What weakness of will can teach us[*]

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1.   Introduction

In some scenarios, sentences like in (1) have a clear *weakness of will* inference, which states that the person in question was initially committed to one course of action, but acted contrary to his or her commitment. For example, (1a) can describe a person on a weight loss program not being able to resist a delicious dessert. Also, (1b) can describe an ex-lover who overwhelmed with feelings makes that unwelcome phone call. In both cases, there is the inference that the person's initial decision to act in a particular way has been overridden by a 'noncompelling competing motivation' (Mele 1995:74).

(1)   a. I didn't want to eat this cake, but I did.   (weakness of will)
           ↝ the speaker had initially decided not to eat the cake, but this decision was overridden by noncompelling competing craving for sweets
       b. I didn't want to call my ex, but I did.   (weakness of will)
           ↝ the speaker had initially decided not to call his ex, but this decision was overridden by noncompelling competing longing for re-connection

Similar configurations in (2), however, do not give rise to the same weakness of will inference, even when the scenarios favour a *want*-over-*not* construal. For example, (2a) can describe an organized person making all precautions in order not to lose her keys, but losing them nevertheless. Also, (2b) can describe a loving husband trying to communicate to his wife that her cooking skills need improvement without offending her, but she still gets offended.

(2)   a. I didn't want to lose the keys, but I did.   (#weakness of will)
           ↝̸ the speaker had initially decided not to lose her keys, but this decision was overridden by noncompelling competing urge to lose the keys

    b. I didn't want to offend my wife, but I did.   (#weakness of will)
          ↛ the speaker had initially decided not to offend his wife, but this decision was overridden by noncompelling competing urge to offend her

The sentences in (2) can only have an *accidental* interpretation, where losing one's keys and offending one's wife are due to some mischance or lack of full control over the results of one's action. The accidental interpretation is also possible for sentences in (1) in appropriate scenarios, for example, in case of lightless dining for (1a) or dialing a wrong number which turned out to be the ex's phone number for (1b).

This paper investigates the following questions: (i) what is the weakness of will inference and which ingredients do we need to model it? and (ii) what is the difference between actions expressed by predicates like *eat* and *call*, on the one hand, and *lose* and *offend*, on the other hand, that allows the weakness of will inference with the former, but not with the latter?

To answer these questions, in section 2 we begin by looking at the notion of weakness of will found in the philosophy of action. We adopt the idea that weakness of will is different from akrasia (i.e., acting against one's best judgements) and can be defined as *an unjustified reconsideration of one's decision or executive commitment*.

In section 3, we take a close look at the constructions in (1) and (2) and see why the weakness of will inference can be present in the former, but not in the latter. The proposal I put forward here is that the difference between (1) and (2) lies in the interpretation of an action. In (1), the actions are interpreted as intentional, whereas in (2), they are interpreted as accidental. In this section, we also see how the weakness of will inference can be described more precisely combining propositional tense logic and deontic logic.

Section 4 discusses the importance of the distinction between intentional and accidental actions that the weakness of will inference highlights for a range of linguistic phenomena. In this section, we also look at previous linguistic tests for distinguishing intentional and accidental actions, which I ague are not fully adequate. Section 5 concludes.

2.   Preliminaries on weakness of will

Weakness of will is a topic widely discussed in the philosophy of action. Starting from Aristotle, weakness of will has been intimately connected with *akrasia*, i.e., acting against one's best judgments (Aristotle, Ethica Nicomachea in Aristotle 1941). In this paper, we take a different approach that says that weakness of will is distinct from akrasia. According to this approach, weakness of will is defined as *unjustified reconsideration of one's decision or executive commitment*.[1] Recently, this idea has been developed by Holton (1999, 2009).[2] It is also found in Mele 1995 under the name 'unorthodox akratic actions'.

To see the difference between weakness of will as understood here and akrasia in its traditional sense, consider an example from Holton 2009:[3]

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[1] The question what counts as 'unjustified reconsiderations' is an important one. However, as far as I can tell, it does not have any bearing on linguistic phenomena, so we leave it outside of the scope of this paper. Interested readers can consult Holton 2009, especially ch. 4 and 5.

[2] For earlier works making the same distinction between akrasia and weakness of will see Holton 2009:71.

[3] This scenario is adopted from A. S. Byatt's novel *Possession* (1989).

> "Christabel, an unmarried Victorian lady, has decided to embark on an affair that she knows will be disastrous. It will ruin her reputation, and quite probably leave her pregnant. Moreover, she considers it morally wrong. So she thinks it not the best option on either moral or prudential grounds. Nevertheless, she has resolved to go ahead with it. However, at the very last moment she pulls out: not because of a rational reconsideration of the pros and cons, but because she simply loses her nerve." (Holton 2009:84)

In this scenario, Christabel's going ahead with the affair would be acting against her best judgements, i.e., akrasia in its traditional sense. But Christabel's not going ahead with the affair is weakness of will in the sense that interests us here. Weakness of will in this sense is associated with acting against one's previous decision or executive commitment.

In Christabel's case, we clearly see the difference between akrasia and weakness of will because they go the opposite directions. But this does not have to be the case. In our scenarios for (1), eating the cake and calling one's ex are both akratic and show weakness of will. This fact makes the scenarios for (1) not suitable for teasing apart akrasia and weakness of will. Nevertheless, the same distinction between akrasia and weakness of will holds in scenarios like (1): akrasia is acting against one's best judgements, whereas weakness of will is acting against one's previous resolution (independently whether this resolution is in line with or against one's best judgments).

3. Describing the weakness of will inference

3.1 Reasoning about actions

Above, we saw that in the philosophy of action weakness of will is associated with acting against one's previous decision or executive commitment (in case this decision or executive commitment has not undergone proper reconsideration). To understand the linguistic mechanism behind the weakness of will inference, in this paper, I describe the inference in augmented propositional logic. This will help us to clarify those components of meaning that are involved in arriving at the weakness of will inference and that then should be transported into our semantic apparatus.

We use the system that combines tense logic and deontic logic (Thomason 1970, et seq.). But instead of an 'ought' operator $O\phi$ that requires ϕ to be true in those future courses of events where we do what we ought to do, we will define a 'choice' operator $C\phi$ that requires ϕ to be true in those future courses of events where we do what we have chosen to do. There are, no doubt, many differences between 'ought' and 'choice,' but I will not dwell on them here. For the modest goal of this paper, their technical behaviour is identical.

To begin with, let us assume a simple formal language with (regular) truth-functional connectives and four additional operators that will be defined in a moment: P is Prior's tense operator for past, F is Prior's tense operator for future, $\Box$ is a familiar necessity operator 'is settled' (we will also use its dual $\Diamond$), and C is a 'choice' operator.

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We use Prior's tense logic that allows choices among possible futures. In this logic, time is not linearly ordered, but 'grows' into a treelike structure. We define a model structure $\langle \mathscr{T}, <, \mathscr{R} \rangle$ where $\langle \mathscr{T}, < \rangle$ is a temporal structure in which: $\mathscr{T}$ is a nonempty set of time instants α, β, etc., $<$ is a relation on $\mathscr{T}$ such that for any time instant $\alpha, \beta, \gamma \in \mathscr{T}$, if $\beta < \alpha$ and $\gamma < \alpha$, then $\beta < \gamma$ or $\gamma < \beta$ or $\beta = \gamma$ (i.e., time is forward branching, see figure 1).
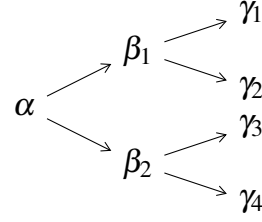

Figure 1: Treelike structure of time

A history h on the model structure is a maximal chain on that structure (e.g., $(\alpha, \beta_1, \gamma_1)$ in figure 1 is a history). $\mathscr{H}_\alpha$ represents the set of all histories that contain α. Since time branches towards the future, $\mathscr{H}_\alpha$ is a set of all courses of events open at α. $\mathscr{R}$ is a relation between an instant of time α and a history h such that if $\mathscr{R}(\alpha, h)$, then $h \in \mathscr{H}_\alpha$ (i.e., h is a future course of events at instant α).

We define a truth-value of a formula ϕ relative to a history h and an instant α, $[\![\phi]\!]_\alpha^h$, recursively.[4] E.g., $[\![\neg\phi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\alpha^h = 0$ and $[\![\phi \wedge \psi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\alpha^h = 1$ and $[\![\psi]\!]_\alpha^h = 1$. Our four operators are defined as follows:

(3)   a. $[\![P\phi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\beta^h = 1$ for some $\beta \in h$ such that $\beta < \alpha$
      (ϕ was true in h at α iff ϕ is true at some instant β that precedes α in h)
   b. $[\![F\phi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\beta^h = 1$ for some $\beta \in h$ such that $\alpha < \beta$
      (ϕ will be true in h at α iff ϕ is true at some instant β that follows α in h)
   c. $[\![\Box\phi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\alpha^g = 1$ for all g such that $\mathscr{R}(\alpha, g)$
      (ϕ is necessary in h at α iff ϕ is true at α in all histories that contain α)
   d. $[\![C\phi]\!]_\alpha^h = 1$ iff $[\![\phi]\!]_\alpha^g = 1$ for all g such that $\mathscr{R}_{choice}(\alpha, g)$
      ($\mathscr{R}_{choice}$ selects a subset of $\mathscr{H}_\alpha$ where you do what you have chosen to do)

3.2   The weakness of will inference

Let us now look at our examples with the weakness of will inference. The example in (4a) can be represented by the formula in (4b).

(4)   a. I didn't want to eat the cake, but I did.
   b. $PCF\neg q \wedge Pq$ (q = 'I eat the cake')

The formula in (4b) consists of two conjuncts. The second conjunct is straightforward. It says that somewhere in the past I ate the cake. The first conjunct is more complex. It says that somewhere in the past I made a choice (decision, executive commitment) that in the relative future I would not eat the cake.

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[4]If there are more than one course of events, $[\![\phi]\!]_\alpha$ is defined using supervaluation (see Thomason 1970 for more details).

The formula in (4b) is unproblematic and can be true, for example, relative to $h = (\alpha, \beta_1, \gamma_1)$ and γ_1, see figure 2. In particular, $[\![PCF\neg q \wedge Pq]\!]^h_{\gamma_1}$ is true iff both its conjuncts are true, i.e., $[\![PCF\neg q]\!]^h_{\gamma_1}$ is true and $[\![Pq]\!]^h_{\gamma_1}$ is true. The second conjunct is simple and is true iff $[\![q]\!]^h_{\beta_1}$ is true. The first conjunct is more complex. Let us look at it step-by-step: $[\![PCF\neg q]\!]^h_{\gamma_1}$ is true iff $[\![CF\neg q]\!]^h_{\alpha}$ is true. (As we will see below, it is important that we evaluate the first and the second conjuncts with respect to different past time instants.) $[\![CF\neg q]\!]^h_{\alpha}$ is true iff $[\![F\neg q]\!]^g_{\alpha}$ is true for all histories g that are selected by $\mathscr{R}_{choice}$ as histories where we do what we have chosen to do. Let us say that there are two such histories $g_1 = (\alpha, \beta_2, \gamma_3)$ and $g_2 = (\alpha, \beta_2, \gamma_4)$. $[\![F\neg q]\!]^g_{\alpha}$ is true iff $[\![\neg q]\!]^g_{\beta_2}$ is true. So, (4a) has the intuitive meaning that some time in the past I had chosen a course of events where I would not eat the cake, but a different course of events was realized where I ate the cake.

This meaning is coherent. However, as it stands, it does not yet have a way of explaining the weakness of will inference in (4a) nor its absence with accidental actions. Before I show how we can capture the weakness of will inference in this system, let me highlight two connected intuitions that the system brings to the surface. First, as mentioned above, the two conjuncts in (4), although both are in the same morphological past, cannot be evaluated with re-

Figure 2: Treelike structure for (4b).

spect to the same time instant. Intuitively, this is correct as my choice of how to act precedes the action. Technically, this must be the case because $C\phi$ implies $\Diamond\phi$. That is to say, in order to have a choice about ϕ, ϕ should not be settled. This is the second intuition which is connected to the principle that 'x want p' presupposes that x considers both p and $\neg p$ possible (e.g., Heim 1992).

To capture the weakness of will inference, we introduce a distinction between intentional actions (i.e., actions that the agent initiates intentionally and has full control over) and accidental actions (i.e., actions that the agent does not initiate intentionally or has no full control over). We say that intentional actions come with the inference that if the agent chooses to perform such an action in all histories from the choice point onwards such an action becomes necessary, see (5).

(5) $CF\phi \rightarrow \Box\phi$

Accidental actions have a corresponding requirement that even if the agent chooses to act in a particular way, it is not necessary that the action will achieve its goal in all histories from the choice point onwards, see (6).

(6) $CF\phi \rightarrow \neg\Box\phi$

Let us now return to our example in (4a) and assume that not eating the cake is an intentional action. In this case, at α where $[\![CF\neg q]\!]^h_{\alpha}$ holds, $[\![\Box\neg q]\!]^h_{\alpha}$ should be true as well. This means that $[\![\neg q]\!]^g_{\alpha}$ is true for all four histories that contain α including those
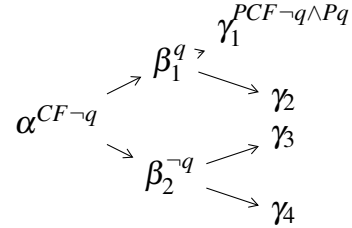
that run through β_1. However, the second conjunct of (4b) requires that q is true at β_1. This apparent contradiction can be resolved if we allow the agent to go a step back and reconsider his choice at α to CFq. Then, the intentional inference in (5) is unproblematic and the conflict with the second conjunct in (4b) does not arise. However, because this going-back and reconsideration of one's previous commitment are unjustified, we detect this move as weakness of will.

In case of accidental actions, the conflict does not arise because (6) does not require that $\neg q$ holds in all histories that contain α. Consider (7a) and its representation in (7b) which is identical to the one we gave for intentional cases. The evaluation of (7b) follows the same algorithm described for (4b).

(7)   a.   I didn't want to lose my keys, but I did.
       b. $PCF\neg q \wedge Pq$ (q = 'I lose my keys')

What is different in (7) is that the action is interpreted as accidental. Therefore, at α where $[\![CF\neg q]\!]_\alpha^h$ holds, (6) simply requires $[\![\Diamond q]\!]_\alpha^g$, i.e., it requires that $[\![q]\!]_\alpha^g$ is true in some history g that contains α. And we already have such a history $h = (\alpha, \beta_1, \gamma_1)$ which also makes the second conjunct of (7b) true. In other words, in case of accidental actions (because they are not controlled), there is no need to go back and unjustifiably reconsider one's choice (resolution, executive commitment) in order to have coherent reasoning about the action. Thus, the weakness of will inference is absent with accidental actions.

4.   Relevance to linguistic phenomena

4.1   Linguistic phenomena sensitive to the intentional/accidental distinction

The intentional/accidental distinction is relevant for explaining a number of linguistic phenomena that have recently received some attention in the literature. In this section, I illustrate this claim with three representative phenomena and point out to the literature that analyzes them. The goal of this illustration is to show that reasoning about action is relevant for linguistics and should be taken seriously. I will not attempt to account for these phenomena, but I will provide some pointers that connect their possible explanation to the representation of the weakness of will inference developed in the previous section.

The first cluster of phenomena are known under the name of *generalized subject obviation*, which subsumes directive obviation, subjunctive obviation, and pronominal subject obviation in mono-clausal and embedded configurations (e.g., Kaufmann 2019, Szabolcsi 2021). The best known case of generalized subject obviation is the so-called subjunctive obviation, in which the subject of the subjunctive clause cannot co-refer with the subject of the matrix clause. However, this restriction is weakened when the action described in the subjunctive clause is interpreted as accidental. Subjunctive obviation and its weakening are found in a number of languages, including Romance and Slavic languages. Examples in (8) are classical French examples from Ruwet 1991.

(8)   a.   * Je veux que je parte.   (French)
             I   want that I   leave-SBJV

'I want that I leave.'

b.   Je ne   veux pas   que je me trompe de clé.
         I NEG want NEG that I me misteke of key

'I don't want that I am mistaken about the key.'

The second cluster of linguistic phenomena sensitive to the interpretation of an action as intentional versus accidental concerns an aspectual restriction in imperatives and desire statements in Slavic languages (e.g., Forsyth 1970, Bogusławski 1985, Despić 2020, Goncharov 2020b). I will illustrate this using imperatives. Across Slavic languages, negative imperatives (unlike positive imperatives) are well-formed only with the imperfective aspect and cannot take verbs with the perfective aspect, cf. (9a) with (9b). This restriction, however, is lifted when the action expressed by the verb is accidental, see (9c).

(9)   a. Otkryvaj / otkroj   dver'! (Russian)
            open-IPFV / open-PFV door

'Open the door!'

b. Ne otkryvaj   / *otkroj   dver'!
      NEG open-IPFV / open-PFV door

'Don't open the door!'

c. Ne poterjaj ključi!
      NEG lose-PFV keys

'Don't lose the keys!'

The third phenomenon we will look at here is sensitivity of Polarity Sensitive Items (PSIs) to the interpretation of an action as intentional versus accidental (e.g., Szabolcsi 2004, Goncharov 2020a). To demonstrate this point, we take one particular phenomenon, namely anti-licensing of Positive Polarity Items (PPIs) in the complement of *not want*.

Szabolcsi (2004) observes that anti-licensing of PPIs formed with *some* in the infinitival complement of *not want* is sensitive to the interpretation of an action in the complement clause. When the action is intentional (as in the case of *eat* and *call*), *some* cannot have a narrow scope interpretation, see (10a). But with accidental actions (like *offend* or *break*), *some* can be interpreted under negation, see (10b). Sensitivity of *some* PPIs to the interpretation of an action as (un)intentional is also attested in Hebrew, Hungarian, Polish, Romanian, and Russian. The examples are from Szabolcsi 2004.

(10)   a. I don't want to call someone/eat something.   (some>not/*not>some)
       b. I don't want to offend someone/break something.   (some>not/not>some)

The easiest way to illustrate how the account of the weakness of will inference is relevant here is by using the facts about PPIs. Recall that accidental actions introduce a positive inference that somewhere along one of the possible futures p is true. This positive inference can be argued to have an intervening effect similar to the positive inference of downward-entailing but non-anti-additive quantifiers, such as *at most* and *few*. These quantifiers are known not to anti-license PPIs, see (11) (see Goncharov 2020a for details).

(11) a. At most ten men called someone.   (at most>some)

  b. Few men called someone.   (few>some)

The explanation of the generalized subject obviation and the aspectual restriction in Slavic along the same lines is also possible, but may be more involved.

4.2 Previous linguistic tests for the intentional/accidental distinction

In the previous literature, two linguistic tests have been proposed to tell apart intentional and accidental interpretations of actions: (i) modification by *(un)intentionally* and (ii) modification by rationale clauses introduced by *in order to* (e.g., Jackendoff 1972, 1995, Farkas 1988, 1992). We will see below that neither of these tests provides an adequate way for distinguishing between intentional and accidental interpretation that is relevant for the phenomena above. For example, we saw above that to predict licensing of *some* PPIs, we need a test that differentiates *call/eat* from *offend/break*.

Let us begin with the modification by *(un)intentionally* test. This test does not seem to be reliable on the following grounds. First, although *(un)intentionally* can tell apart actions for which the agent is responsible, as in (12a) and (12b) from actions for which he is not, as in (12c) and (12d), these adverbials are also incompatible with actions of the same kind. As illustrated in (13), *intentionally* is infelicitous with clearly intentional actions (because the modification is superfluous).[5]

(12) a. John hurt Mary intentionally.

  b. John fell off the ladder intentionally.

  c. #John resembles his father intentionally.

  d. #John is tall intentionally.

(13) a. #Mary baked the cake intentionally.

  b. #John wrote the novel intentionally.

Second, modification by *(un)intentionally* is context-dependent and both *intentionally* and *unintentionally* can modify actions like *call, eat* and *offend, break*. The examples in (14a) and (14b) show that *unintentionally* can modify verbs that normally express intentional actions, such as *call, eat*. The examples in (14c) and (14d) illustrate that verbs describing stereotypically unintentional actions, such as *lose, win*, can be modified by *intentionally* when a correct context is provided.[6]

(14) a. If an organization unintentionally calls a mobile number without consent, it is safeguarded against prosecution.

  b. Would you still be a vegan if you unintentionally ate an animal product?

  c. I intentionally lost a few chips so I would have less than everyone else.

  d. Nate has intentionally won a few games, I'm still not brave enough to do that as I don't like to see my little buddy upset and am a born people pleaser.

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[5] *(Un)intentionally* and its kin are focus sensitive. We put this point aside here.

[6] The examples in (14) and (16) are from the web.

Let us now look at modification by rationale clauses introduced by *in order to*. The examples in (15) show that rationale clauses are only compatible with actions that can be intentionally initiated by the agent:

(15)   a. John went home in order to see his mother.

          b. John bought a car in order to get to work quicker.

          c. #John grew taller in order to ...

          d. #John is descended from royalty in order to ... (Jackendoff 1995:220)

Because the verbs we are interested in (*call, eat, offend, break*) all express actions that can be initiated intentionally, modification by *in order to* cannot distinguish between them:

(16)   a. After a few minutes, the driver of the vehicle called the police in order to file a report.

          b. Eve ate the fruit in order to fulfill desires that God had already offered to meet.

          c. There can also be times when he will step on other people's toes and offend some sensibilities in order to achieve his goal.

          d. Thomas broke the handle in order to enter the room.

Given these facts, we see that there is a distinction between actions that are *initiated intentionally* and *intentional actions*, which we understand as actions that are initiated intentionally and are controlled by the agent. Actions that are initiated intentionally can be tested using modification by *in order to* clauses and *(un)intentionally*. The weakness of will test adds testing for the controllability component of intentional actions.

5.   Conclusion

In this paper, we saw that in some scenarios, sentences like *I didn't want to eat the cake but I did* have a clear weakness of will inference which states that the speaker was initially resolved or committed to one course of action, but acted contrary to her resolution. However, other sentences such as *I didn't want to lose the keys but I did* in comparable scenarios do not give rise to the same weakness of will inference. The goal of the paper was to answer the following questions: (i) how we can formulate the weakness of will inference and (ii) what the difference between predicates that give rise to the weakness of will inference and those that do not is. We saw how the weakness of will inference can be formulated albeit only in terms of propositional logic at this stage. The next step of this line of research is to translate this idea into compositional (dynamic) semantics. The answer to the second question is that those predicates that have the weakness of will inference are intentional, whereas those that do not are accidental. We saw that the intentional/accidental distinction is important for analysing a number of linguistic phenomena, such as generalized subject obviation, aspect choice in Slavic, and licensing of polarity sensitive items.

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