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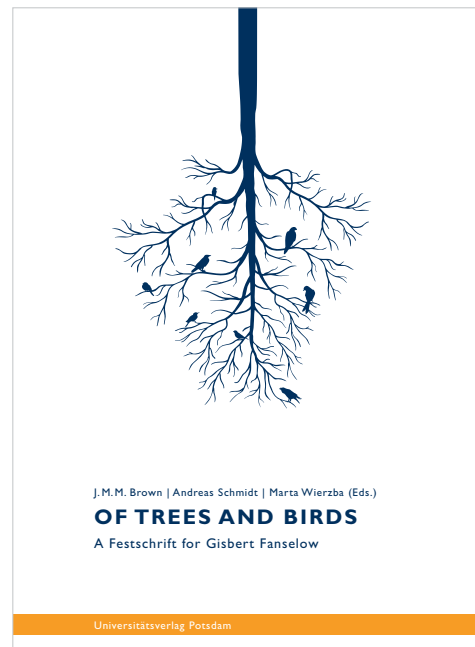
### **Of trees and birds**

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# Towards a Fanselowian analysis of degree expressions<sup>1</sup>

Julia Bacskai-Atkari, Universität Konstanz

## 1 Introduction

Degree constructions constitute an important area of syntactic research in generative grammar, since at least the landmark paper of Bresnan (1973). While Bresnan's paper addresses both comparatives and degree equatives, most of the subsequent literature focuses on comparatives proper. The two constructions are illustrated in (1) below:

- (1) a. The eagle is as big as the vulture.  
b. The eagle is bigger than the falcon.

In both examples, two degrees are compared: the degree to which the eagle is big is the same (or higher) as the degree to which the vulture is big in (1a), rendering a degree equative, while in (1b), illustrating comparatives proper, it is definitely higher than the degree to which the falcon is big. The strings *as the vulture* and *than the falcon* constitute the standard value of comparison (to which something is compared, in this case the size of the eagle): I assume that in Germanic languages, these are reduced CPs (see, for instance, Bacskai-Atkari 2018).

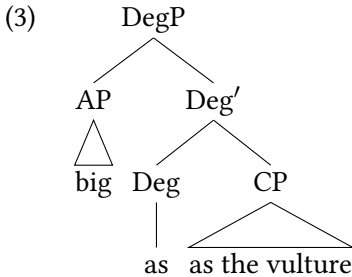
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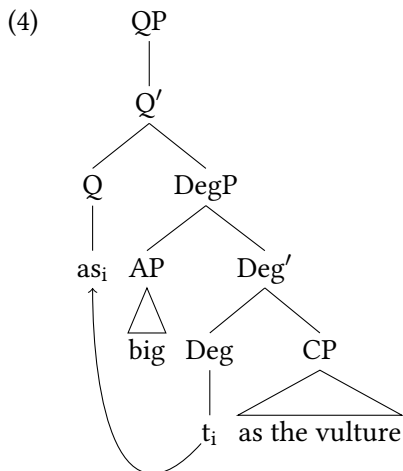
It is a well-known fact that the matrix degree element imposes selectional restrictions on the element introducing the standard value. For instance, if the matrix element is *as*, then the standard is introduced by *as*, see (1a), and not by *than*, see (2):

(2) \*The eagle is as big than the woodpecker.

Based on this observation, it has been proposed in the literature (Lechner 2004: 22) that the comparative standard (*than*-CP or *as*-CP) is the complement of the degree head. The gradable adjective (e.g. *big*) can then be located in the specifier of the DegP. Adopting this view for equatives like (1a) above, the following structure arises:



While this structure successfully caters for selectional restrictions (as well as for various other problems not to be discussed here), there is an obvious problem with the word order: the representation in (3) gives the string *big as as the vulture*, which is obviously not the desired output. Note that Lechner (2004) considers only cases of morphological comparatives like (1b), where the matrix degree marker is *-er* and in fact assumes that *bigger* is an AP (unlike the compositional approach of Bresnan 1973). However, taking *as big* to be an AP would be highly questionable, and hence the analysis of Lechner (2004) necessarily runs into a problem. In order to overcome this, Bacskai-Atkari (2014, 2018), building on an original footnote of Lechner (1999), proposes that there is an additional QP layer on top of the DegP, and the degree element moves from Deg to Q, as given in (4) below:



This structure produces the right word order; in addition, certain modifiers showing agreement with the degree element can be located in the specifier of the QP (Bacsikai-Atkari 2018: 36–43). However, the question arises why movement takes place in the first place as there seems to be no obvious trigger. In what follows, I am going to argue that the head movement of the degree element indeed takes place and that it is in essence similar to the Münchhausen-style head movement proposed by Fanselow (2004).

## 2 Münchhausen-style head movement

Head movement probably constitutes one of the most problematic issues in minimalist syntax: while it seems evident that head movement exists, analyses attempting to answer how it works (including the issue whether it is really a “head” that moves) tend to run into theoretical problems. This is extensively discussed by Fanselow (2004), who provides an attractive alternative to previous approaches (see also a recent critical overview by Dékány 2018 on head movement, though note that she does not offer an alternative herself).

German, like indeed most Germanic languages, is well-known for its so-called V2 property: the finite verb in main clause declaratives occupies the second position in the linear string, and is preceded by one constituent. This is illustrated in (5a) and (5b) below: the examples also show that the first position is not tied to a particular function (for instance, subject). The example in (5c) shows that the verb is not fronted to the second position in embedded clauses but remains in its base position; while in some other Germanic languages (like Yiddish, as Fanselow 2004: 34 also mentions), verb movement is possible if a complementiser like *dass* “that” is inserted (see also Vikner 1995), this is excluded in German, suggesting that the complementiser somehow appears in the same position as the finite verb in main clauses.

- (5) a. Gisbert **hat** gestern einen Graureiher im  
 Gisbert has yesterday a.MASC.ACC grey.heron in.the  
 Wildpark gesehen.  
 Wildpark seen  
 ‘Gisbert saw a grey heron in the Wildpark yesterday.’
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 yesterday has Gisbert a.MASC.ACC grey.heron in.the  
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 ‘Gisbert saw a grey heron in the Wildpark yesterday.’
- c. Ich glaube nicht, **dass** Gisbert gestern im  
 I believe.1SG not that Gisbert yesterday in.the  
 Wildpark einen Papageitaucher gesehen hat.  
 Wildpark a.MASC.ACC Atlantic.puffin seen has  
 ‘I don’t think that Gisbert saw an Atlantic puffin in the Wild-  
 park yesterday.’

It is a standard assumption (see also, for instance, den Besten 1989, Fanselow 2002, 2004, Frey 2005) that in V2 patterns, the verb is in C and the first constituent is in the specifier of the CP. The movement of the verb to C posits some problems for the theory: it can potentially be an

instance of head adjunction, which has certain problems, but it definitely cannot be treated as remnant phrasal movement, as shown by Fanselow (2004). Instead, Fanselow (2004: 23–27) proposes that the moved head is attached to a non-minimal projection, and that after such movement takes place, either of the elements may project. If an element X is merged to a YP, either X or YP may project: if YP projects, this is an instance of phrasal movement (and X is in fact a maximal projection), as in the case of the first constituent moving to the specifier of the CP. If X projects, then this is an instance of head movement, as in the case of verb fronting: there is in this sense no pre-given C (and, strictly speaking, no CP either). The movement operation is triggered by the need to check a feature at a given point in the structure where the element carrying the feature is too deep.

In our case, we can suppose that TP has a finiteness feature, [*fin*], that needs to be checked (Fanselow 2004: 30) and while TP was in fact projected from the verb, the strong feature cannot be checked automatically. The only possibility is to re-merge (move) the verb possessing the finiteness feature: this ultimately produces a finite clause (as the satisfied finiteness feature projects as a label), which is, without the addition of clause-type markers proper (e.g. interrogative elements) is declarative. In the absence of verb movement, as in the embedded clause in (5c), a finite complementiser is merged (external merge).

### 3 Movement in equative phrases

Since the model based on Münchhausen-style head movement applies to all instances of head movement, it naturally carries over to the kind of movement described in section 1 above. The question is rather what feature triggers this movement. Unlike the case of finiteness and TP, where finiteness may be marked by an externally merged element as well, the separation of Q and Deg in the literature on comparatives does not easily suggest that there is a strong quantifier feature somehow independent of the degree feature.

But the fundamental question is whether elements like English *as* and German *so* are necessarily degree elements. Let us consider the following examples from German:

- (6) a. Die Eule ist **so schlau** wie die Krähe.  
 the.FEM owl is so smart as the.FEM crow  
 ‘The owl is as smart as the crow.’
- b. **So** einen Graureiher hat Gisbert gestern in Golm  
 so a.MASC.ACC grey.heron has Gisbert yesterday in Golm  
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 seen  
 ‘Gisbert saw such a grey heron in Golm yesterday.’

In (6a), the element *so* refers to a certain degree of a given quality (smartness), while in (6b), it refers to an unspecified quality without making reference to any degree. The construction in (6b) is a non-degree equative or similitive construction (cf. Haspelmath & Buchholz 1998), as it simply expresses that the grey heron in question is similar to the one that Gisbert saw the day before but there is crucially no gradable property mentioned. In this sense, it is very improbable that *so* should be treated as a degree marker in this case, there being no degree notion whatsoever.

As indicated in (6), degree and non-degree interpretations differ from each other also with respect to the presence or absence of a gradable predicate (an adjective in this case): there is a gradable adjective (*schlau*) in (6a) but not in (6b). Of course, the element *so* takes a *wie*-clause in (6a) but not in (6b); however, non-degree equatives may also feature a *wie*-clause, as in (7):

- (7) Die Eule ist **so** wie die Krähe.  
 the.FEM owl is so as the.FEM crow  
 ‘The owl is like the crow.’

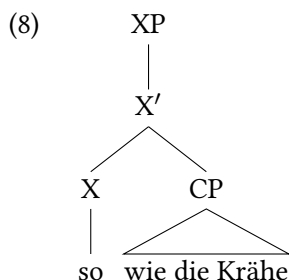
The example in (7) differs from that in (6a) only regarding the presence or absence of the adjective (*schlau*); this indicates that while the degree complement (the *wie*-clause) is possible both with degree and non-degree interpretations, the presence of the gradable adjective makes a difference here. The availability of the complement clause suggests that the underlying syntax is similar: here I would like to take up the claim



made by Hohaus & Zimmermann (2014) that the element *so* is semantically not tied to a degree interpretation either. Crucially, this strongly suggests that the degree notion should not be pre-given in the syntax either.

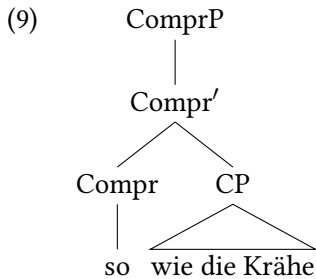
Considering now the representation given in (4) (and also in (3), for that matter), it seems obvious that the analysis so far is very much dependent on the notion of degree. In other words, we seem to have the following problem. On the one hand, based on the argumentation given in section 1, it should be obvious that there are two functional projections including head movement of the equative element from the lower to the higher head. On the other hand, while non-degree equatives seem to take a complement analogous to degree equatives, there is no AP in the specifier of the DegP and in fact no obvious reason for postulating a QP layer and head movement; moreover, it is difficult to see why *so* should be labelled as Deg if it is not associated with degree in a non-degree equative construction.

Let us consider the following scenario. Taking non-degree equative (similative) constructions, there should be a functional projection headed by the element *so*, hosting the *wie*-clause as a complement. Calling this projection XP, the structure is as follows:



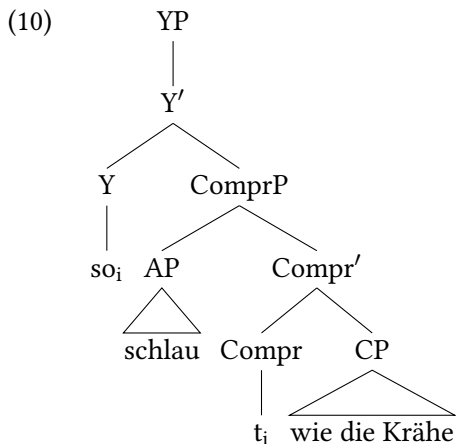
As discussed before, there is no gradable predicate in the specifier, and hence there is, in strict minimalist terms, no specifier either (the X-bar conventions are used here for representational purposes only to visualise the relative position of various elements). In addition, there is no further layer projected as there is nothing in a structure like (7), or in (6b), that would indicate the necessity thereof.

The question arises what the label of X actually is. My aim here is not so much to introduce various new functional projections in the syntax as rather to try to determine what happens syntactically and semantically at a given point in the derivation: in this sense, the labels proposed here are clearly descriptive, but they are ideally congruent with the relevant properties to be represented. At any rate, what X expresses is similarity without making reference to a degree: in other words, X merely expresses some kind of comparison. Let us therefore call it ComprP (comparative phrase):



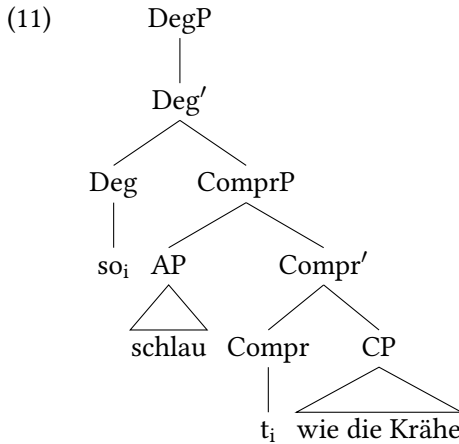
This kind of comparison allows for a comparative complement but makes no reference to degree. Expressing comparison is an inherent property of elements like *so* and *as* and requires no further projections.

In degree equatives, the comparative head is associated with degree and takes an AP argument in the specifier. As described in section 1, there is in these cases a further projection triggering the movement of the equative head. Calling this projection YP, the structure is as follows:



Crucially, (10) differs from (9) in the argument-taking abilities of the Compr head and in whether a degree interpretation arises: I assume that the two are actually interrelated, i.e. a degree interpretation arises with Compr heads that take an AP argument in addition to the complement. It is logical to suppose that such heads differ in their feature properties from ones that do not have this argument. There should therefore be an additional feature triggering head movement.

Adopting the Münchhausen-style head movement based on Fanselow (2004), as presented in section 2 above, this should be a strong feature present on the head undergoing movement, and the movement of the head checks off the feature in question on ComprP. Since the difference between equatives that involve head movement and ones that do not lies in the presence or absence of degree, I suggest that this feature is itself degree, call it [deg], and hence the label projected is DegP. The structure is then as follows:



Again, just as with the movement of the verb to C, there is in fact no head prior to movement in the Deg position, as the position itself is created by movement. The representation in (11) gives the right word order, just like the one in (4); however, unlike in (4), the movement of the head is motivated by a feature.

Note that equative elements differ from each other with respect to this feature. In German, the element *so* may or may not be specified as [deg], whereas English *as* is always specified as [deg], contrasting with English *so*.

Naturally, this also means that the original QP layer is lost, as the DegP is actually higher in the structure than originally supposed. The difference is, however, more than simply changing the labels of the relevant projections. The original idea was contingent upon the presence of degree and could not have accommodated non-degree equatives without additional assumptions. The present proposal starts from non-degree equatives and treats degree as a secondary property that is not necessarily present in comparison constructions.

## 4 Conclusion

In this article, I proposed a reconsideration of the structure of degree expressions, concentrating on degree and non-degree equatives. I argued

that equative elements like *as* and *so* do not directly project a degree phrase (DegP) but rather a comparative phrase (tentatively referred to as ComprP), which projects further via head movement only in degree equatives. One immediate advantage is that non-degree equatives may be accommodated into the structure without further assumptions. Another advantage is that degree can in this way be taken as the feature driving head movement, and no additional head has to be postulated in a higher functional projection. I argued that this movement operation is analogous to the Münchhausen-style head movement proposed by Fanselow (2004) for verb movement to C in German main clauses, and hence the higher head position is created by movement itself. Naturally, future research will have to investigate how other comparison constructions fit into the proposal exactly; nevertheless, the present proposal can be taken as a first step in the direction of a more principled account building on general properties of head movement.

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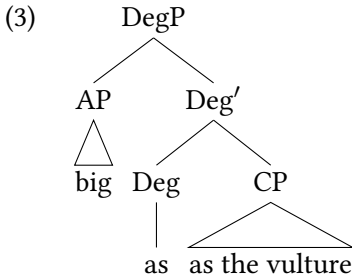
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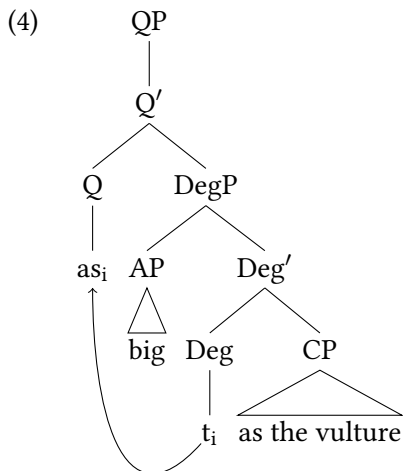
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As indicated in (6), degree and non-degree interpretations differ from each other also with respect to the presence or absence of a gradable predicate (an adjective in this case): there is a gradable adjective (*schlau*) in (6a) but not in (6b). Of course, the element *so* takes a *wie*-clause in (6a) but not in (6b); however, non-degree equatives may also feature a *wie*-clause, as in (7):

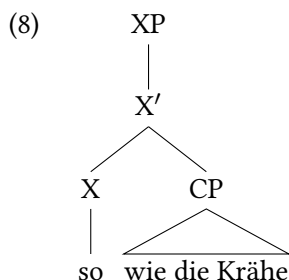
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 ‘The owl is like the crow.’

The example in (7) differs from that in (6a) only regarding the presence or absence of the adjective (*schlau*); this indicates that while the degree complement (the *wie*-clause) is possible both with degree and non-degree interpretations, the presence of the gradable adjective makes a difference here. The availability of the complement clause suggests that the underlying syntax is similar: here I would like to take up the claim

made by Hohaus & Zimmermann (2014) that the element *so* is semantically not tied to a degree interpretation either. Crucially, this strongly suggests that the degree notion should not be pre-given in the syntax either.

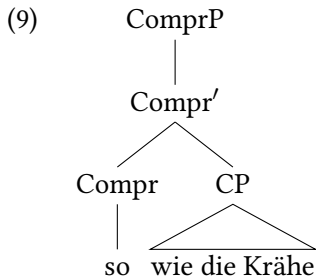
Considering now the representation given in (4) (and also in (3), for that matter), it seems obvious that the analysis so far is very much dependent on the notion of degree. In other words, we seem to have the following problem. On the one hand, based on the argumentation given in section 1, it should be obvious that there are two functional projections including head movement of the equative element from the lower to the higher head. On the other hand, while non-degree equatives seem to take a complement analogous to degree equatives, there is no AP in the specifier of the DegP and in fact no obvious reason for postulating a QP layer and head movement; moreover, it is difficult to see why *so* should be labelled as Deg if it is not associated with degree in a non-degree equative construction.

Let us consider the following scenario. Taking non-degree equative (similative) constructions, there should be a functional projection headed by the element *so*, hosting the *wie*-clause as a complement. Calling this projection XP, the structure is as follows:



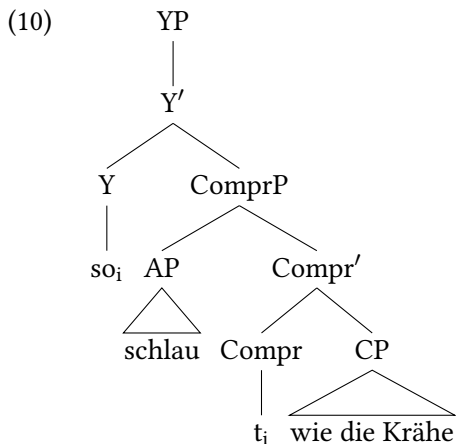
As discussed before, there is no gradable predicate in the specifier, and hence there is, in strict minimalist terms, no specifier either (the X-bar conventions are used here for representational purposes only to visualise the relative position of various elements). In addition, there is no further layer projected as there is nothing in a structure like (7), or in (6b), that would indicate the necessity thereof.

The question arises what the label of X actually is. My aim here is not so much to introduce various new functional projections in the syntax as rather to try to determine what happens syntactically and semantically at a given point in the derivation: in this sense, the labels proposed here are clearly descriptive, but they are ideally congruent with the relevant properties to be represented. At any rate, what X expresses is similarity without making reference to a degree: in other words, X merely expresses some kind of comparison. Let us therefore call it ComprP (comparative phrase):



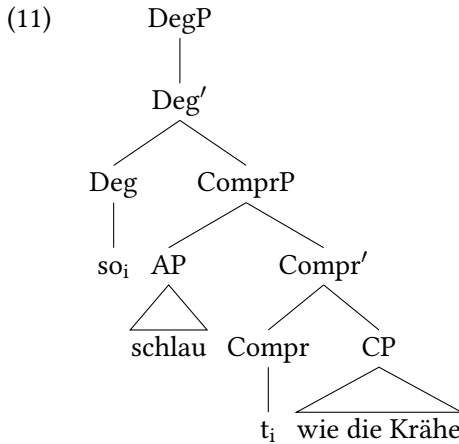
This kind of comparison allows for a comparative complement but makes no reference to degree. Expressing comparison is an inherent property of elements like *so* and *as* and requires no further projections.

In degree equatives, the comparative head is associated with degree and takes an AP argument in the specifier. As described in section 1, there is in these cases a further projection triggering the movement of the equative head. Calling this projection YP, the structure is as follows:



Crucially, (10) differs from (9) in the argument-taking abilities of the Compr head and in whether a degree interpretation arises: I assume that the two are actually interrelated, i.e. a degree interpretation arises with Compr heads that take an AP argument in addition to the complement. It is logical to suppose that such heads differ in their feature properties from ones that do not have this argument. There should therefore be an additional feature triggering head movement.

Adopting the Münchhausen-style head movement based on Fanselow (2004), as presented in section 2 above, this should be a strong feature present on the head undergoing movement, and the movement of the head checks off the feature in question on ComprP. Since the difference between equatives that involve head movement and ones that do not lies in the presence or absence of degree, I suggest that this feature is itself degree, call it [deg], and hence the label projected is DegP. The structure is then as follows:



Again, just as with the movement of the verb to C, there is in fact no head prior to movement in the Deg position, as the position itself is created by movement. The representation in (11) gives the right word order, just like the one in (4); however, unlike in (4), the movement of the head is motivated by a feature.

Note that equative elements differ from each other with respect to this feature. In German, the element *so* may or may not be specified as [deg], whereas English *as* is always specified as [deg], contrasting with English *so*.

Naturally, this also means that the original QP layer is lost, as the DegP is actually higher in the structure than originally supposed. The difference is, however, more than simply changing the labels of the relevant projections. The original idea was contingent upon the presence of degree and could not have accommodated non-degree equatives without additional assumptions. The present proposal starts from non-degree equatives and treats degree as a secondary property that is not necessarily present in comparison constructions.

## 4 Conclusion

In this article, I proposed a reconsideration of the structure of degree expressions, concentrating on degree and non-degree equatives. I argued



that equative elements like *as* and *so* do not directly project a degree phrase (DegP) but rather a comparative phrase (tentatively referred to as ComprP), which projects further via head movement only in degree equatives. One immediate advantage is that non-degree equatives may be accommodated into the structure without further assumptions. Another advantage is that degree can in this way be taken as the feature driving head movement, and no additional head has to be postulated in a higher functional projection. I argued that this movement operation is analogous to the Münchhausen-style head movement proposed by Fanselow (2004) for verb movement to C in German main clauses, and hence the higher head position is created by movement itself. Naturally, future research will have to investigate how other comparison constructions fit into the proposal exactly; nevertheless, the present proposal can be taken as a first step in the direction of a more principled account building on general properties of head movement.

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