, involving Modal subordination.
With respect to Type II IaDs: unlike Han, who thinks that Conjunct1 is a stripped imperative, and unlike Russell, who thinks that Conjunct1 is no imperative at all, Schwager thinks that Conjunct1 is an honest-to-goodness imperative.

Like Russell (and earlier than him), Schwager sees Type II IaDs as another case of Cullicover and Jackendoff's $_{LS}and$ and she wants an account that will unify all $_{LS}and$ cases.

So let's see what this $_{LS}and$ is. For a summary, please go to section 6 on page 29.

So how does $_{LS}and$ turn something that looks likes conjunction into a conditional?

In conditionals, the antecedent restricts a modal, and the consequent is the scope of that modal. In $_{LS}and$ environments, Conjunct1 becomes the restrictor of a modal and

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[18] Note that (111) is a counterxample to the position that only IaDs with negative consequences license NPIs. Moreover, even if it were to turned out that it is only IaDs with negative consequents that licensed NPIs in Conjunct1, this could have been expressible in terms of R. Lakoff's and Linebarger's Negative Implicatum.

[19] Schwager discusses Han's work but not Russell's, which it precedes.

Conjunct2 becomes the scope. The modal whose restrictor and scope we are talking about is <u>contained in Conjunct1</u>.

Schematically:

(112)   [Modal (α)]$_{Conjunct1}$ $_{LS}and$ [(β)]$_{Conjunct2}$
        $\rightarrow$
        Modal   [(α)] $_{restrictor}$ [(β)]$_{scope}$

This means that the first conjunct of $_{LS}and$ should always contain a modal. This is the modal that gets restricted by (the prejacent of the modal in) Conjunct1.

What is the source of the modal?

For the basic CJ cases, she says that present tense marks the presence of a generic operator, which plays the role of the modal in (112):

(113)   Big Louie looks at him and he shies away in fear

Imperatives can be the first conjuncts of $_{LS}and$ because they too are modalized in her account. So this is how she gets Conjunct1 to be a conditional antecedent:
In Type II IaDs, $_{LS}and$ is semantically empty; it does not contribute conjunction.
There is a modal, however, specifically, the modal whose presence is marked with the imperative form in Conjunct1. This modal does not get applied to the prejacent material in Conjunct1 in the way it does in a regular imperative. Instead, the prejacent material in Conjunct1 gets mapped into the restrictor of that modal and Conjunct2 becomes the modal scope.

Scwager argues that "$_{LS}and$ comes with a special intonation contour that triggers mapping of the entire proposition embedded under a modal operator in the first conjunct into the restrictor of the modal operator" (p.258)

Where does the "special intonation" of the initial quote come into play? Schwager, following Halliday 1967, talks about how sentences like those (114) is in principle ambiguous:

(114)a. (sign on an escalator:)
        Dogs must be carried.

(114)b. (sign outside a seaside restaurant:)
        Shirts must be worn

Sentence (114a) has the following two readings:

(115) In all the worlds compatible with the law in which there is an event involving this escalator and a dog, the dog is carried.

$(\forall w' \in f(w))$ [$\exists$ x $\exists$e (dog'$_{w'}$ (x) on-this-escalator'(x)(e))][carried' $_{w'}$ (x)(e)]

and

(116) In all the worlds compatible with the law in which there is an event involving this escalator, there is a dog that is carried.

$(\forall w' \in f(w))$ [$\exists$e (on-this-escalator'(e))] [$\exists$x [dog'(x) & carried' $_{w'}$ (x)(e)]

In the first reading, *dogs* is in the restrictor of the universal modal. In the second reading it is not.

In the first reading, *dogs* is deaccented. In the second reading it is accented.

Deaccenting of *dogs* is more natural for (114a), but stressing *shirts* is more natural in (114b).

In other words, deaccenting is a mark of being mapped in the restrictor of the modal.

With $_{LS}and$, we see that Conjunct1 *must* be deaccented. That is, Conjunct1 must get mapped into the restrictor Otherwise, the properties characteristic of IaDs are not possible.

What are the challenges for Schwager's account? Here are some:

Q1: According to Schwager, the modal in the imperative is necessarily performative (which is why FIV are alwaysp erformatives and never descriptive statements)
What happens to the performativity of the modal in Type II IaDs?

Q2: The syntax-semantics mapping seems suboptimal: Schwager has left downward movement of the complement of the imperative into the restriction of the modal and then allows insertion of an abstractor capturing the trace left behind by the complement, and application of that abstract to the second conjunct. The operations "get" the right result but they are custom-made for this construction. As an attempt to fit the transformation of IaDs into a conditional by means of independently known operations, it fails.

Q3: Schwager points out that IaDs can never be epistemic:

(117) Feel warm and you will have caught something. ≠
(118) If you feel warm you will have caught something.

She attributes this to the fact that the covert modal of the FIV is not an epistemic modal. However, as she herself notes, she wrongly predicts that other necessity operators in Conjunct1 of $_{LS}and$ should also work but this is not true (point attributed to Manfred Krifka). The following fails as a conditional:

(119) You must come in time and you'll get a seat.
(120) It must rain and you take an umbrella

Q4: As also noted by Schwager, It is unclear how/why sufficiency modals would work in the $_{LS}and$ construction (von Fintel and Iatridou 2007):

(121) You only have to look at him and he shies away in fear.

Q5: Another challenge that Schwager herself notices has to do with an observation in Bolinger 1967 that she cannot account for. Bolinger 1967 points out that constructions like the ones we have been referring to as IaDs have the property that the second conjunct must be an intrinsic consequence of the first conjunct[20].

Here are some examples from Bolinger, involving statives, that show the intrinsic consequent reading in action

(122) Like her and her friends will love you.
        *Like her and I'll introduce her to you.

(123) Own a piece of property and you get taxed mercilessly.
        *Own this property and I'll buy it from you

(124) Understand Chinese and you can get any of these jobs.
        *Understand Chinese and I need you for a teacher.

Finally, Schwager herself thinks her account wrongly predicts that IaDs could express restrictions on the modal background of imperatives and this is not true:

(125)   If you leave your house, take an umbrella with you. ≠
        Leave your house and you take an umbrella with you.

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[20] See also von Fintel and Iatridou's 2007 "automatic result".

However, it is possible that this is not a different challenge from the one related to Bolinger's observation.

In the end, the postulation of a null modal does not help at all with the challenge of Type II IaDs either.

Section 5: What do we need?

So we have seen that while there are three proposals for IaDs, they all have their challenges. Can we do better? Let's see what some of the ingredients of an account would have to be.

A. Since we have found problems with the modal subordination account of Type I, we will not adopt it. This means that we will seek a common account for both types but without modal subordination. The intuitive appeal of $_{LS}and$ seems obvious, so the initial working hypothesis will be do attempt to develop an account along those lines, which means that we need to figure out the nature of $_{LS}and$ and its relation to conditional semantics. The fact that some IaDs are felt to have a paraphrase containing an imperative will be accounted for along the lines proposed by Han's: if the consequent (Conjunct2) is desirable, it is implicated that the speaker wants the hearer to initiate the action in Conjunct1.

B. The semantics of $_{LS}and$ will be such that it includes the intrinsic consequent condition (Bolinger) or the automatic result (von Fintel and Iatridou)

C. From the above it follows that Conjunct 1 in all IaDs is of the same type. We will side with Schwager and against Russell that Conjunct1 is an imperative. Here are some reasons why:

- in languages with richer morphology than English, Conjunct1 even of Type II is marked as imperative[21]:

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[21] Han notices that in Greek and German Conjunct1 is clearly an FIV and therefore gives a different account of IaDs for those languages from the one she does for English. The reason she does this is simply that it does not seem possible to duplicate the differences between the Conjunct1 of (Type II) IaDs and the Imperative that she thought she had found in English..

Recall that for Han, Conjunct1 in English is a "defective imperative" (p.195). That is, it is an imperative that has been stripped of its [directive] feature. Given that she considers Conjunct1 a stripped imperative, the question arises why Greek and German cannot have a "stripped imperative" either. This way she would be able to collapse the accounts for all three languages. Han's answer to this question is the following (p.195):

(126) Fae   ena apo afta   ke   tha
       Eat.IMP   one from these   and   FUT

       pethanis   mesa se 24 ores
       die   within 24 hours
     'Eat one of these and you will die within 24 hours'

- IaDs cannot be embedded, except under the verb *say* and without a complementizer. This is the embedding pattern of an imperative and not the embedding pattern of conditionals:

(127)   *He thinks (that) eat one of these and you will die within 24 hours
         He thinks (that) if you eat one of those you will die within 24 hours

(128)   *He thinks/believes/etc that call him
         He said (*that) call him[22]

(129)   He said eat this and you will die within 24 hours

Note that the inability of the IaD to be embedded is not a function of $_{LS}and$ but of the imperative in Conjunct1, as there appears to be nothing wrong with the following:

(130) John thinks that Mary frowns and Fred shies away in fear.

So like Schwager, we will take Conjunct1 to be an FIV in all IaDs.[23]

"… English uses bare verb forms for imperatives, whereas German, Korean, and Modern Greek have distinctive morphology for imperative verbs. In English, the absence of some of the morphosyntactic features associated with the imperative operator would have no effect on the bare verbal form. But in languages with distinctive morphology on the verb for imperatives, the absence of some of the morphosyntactic features of imperative operator would likely to have an effect on the verbal form. Thus, in these languages, there are no defective imperatives that look just like imperatives"
However, this rationale does not seem very clear. For example, from "in languages with distinctive morphology on the verb for imperatives, the absence of some of the morphosyntactic features of imperative operator would likely to have an effect on the verbal form", one could have just as well concluded that since the form is still imperative, the theory that permits stripping of an imperative is not correct.
[22] Crnic and Trinh
[23] Han's position is also that Conjunct1 contains an imperative but a "stripped" one. This raises the question of what the nature of this stripping mechanism is. For Han it is the removal of the [directive] feature, which will permit it to be embedded in a conjunction.

D. We have seen that IaDs cannot be epistemic. In fact, other cases if $_{LS}$and cannot be epistemic, or anankastic:

(131)a. If he left yesterday he must have arrived already
      b.=/= He left yesterday and he must have arrived already

(132) If you want good cheese, you have to go to the North End
=/+ you want could cheese and you have to go to the North End

Which conditionals can appear in conjunctive form? According to Lakoff, it's threats and rewards, but clearly this does not cover all the cases, as already CJ's $_{LS}$and cases are neither threats nor rewards. We propose that a necessary condition for the conditional conjunction is that the relationship be causal. That is *if p, q* and *p and q* appear correlates only if p, when it happens, causes q. If the conditional does not express/contain a causal relationship, it does not have a correlated $_{LS}$and conjunction. Moreover, *p* is not a necessary but a sufficient condition for *q*. In other words, if *p* comes about, *q* will come about for sure. In other words, *p* inevitably causes *q*.

As evidence that the causal relation holds, look at all the cases cited from CJ above. Here are some examples in addition to (131-132) that show that when causality is absent, the conditional and conjunction are not paraphrases:

(133)a. If a dog has blue eyes it is intelligent
      b.=/= A dog has blue eyes and it is intelligent

(134)a. If a man buys a horse he pays cash for it
    b. =/= A man buys a horse and he pays cash for it

One might object that these do not work because unselective binding does not work in conjunctions. But this is not true:

(135)   She looks at a man and he falls in love with her

What separates (135) from (133-134) is that in (135) the relationship is causal (in fact, sufficiency causal).

Of course, it *is* possible to look at (133-134) as paraphrases after all, but one can do that only if one imposes a causal relationship between the two conjuncts. For example, only if a dog's getting blue eyes causes it to become intelligent. And of course we see that

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However, we have not yet committed ourselves to the existence of such a feature. Moreover, we saw that while the "stripped" imperative can be embedded in an IaD, the IaD as a whole retains the embedding properties of an imperative.

threats and rewards are natural candidates for conditional conjunction, as in those cases the first conjunct causes the second.

This sufficiency/causal relationship is what Bolinger described as 'intrinsic consequent' (and von Fintel and Iatridou as 'automatic result').

What the SMC seems to contribute to $_{LS}$and is that Conjunct1 is easy, or low on some scale. Here are some more examples:

(136) The skies only have to darken and my dog runs under the table
     You only have to go to the NE and you'll have a great dinner
     You only have to give him $5000 and you will have his soul/he will be yours.

But the SMC is not what brings in the instrinsic consquence condition. That comes from $_{LS}$and itself. There are two reasons for this. On the one hand, we have seen plenty of cases of $_{LS}$and without an SMC that have the intrinsic consequence property. Here is one more example:

(137) You (onlyh ave to) go to the Stata Center and you learn what Morris is working on

 On the other hand, there are environments where the SMC appears but that lack the intrinsic consequence:

(138) To learn what Morris is working on, you only have to go to the Stata Center
(139) If you want to learn what Morris is working on, you only have to go to the Stata Center

In (138) the SMC is used with a purpose clause, and in (139) in an anankastic conditional. However, both sentences permit the possibility that you go to the North End and do something other than get good cheese. On the other hand, in (175), even without the SMC, going to the North End will unavoidably land you with good cheese.

In short, the automatic result is a property of $_{LS}$and., not of the SMC[24]. When the SMC is present it says something explicit about the effort involved in Conjnct1.

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[24] In addition, in (138-139) there is goal-oriented modality. This is the result of the purpose clause and the anankastic if-clause., not the result of the SMC. The $_{LS}$and with or without the SMC does not contain goal-oriented modality.

i. You (only need to) look at Fred and he shies away in fear
    ii. The skies (only have to) darken a little bit and my dog runs under the table

    The above sentences do not convey that the speaker wants Fred to shy away in fear or my dog to run under the table.

So here are the basic elements an account of IaDs should have:

No distinction between Type I and Type II
All IaDs contain an imperative
IaDs contain $_{LS}and$
$_{LS}and$ expresses a causal modal
No modal contained in Conjunct1 other than sufficiency

Section 6: The most basic ingredient: Cullicover and Jackendoff (1999)' s $_{LS}and$

Cullicover and Jackendoff (1999) (CJ) discuss a variety of points at which simple "coordinating" conjunction (and$_C$) differs from what they call "Left Subordinating Conjunction" ($_{LS}and$), which permits a conditional paraphrase[25].

A. $_{LS}and$ permits an anaphor in the first conjunct where and$_C$ does not.

(140) a. Another picture of himself (appears) in the paper $_{LS}and$ Susan thinks that John will definitely go out and get a lawyer

b. *Another picture of himself has appeared in the paper and$_C$ Susan thinks that John will definitely go out and get a lawyer

B. $_{LS}and$ permits a pronoun in the first conjunct to covary with a quantifier in the second conjunct but and$_C$ does not.

(141)a. You give him enough opportunity $_{LS}and$ every senator, no matter how honest, will succumb to corruption.

b. *We gave him enough opportunity and$_C$ every senator, no matter how honest, succumbed to corruption.

C. Both $_{LS}and$ and and$_C$ can be embedded but $_{LS}and$ permits only IP-conjunction, not CP-conjunction.

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[25] As a safe-guard that we are dealing wth $_{LS}and$, CJ use the conditional paraphrase, as well as keeping the Tense/Aspect contents of the two conjuncts what they would be in a conditional (see CJ for more details on the latter).

(142)a. You know, of course, that you drink one more beer and you get kicked out. (=…that if you drink one more beer you get kicked out).

b.You know, of course, that you drink one more beer and that you get kicked out. (=/=…that if you drink one more beer you get kicked out).

D. $_{LS}$and does not permit VP-conjunction, unlike and$_C$.

(143)a. *Big Louie sees you with the loot and puts out a contract on you. (=/= If Big
b. Louie sees you with the loot, he puts out a contract on you)

E. According to CJ, $_{LS}$and and and$_C$ differ in ways which follow from the fact that with and$_C$ conjunction is symmetrical, while with $_{LS}$and the two conjuncts are not on equal standing, so to speak. However, CJ warn against treating all asymmetrical coordinations as LS-coordinating. They mention some cases where the coordination is asymmetric (e.g. where the first conjunct temporally precedes the second and so inversion of the two conjuncts is not possible) yet not left subordinating. The most telling tests for $_{LS}$and they argue are those involving binding, for this reason, we will not say much more about these differences other than mentioning them

With and$_C$ we get the well-known effect of inability to extract from only one of the conjuncts. Instead, we have to do ATB. With $_{LS}$and, on the other hand, ATB is out but we can have asymmetrical extraction from either conjunct. (judgments as indicated in CJ)

and$_C$:

(144)a. *This is the senator that I voted for and$_C$ Terry met Bill Clinton in Wahington
b.*This is the senator that I voted for Bill Clinton for and$_C$ Terry met in Washington
c. This is the senator that I voted for and$_C$ Terry met in Washington

$_{LS}$and:
(145)a. ?This is the loot that you just identify and we arrest the thief on the spot
b.?This is the thief that you just identify the loot and we arrest on the spot
c. ??This is the thief that you just point out and we identify on the spot.

F. Another point of difference between symmetrical and$_C$ and asymmetrical $_{LS}$and according to CJ is that the former permits inversion only if it occurs in both conjuncts, while asymmetrical $_{LS}$and permits inversion in either conjunct. (1146a,b)) are possibly a function of what the cause of the requirement for ATB is, namely, the parallelism of symmetric conjunction. (c,d) satisfy parallelism:

(146)a. *What has Bill seen and he has heard the bad news?
b. *Bill has seen the broken window and what has he heard?
c. What has Bill seen and what has he heard?
d. Who was at the party and what were they wearing?

On the other hand, asymmetrical $_{LS}$and permits inversion in either conjunct[26]:

    e.   Who does Big Louie visit and the whole gang goes nuts?
    f.   What does he mention and she kicks him out of her office?

    g.   Big Louie sees this mess and who's going to be in trouble?
    h.   You so much as mention the Minimalist program and how loud does he scream?

As we said earlier and for the reasons mentioned by CJ themselves, we will mostly concentrate on A-D, leaving E for a different occasion.

CJ argue that $_{LS}$and is syntactically a coordination yet that there is a level where the first conjunct is (semantically) subordinated to the second and the whole sentence is interpreted as a conditional. For CJ, an important part of their paper (possibly the most important part) is to argue that the level at which $_{LS}$and is interpreted as a conditional is not LF. The reason they give is that there are no syntactic transformations that will change a coordination into a subordination and the derivation from S-structure to LF can only be done with syntactic transformations. They conclude that $_{LS}$and is a case of syntax-semantics mismatch for the "Chomskyan Paradigm" and there is a need for what they call "Conceptual Structure" (refs), that is not derived syntactically from S-structure.

While we think that the discovery and investigation by CJ of $_{LS}$and is extremely valuable, we disagree with their larger conclusion. The reasoning is the following. When CJ claim that we are dealing with a case of a coordination that turns into a semantic subordination, what they in effect do is to say that a coordination turns into the **syntax** of an *if*-clause. That is, they compare the syntax of coordination of $_{LS}$and to the **syntax** of an adjunct *if*-clause. And indeed, this is an impossible syntactic derivation. But the syntax of an *if*-clause is not the same as "semantic subordination" or even "conditional semantics". It is just one of the syntactic structures that can end up with conditional semantics. In order to prove a syntax-semantics mismatch, they would need to give a semantics for conditionals for the semantic side of the "mismatch. Instead, they give syntactic structures for both sides of the mismatch (that of $_{LS}$and and that of an *if*-clause).

To prove a mismatch, one would need to first assume a certain *semantics* of conditionals, which they don't do. Let's assume Kratzer's semantics, where in one clause restricts a modal/quantifier over worlds (the restrictor) and another clause is a predicate of those worlds (the scope). What we need from the syntax is an indication as to which clause is the restrictor and which clause is the scope. One such indication can be seen in the syntax of *if-then*. But why should that be the only possible flag? We have another indication

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[26] (CJ argue that in (e,f) the wh-phrase is inside the first conjunct, yet it has scope over the entire sentence, one of their mismatches)

with $_{LS}$and, at least in that the first conjunct is not postposable[27]. Note that *if*-clauses are postposable (since we already have a sufficient flag for which clause is the restrictor). The inability to postpose the first conjunct in $_{LS}$and may be exactly because we would then loose the clue as to which clause is the restrictor.

In short, $_{LS}$and and *if-then* structures contain the same amount of information that a conditional semantics needs, at least as for the identification of the restrictor and scope of the modal.

Is there something else we need from our syntax? Possibly a tripartite structure along the lines of Heim/Diesing, with the quantifier highest, followed more locally by the restrictor and then by the scope.

However, it is notoriously hard to derive this syntax for *if-then* structures anyway (refs). Moreover, in $_{LS}$and we have at least part of the desired structure already, in that the restrictor is higher in the tree than the scope. How the modal can end up in the highest position, is as much a mystery for $_{LS}$and as it is for *if-then*, though we ill return to this later.

In short, we do not think that CJ's larger conclusion follows from their premises. However, we do think that their empirical discoveries are very important.

CJ make a good case that there is are (at least) two types of *and* and that the one they call '$_{LS}$and' has somehow a modal, possibly conditional paraphrase.

CJ say that the first conjunct becomes and *if*-clause and that therefore the tense/aspect combinations of the two conjuncts must be identical to what would appear in conditionals. Putting aside the issue of Conjunct1 becoming a restrictor of a modal and not obtaining the syntactic status of an *if*-clause, as discussed earlier, the fact is that there are reasons to believe that it is not the case that at least Conjunct1 gets mapped into the restrictor as is. There are at least two reasons for this.

One is the cases of IaDs, where, if Russel and Schwager are right that these are also cases of $_{LS}$and, conjunct1 contains an imperative (like) form, which cannot make it as such in an *if*-clause:

(147) a. Ignore your homework and you will fail
       b. *if ignore your homework, you will fail

The second case, reported from von Fintel and Iatridou, is the appearance of the sufficiency modal in conjunct1, which cannot appear in an *if*-clause:

(148)   You only have/need to look at him and he shies away with fear
    =/= *If you only have/need to look at him, he shies away with fear.

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[27] And maybe the TMA specifications that CJ talk about is also such a flag, though we will see that IaDs defeat this point.

So we don't just have the mystery of obtaining a conditional paraphrase, we also need to find what happens to the missing elements and what their contribution is in the $_{LS}$and conjunction.