

MODALITY NOUNS AND THE CHOICE BETWEEN *TO*+INFINITIVE
AND *OF*+*ING*¹

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A case of syntactic variation only mentioned in passing (§13.24) in the otherwise very comprehensive *Grammar of Contemporary English* by Quirk et al. (1972) is

NP $\left\{ \begin{array}{l} \textit{to+inf.} \\ \textit{of+ing} \end{array} \right\}$

In some cases we here seem to have very strict rules governing the choice. For example, while (1 a) is fully acceptable, its variant (1 b) could hardly be used (cf. Table 1)

- (1) a. What is the probability of getting his permission to go?
b. *What is the probability to get his permission of going?

In other cases speakers are freer in their choice, as in (2):

- (2) He had the unpleasant duty $\left\{ \begin{array}{l} \textit{of pronouncing} \\ \textit{to pronounce} \end{array} \right\}$ the death sentence.

The present paper is restricted to NPs where the head is a noun denoting a modality. Modalities can be expressed in various ways, the most common being auxiliaries like *can*, *may*, and *must*, adverbs like *possibly*, *perhaps*, and *doubtless*, adjectives like *able*, *probable*, and *necessary*, and nouns like *ability*, *possibility*, and *obligation*. Hermerén (1978: 94—97) distinguishes three main types of modality: Internal, External, and Neutral, which for the present purposes will be defined as follows:

¹ For valuable comments on an earlier version of this paper I am grateful to Johannes Söderlind and Mats Rydén.

(a) *Internal modality*: The constituent expressing modality and the following verb share the same subject. Consequently their relationship may be illustrated thus:

John able (John go)

In the surface structure this may be realized as, for instance, *John can go* or *John's ability to go*.

(b) *External modality*: The constituent expressing modality and the following verb have different subjects, as in

Dick permit John (John go)

This can be realized as, for example, "*You may go*," said *Dick to John* or *Dick gave John permission to go*.

(c) *Neutral modality*: The subject of the constituent expressing modality is the clause consisting of the following verb and its subject, as in

Probable (John go)

where *John go* is the subject of *probable*. This can be realized as, for example, *That John will go is probable* or *The probability of John going*. If the subject of the verb is not specified, we get *The probability of going*.

The so-called root senses of the modal auxiliaries correspond to internal or external modalities and the epistemic senses to neutral modalities, for example

- (3) a. I can do it at once (= "I am able to" /root sense/ internal modality/)
 b. It can't be true (= "It is not possible" /epistemic sense/ neutral modality/)
- (4) a. He must come at once (= "He is obliged to" /root sense/external modality/)
 b. This must be a mistake (= "This is of necessity a mistake" /epistemic sense/neutral modality/)

Using Hermerén's tripartite division I made a list of the most common English modality nouns and found that we have here a much greater variety of lexical items than in the field of modal auxiliaries. For example, "ability" is expressed not only by the noun *ability* but also by such synonyms as *capability*, *capacity*, *competence*, *power*, *strength*, *skill*, and *talent*. Instances of the modality nouns on the list were then extracted from the concordances of the Brown and LOB (=Lancaster-Oslo-Bergen) corpora,² and a count was made of the number of times they were followed by *to*+infinitive and *of*+*ing*, respectively. Instances with other prepositions than *of* were also collected, but were not included in

² For detailed descriptions of these corpora see Francis (1964) and Johansson et al. (1978).

the statistics. A complete alphabetical survey of the modality nouns is given in Table 1. No differences worthy of special note as regards the following verbal construction were observed between Brown and LOB. In Table 2 all the modality nouns with at least six instances in Table 1 have been ordered according to whether they denote internal modalities (the top of the table), neutral modalities (the middle), or external modalities (the bottom). The vertical line divides the cases with *to*+infinitive from those with *of*+*ing*. It is easy to see that there is a direct link between the type of modality and the choice of the following verbal construction. The reason for this relationship may be that the English *-ing* form often has a generalizing function, while the infinitive is preferred in more specific situations (see e.g. Schibbye 1965:27). Compare *Skiing on wet snow is difficult* (general) and *To ski on this wet snow is difficult* (specific). In the case of modality nouns *to*+infinitive tends to follow those which have a specified personal subject, while *of*+*ing* tends to follow those which are impersonal. Note that we can speak about John's determination but not about John's probability.

Examples will first be given of cases where Brown and LOB show a 100% relationship between type of modality and verbal construction. After that cases of variation will be discussed in more detail. In the references after each example B=Brown and L=LOB.

Table 1. Alphabetical survey of modality nouns followed by *to*+inf and/or *of*+*ing* in Brown and LOB.

Modality noun	<i>To</i> +inf			<i>Of</i> + <i>ing</i>			% in Brown+LOB		Other prep
	Brown	LOB	Total	Brown	LOB	Total	<i>To</i> +inf	<i>Of</i> + <i>ing</i>	
Ability	46	39	85	1		1	98.8	1.2	For For
Agreement	6	3	9				100		
Aim		1	1	1	4	5	16.7	83.3	
Ambition	1	1	2				100		
Capability	3		3				100		
Capacity	20	9	29				100		
Chance	36	29	65	9	19	28	69.1	30.1	
Competence	1		1				100		
Compulsion	4	2	6				100		
Consent		1	1				100		
Decision	9	23	32				100		
Demand	3		3				100		
Design	1	2	3				100		
Desirability				2	4	6		100	
Desire	37	50	87				100		
Determination	10	11	21				100		
Disinclination	2		2				100		
Disposition	3	1	4				100		
Duty	3	2	5		5	5	50	50	

Modality noun	To+inf			Of+ing			% in Brown+LOB		Other prep
	Brown	LOB	Total	Brown	LOB	Total	To+inf	Of+ing	
Efficiency					1	1		100	
Encouragement	1	1	2				100		
Expectation				2		2		100	
Facility		1	1				100		
Faculty					1	1		100	
Freedom	6	5	11		1	1	91.7	8.3	
Hazard				1		1		100	
Hope				10	18	28		100	
Impossibility				1		1		100	
Inability	17	9	26				100		
Inclination	2	7	9				100		
Intention	4	12	16	16	13	29	35.6	64.4	
Invitation	3	9	12				100		
Knowledge		1	1	1		1	50	50	
Leave	2	1	3				100		
Liability	1	2	3				100		
Liberty					1	1		100	
Longing		2	2				100		
Necessity	2	5	7	10	8	18	28	72	For
Need	28	56	84	2	3	5	94.4	5.6	For
Object				1	2	3		100	
Obligation	6	8	14	1	2	3	82.4	17.6	
Obsession				1		1		100	
Opportunity	61	32	93	5	19	24	79.5	20.5	For
Order	2	2	4				100		
Permission	17	14	31				100		
Plan	8	6	14	1		1	93.3	6.7	
Possibility	1		1	10	13	23	4.2	95.8	For
Power	28	33	61	1	5	6	91	9	
Pressure	2	2	4				100		
Probability				3	5	8		100	
Proposal	4	9	13				100		
Prospect				3	3	6		100	
Purpose	3		3	15	13	28	9.7	90.3	
Readiness	7	9	16				100		
Refusal	11	8	19				100		
Request	1	2	3				100		
Resolution	4	2	6				100		
Responsibility	2		2	3	3	6	25	75	For
Risk				10	6	16		100	
Skill	3		3				100		
Strength	3	3	6				100		
Suggestion	1		1	1		1	50	50	
Talent	1		1				100		
Unwillingness	5	4	9				100		
Urge	3	10	13				100		For

Modality noun	To+inf			Of+ing			% in Brown+LOB		Other prep
	Brown	LOB	Total	Brown	LOB	Total	To+inf	Of+ing	
Will	2	5	7					100	
Willingness	11	11	22					100	
Wish	11	7	18					100	
Yearning	1		1					100	
Zeal	1	1	2					100	

A. Examples of internal modality nouns with only *to+inf*.

- (5) Mrs. Kennedy shows a *determination to* change all this (B F29 1320)
(6) a *resolution* was passed to boycott the non-recognized shop (L G3 130)
(7) I had told him that I didn't mean to reconsider my *decision not to* change my mind (B R5 250)
(8) He never showed any *desire to* revisit the Continent (L G35 92)
(9) I had no *wish to* hurt the geese (L R8 61)
(10) Dennis has the *will to* win (L E17 74)
(11) his *willingness to* die in aid of the great cause of human freedom (B J58 1790)
(12) he did not have Stark Young's *inclination to* romanticize and sentimentalize the planter (B G28 1030)
(13) Britain knew Germany was breaking the *agreement to* stop building bombers (L B6 11)
(14) It consists in a *readiness to* perceive and to act (L J52 45)
(15) I wouldn't have the *strength to* answer, he thought (B P14 1030)
(16) such conditions would have as a common factor the *capacity to* induce an attitude in the subject (B J28 1050)

B. Examples of neutral modality nouns with only *of+ing*.

- (17) to prevent the *risk of* accidentally pulling the shelf right out (L E25 52)
(18) the *probability of* having destroyed it is drastically lowered (B E3 490)
(19) She was more excited than frightened at the *prospect of* having her first child in a foreign land (B G37 220)
(20) He knew that Keenan was his only *hope of* getting medical attention (L L3 129)
(21) the *desirability of* having an approximately logarithmic scale (L J10 180)

It might be argued that in (20) the construction is

He hope (he get)

and that *hope* therefore expresses internal modality. However, it seems as if there is some underlying neutral modality predicate, e.g. POSSIBLE, that

Table 2. Modality nouns with at least six instances in the corpora arranged in the order internal — neutral — external modality.

To+infinitive	Of+ing
Determination	100%
Resolution	100%
Decision	100%
Desire	100%
Wish	100%
Will	100%
(Un)willingness	100%
(Dis)inclination	100%
Agreement	100%
Readiness	100%
Strength	100%
Capacity	100%
(In)ability	99%
Plan	93%
Freedom	92%
Power	91%
Opportunity	79%
Chance	70%
	64% Intention
	83% Aim
	90% Purpose
	96% (Im)possibility
	100% Risk
	100% Probability
	100% Prospect
	100% Hope
	100% Desirability
	75% Responsibility
	72% Necessity
	50% Duty
Obligation	82%
Need	94%
Urge	100%
Proposal	100%
Invitation	100%
Permission	100%
Refusal	100%

intervenes between *hope* and *get* and governs the choice of *of+ing*. An argument in favour of this explanation is that we can, without much change of meaning, substitute *possibility* for *hope* in (20).³ On similar grounds *risk* can be said to mean “undesired possibility” and *prospect* “expected possibility”.

³ If it is correct that an underlying predicate here determines the choice of construction, then its influence must have been less strong in earlier periods. According to Visser (1972: 1116), *hope* belongs to a group of nouns where the use of *of+ing* has increased at the cost of *to+inf.*

C. Examples of external modality nouns with only *to+infinitive*.

- (22) he dropped a hundred-yen coin and then he had an *urge to* sound the bell before the temple (B P25 1440)
 (23) Berkswell Parish Council strongly opposes any *proposal to* close the footpath (L A27 198)
 (24) Recently I received an *invitation to* attend the Annual Dinner (L E12 59)
 (25) No, I have no *permission to* enter Germany (B G47 460)
 (26) There was a fundamental *refusal to* understand and to believe (L D8 41)

We will now turn to the two variable areas of Table 2 and in discussing the modality nouns that occur there also look at the number of their instances in Table 1. We note first of all that the typical internal modality noun *ability* has, besides 85 instances of *to+inf.*, also one instance of *of+ing* and that, conversely, the typical neutral modality noun *possibility* has, besides 23 instances of *of+ing*, also one instance of *to+inf.* Examples (27) and (28) illustrate the normal constructions after these nouns, while (29) and (30) give the exceptional cases.

- (27) Some animals have a pronounced *ability to* turn a deaf ear (L F40 73)
 (28) To them we are grateful beyond the *possibility of* conveying in words how grateful we are (B H25 580)
 (29) a living writer ... , who is known for his *ability of* manipulating his ideas and his craft (B J62 740)
 (30) a flood of inventions which increased the *possibility for* man *to* coexist with man (B G11 310)

It is difficult to see any special reason for *of+ing* in (29) apart from possible analogy with nouns like *practice*, where *of+ing* has a defining or specifying function (cf. Söderlind 1958: 93–100). In (30), on the other hand, the explanation is no doubt that the infinitive is part of the common construction *for — to* (cf. Quirk et al. 1972: 739–40). We have here an instance of so-called Factual (or Practical) Possibility (“It is possible for someone to...”) as opposed to Theoretical Possibility (“It is possible that...”). Cf. a similar example in Rathay (1979: 113).

The noun *freedom*, which is normally constructed with *to+inf.* on the basis of the underlying idea

You free (you go)

has the following instance of *of+ing*:

- (31) the *freedom of* holding an opinion and expressing it (L N12 19)
 It is possible that the generalizing nature of this sentence has caused the use of *of+ing*; it may be compared with the following example with *to+inf.*, where there is a specifying subject:

(32) such schemes leave the worker some *freedom to regulate* the relationship between effort and reward (L H12 27)

As a rule *power* is followed by *to+inf.*, but just as in the case of *ability*, *of+ing* occasionally occurs. This is exemplified by a and b of (33) where *power*=“ability”, and (34), where *power*=“authority”.

(33) a. But to-as many as received him he gave the *power of* becoming sons of God (B D16 1190)

b. This gives him the *power to* form in his mind new image combinations of old memories (B F16 1380)

(34) a. The *power of* granting temporary leave of absence (L H29 142)

b. the *power to* make binding rules (L J49 98)

79 and 70 per cent, respectively, of the examples with *opportunity* and *chance* have *to+inf.*, e.g. (35) and (36).

(35) Maude had the *opportunity to* take the bottle of opium from Sarah's room (B L9 1170)

(36) he mischievously looked for a *chance to* hit back (L G16 111)

It seems as if the meaning of a *chance to hit* in (36) can be analyzed as

Happen (he able (he hit))

i.e. the sentence can be paraphrased as “he looked for it to happen that he would be able to hit back”. *Opportunity* in (35) can be paraphrased in a similar way. However, *opportunity* and *chance* also have a semantic kinship with *possibility*, and this may account for the many instances of *of+ing*, as in (37) and (38).

(37) her cousin took pleasure in the *opportunity of* annoying her (L G7 156)

(38) But neither team looked as if they had any *chance of* becoming championship contenders (L A22 186)

The nouns *plan*, *intention*, *aim*, and *purpose* form a group with great internal differences as regards the following construction. *Plan* normally has *to+inf.*, as in (39), ex. (40) being the only one in the corpus with *of+ing*.

(39) There is now no *plan to* raise fresh capital (L A16 96)

(40) He emphasized to the Presiding Elder the *plan of* giving up the old church and moving across the river (B K4 1130)

With the other three nouns in the group, on the other hand, *of+ing* predominates, as in (41) — (43).

(41) Ross had no *intention of* searching for the assassin (B N11 850)

(42) The first chapter states the *aim of* establishing “harmonious development” (L F15 138)

(43) Analysis in role-playing is usually done for the *purpose of* understanding strong and weak points of individuals (B J30 30)

As a rule items preceding the modality nouns, e.g. determiners, seem to have little influence on the choice of verbal construction. However, *no intention* and *for the purpose* constitute striking exceptions, for 17 out of 18 examples with *no intention*, as in (41), and all 23 examples with *for the purpose*, as in (43), have *of+ing*, while in other cases with *intention* and *purpose* the frequency of *to+inf.* does not differ much from that of *of+ing*. Cf. a and b of (44) and (45).

(44) a. at the end of November 1881 he makes a note of an *intention to* resume poetry as soon as possible (B J65 810)

b. He excited a lot of curiosity by announcing his *intention of* taking a holiday in Australia this month (L F44 107)

(45) a. Emory University will recognize no obligation and will adopt no policy that would conflict with its *purpose to* promote excellence in scholarship and Christian education (B A22 360)

b. he had come with the express *purpose of* seeing Joanna (L P5 76)

Aim is followed by *to+inf.* in the following example:

(46) all this fitted in with Dan Maffrey's *aim to* avenge himself with the Fenton bunch (L N6 197)

On the whole it seems as if *to+inf.* is used with the above group of nouns when the emphasis is on the internal processes of planning, intending, aiming, and purposing, while *of+ing* is used to define the goal (cf. NID, s.v. *intention*: 1. an act of intending, 2. an intended object: AIM, END). *Of+ing* is regularly used after *no intention* and *for the purpose*, the only exception in the corpus being (47).

(47) they stressed that there was *no intention to* intervene in fighting (L B1 143)

In the variable area between neutral and external modalities in Table 2 we note first of all that *necessity* has 72% *of+ing*, whereas *need* has 94% *to+inf.* *Necessity* denotes a stronger urgency than *need* and is more often associated with the neutral construction “It is necessary (inevitable) that...” than *need*, which instead is usually associated with the personal construction

Someone's need oblige me (I help)

Examples (48) and (49) illustrate this.

(48) Such containment, however, will be complicated by the *necessity of* providing suitable insulating seals (L J1 177)

(49) Mama was vulnerable; one had always felt the *need to* make a safe world around her (B P4 280)

In (50) and (51), however, *necessity* is followed by *to+inf.* and *need* by *of+ing*.

- (50) He not only felt his need of her but was equally aware of the *necessity to* help and protect her, even against her will (L L4 65)
 (51) A number of religions also satisfy for many the *need of* being linked with the ultimate and eternal (B J23 350)

In (50) the use of *necessity* can very well be due to the author's wish to avoid repetition of the word *need*. In (51) *need of* gives the verbal construction a more solemn tone than *need to* would have given it. With existential *there*, *need to* is especially common, but *necessity to* also occurs:

- (52) There's no *need to* bother her now (L N13 162)
 (53) The source is known so there is no *necessity to* remove insecticide residues (B F4 1410)

Responsibility, *duty*, and *obligation* form a scale from predominant *of+ing* to predominant *to+inf.* In (54) — (56) with *of+ing* it is near at hand to replace these nouns with a noun like *job*, whose content is then further defined by the *of+ing* phrase.

- (54) Trochu's oath never to capitulate made it impossible for him to undertake the *responsibility of* negotiating surrender (L J57 121)
 (55) This also gave them the unpleasant *duty of* being spokesmen for the mission (B G59 1400)
 (56) no one wholly escapes from the unpleasant *obligation of* carrying out tank repair (L J28 27)

In (57) — (59), on the other hand, these nouns are more strongly associated with a notion of external compulsion.

- (57) they also have the *responsibility to* raise by a tax "a sum not less than nor more than" a specified amount as ordered by a city council or financial town meeting (B H5 1540)
 (58) Masters of all ships have an express *duty to* render assistance to persons in danger at sea (L F22 23)
 (59) If nothing is produced, there is no *obligation to* repay (B H1 2060)

It has been shown in this paper that nouns denoting internal or external (=root) modalities, e.g. *decision* and *permission*, are normally followed by *to+infinitive*, while nouns denoting neutral (=epistemic) modalities, e.g. *probability*, are normally followed by *of+ing*. The reason for this difference is probably that the specifying function of the *to*-infinitive makes it especially suitable for cases where the subject is given in the context, while the generalizing function of *ing* makes *of+ing* especially suitable for neutral subjectless constructions. However, *of+ing* also has a defining function in relation to

nouns and this seems to account for several instances of *of+ing* where the idea of internal or external modality is less strong.

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DICTIONARY

NID₃=*Webster's third new international dictionary*. 1964. Springfield, Mass.: Merriam.