Gradable abstract nouns and eventualities[1]

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Abstract. This paper proposes that gradable abstract nouns (GNs) such as *beauty* and *bravery* and related gradable adjectives (GAs) such as *beautiful* and *brave* have a shared semantic root, namely a measure function on STATES. However, GAs and GNs are lexicalized as being of a different semantic type. The proposal explains why GNs and GAs share properties such as gradability, but also why they differ. For instance, it account for why GNs do imply positive readings above a certain contextual standard. The paper additionally provides data supporting the view that GNs can be categorised as either *dispositional* or *non-dispositional*. Only dispositional GNs allow for unrestricted spatiotemporal location (*Alex's bravery/?beauty in the courthouse yesterday*). This is analysed as a routinised coercion from STATES to actions that manifest those dispositional STATES.

Keywords: abstract noun, gradable noun, gradable adjective, countability, degree semantics, even semantics, eventualities, aspectual class.

1. Introduction

This paper primarily concerns *gradable abstract nouns* (GNs), examples of which in English include *beauty*, *bravery*, *courage*, *guilt*, *honesty*, and *wisdom*. These nouns are gradable insofar as they allow for degree modification (e.g., *more/equally/considerably brave*), and they are abstract nouns insofar as they do not denote concrete individuals, objects or stuff (c.f., *cat*, *chair*, *mud*). GNs are morphologically related to gradable adjectives (GAs). Typically, the gradable adjective is the morphologically simpler form, however this is not always the case. For instance *guilty* is derived from *guilt* (also *schuldig* from *Schuld* in German), see Table 1.

There are similarities between GAs and related GNs in terms of degree modification and (constraints upon) spatiotemporal modification, but they also pattern differently when it comes to available readings with quantifiers such as *a lot (of)*, and whether they imply a high degree in relation to the relevant property in certain constructions. One of the goals of this paper is to account for these similarities and differences. To this end, I propose that GAs and GNs share a common semantic core, namely a measure function on STATES, however that there is a type distinction between GAs ($\langle s, \langle v_s, \langle d, \langle e, t\rangle\rangle\rangle\rangle$) and GNs ($\langle s, \langle v_s, \langle d, t\rangle\rangle\rangle$).[2]

Additionally, the case shall be made, that, in terms of their grammatical reflexes, there are at least two classes of GNs: DISPOSITIONAL (e.g. *bravery*) vs. NON-DISPOSITIONAL (e.g. *beauty*). The intuitive difference between dispositional and non-dispositional GNs is that the former denote

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[2]I use the following conventions for types: e for concrete individuals/entities/stuff; t for truth values; s for situations/worlds; d for DEGREES; and v for eventualities. I use *eventualities* to cover STATES, PROCESSES, and EVENTS in the sense of Mourelatos 1978 with v_s as a sort of v for STATES.

Property	English GA		English GN	Finnish GA		Finnish GN	German GA		German GN
BEAUTY	beautiful	←	beauty	kaunis	→	kauneus	schön	→	Schönheit
COURAGE/	courageous	←	courage	rohkea	→	rohkeus	mutig	←	Mut
BRAVERY	brave	→	bravery				tapfer	→	Tapferkeit
GUILT	guilty	←	guilt	syyllinen	→	syyllisyys	schuldig	←	Schuld
HONESTY	honest	→	honesty	rehellinen	→	rehellisyys	erhlich	→	Erhlichkeit
WISDOM	wise	→	wisdom	viisas	→	viisaus	weise	→	Weisheit

Table 1: GA and GN pairs in English, Finnish and German. Arrows indicate derivational dependencies, 'is derived from', such that a ← b means that a is morphologically derived from b.

STATES that are dispositions to act in a certain way. For instance, *bravery* denotes a STATE in which an individual is disposed to perform actions that would be judged as manifestations of their bravery. In terms of their grammatical reflexes, only dispositional noun make accessible, to the grammar, a set of eventualities that manifest the STATES that they denote.

In section 2, an overview of the differences and similarities between GNs and GAs is provided, and a motivation for the dispositional/non-dispositional distinction for GNs is given. Section 3 provides a brief overview of some previous proposals for the semantics of GNs and GAs. The analysis is given in section 4, and then compared with other proposals in section 5.

2. Data

2.1. Parallels and differences between GAs and GNs

GAs can be combined with degree modifiers such as *more*, *very* and *equally* as in (1a). A similar pattern can be found for GNs as in (1b) (see, e.g., Nicolas 2002, 2010; Doetjes 1997):

(1) a. more/equally/considerably brave/beautiful/honest
b. more/equal/considerable bravery/beauty/honesty

Another distributional similarity between GAs and GNs is that if a GA is felicitous with spatiotemporal modification, then so is the related GN, and if a GA is not felicitous with spatiotemporal modification, then neither is the related GN (see also e.g., Moltmann 2013; Zato 2020):

(2) a. Alex was brave/honest yesterday in the court room.
b. Alex's bravery/honesty yesterday in the court room was noteworthy.

(3) a. ?Alex was beautiful/intelligent yesterday in the court room.
b. ?Alex's beauty/intelligence yesterday in the court room was noteworthy.

I return to the issue of spatiotemporal modification in more detail in section 2.2 in order to motivate the differences between dispositional and non-dispositional GNs.

However, GAs and GNs also display distributional differences. First, whereas GAs lack a measure interpretation with quantifiers such as *a lot*, the corresponding GNs have such a measure interpretation (see also Nicolas 2002 and Wellwood 2016 in relation to quantification with GNs):

(4) a. Alex was brave a lot.
⇒ there were many occasions in which Alex was brave.
↛ Alex was brave in large measure/to a high degree.
b. Alex had/showed a lot of bravery.
↛ there were many occasions in which Alex was brave.
⇒ Alex was brave in large measure/to a high degree.

Interestingly, whereas some GAs are marked in such constructions, the relevant GNs are not as restricted:

(5) a. ?Alex was beautiful/intelligent a lot.
b. Alex had/has a lot of beauty/intelligence.

Second, GNs admit of non-positive readings even outside of comparative constructions.[3] It is well documented that GAs have positive readings when used predicationally such that the degree to which the subject is e.g., *brave* or *honest* must exceed some contextual threshold (6a). The same inference does not arise for DPs such as *Alex's bravery/honesty* (6b).

(6) a. Alex is brave/honest/beautiful ?in a lacking way.
b. Alex's bravery/honesty/beauty is lacking.

The data in (6b) contrasts with the intuition, reported in Baglini 2015: p. 219, that *John's wisdom is surprising* entails that John is wise. One way to account for Baglini's judgment, however, could be to evoke pragmatic competition with e.g., *foolishness*.

2.2. Dispositional vs. Non-Dispositional GNs

GNs fall into two distinct groups in terms of their distributional properties. I dub these classes of GNs *dispositional GNs* and *non-dispositional GNs*. Specifically, dispositional GNs and non-dispositional GNs differ when it comes to whether they can be restricted to specific temporal and spatial locations, and whether they are exemplified by actions. Let us take, as running examples, the dispositional GN *bravery*, and the non-dispositional GN, *beauty*.

Spatiotemporal modification. As we saw in (2b) and (3b), GNs such as *bravery* can be modified by locative temporal constructions such as *in the courtroom yesterday*, but GNs such as *beauty* cannot. The picture is a little more complex than this, however. Both temporal and spatial modification are relatively unrestricted for *bravery* (*Alex's bravery yesterday in the court room was noteworthy*). For *beauty*, there are more restrictions: temporal modification is sometimes possible, but spatial modification is generally infelicitous.[4]

For temporal modification, depending on the entity/individual of which beauty is being predicated, some temporal modification is felicitous. For instance, for entities such as gardens that

[3] Thanks to an anonymous SuB reviewer for emphasising this point to me, as well as suggesting the data in (6).

[4] This is clearly related to Moltmann's (2013: §2.4) discussion of whether tropes have a spatiotemporal location. She observes for example, a contrast between 'the softness of the surface yesterday' and '?the softness of the cloth on the table' (Int: the softness is on the table).

periodically (i.e. seasonally) change a great deal in their extrinsic properties, beauty can be tied to a period of time as in (7a). But this is far more restricted for individuals such as people (7b).

(7) a. The garden's beauty last winter was noteworthy
b. ?Alex's beauty last year/yesterday was noteworthy

For neither gardens nor people is it straightforwardly felicitous to modify *beauty* with location PPs, however:

(8) a. ??The garden's beauty in Greece was noteworthy.
b. ?Alex's beauty in Greece was noteworthy.

We thus have a contrast between *beauty* and *bravery*. For *beauty*, things (e.g., people or gardens) can have beauty, typically for protracted or periodic stretches of time, however, infelicity arises if we try to link these states of being to specific temporal points or spatial locations. For *bravery*, in contrast, one can have (a lot of) bravery, and this may be an i-level property,[5] but nonetheless, specific, spatiotemporally located actions as instantiations or manifestations of bravery can also be grammatically accessed by constructions such as *in the courtroom yesterday*.

Exemplification in terms of actions: *bravery* but not *beauty* of an agent can be exemplified straightforwardly in terms of acts/actions:

(9) a. Those (three) acts/actions showed Alex's bravery
b. ?Those (three) acts/actions showed Alex's beauty

These data also suggest that there is some relation between whatever *bravery* denotes and some actions that instantiate, show, or otherwise manifest bravery. However, for *beauty*, no such connection seems to be grammatically accessible. To be sure, one may feel that one has to do something in order to, say, make a garden beautiful, but even so, these actions do not constitute or manifest being beautiful, they *result* in a STATE: the garden being beautiful.

In summary, there is evidence of accessibility to the grammar of actions-qua-manifestations of bravery, on the one hand, but of an apparent lack of access to actions-qua-manifestations of beauty. I propose that we can describe this link in terms of dispositions to act. The intuition is as follows: to have beauty, or to be beautiful seems to turn on the properties, extrinsic or intrinsic, that some entity or individual has.[6] However, to have bravery, or to be brave, is linked to acting in a certain way: a way that manifests one being brave.[7] As a first pass, we might say that having bravery requires one to have acted in a certain way. However, this is too strict. Were someone never to be in circumstances such that their actions would either count as brave or not, it seems to be the wrong result that they should be classified as not being brave. Rather, we should say that we do not know whether or not they are brave. A possible fix is therefore to link predications of *bravery*, not to actions performed, but to dispositions to act:

[5] On *individual-level* (i-level) and *stage-level* (s-level) predicates, see Carlson 1977.

[6] I set aside cases where EVENTS can be described as beautiful or having beauty.

[7] *Action* should be understood broadly here. One can also be brave by inaction, e.g. refusing to act. Thanks to Hana Filip p.c. for discussion on this point.

Table 2: Examples of dispositional and non-dispositional gradable abstract nouns

Dispositional GNs	Non-dispositional GNs
bravery	*anger*
courage	*beauty*
honesty	*guilt*
guile	*happiness*
wisdom	*intelligence*

(10) **Dispositional vs. Non-dispositional GNs.**
   a. For a dispositional GN such as *bravery*, if someone has bravery, they need to at least to be disposed to act in a certain way (to perform acts of bravery)
   b. For a non-dispositional GN such as *beauty*, an individual or entity does not require any actions/dispositions to act.

A corollary of (10) is that dispositional GNs can only be predicated of (intentional) agents/actors: those capable of having dispositions to act. This makes the prediction that dispositional GNs should be infelicitous when predicated of inanimate entities (unless coerced). Whether a non-dispositional GN can be predicated of inanimate entities depends on whether it relates to e.g., mental capabilities or metal or emotional states

(11) a. ?the bravery/courage/honesty/guile/wisdom of this table
   b. the beauty of this table
   c. ?the anger/guilt/happiness/intelligence of this table

Based upon the above diagnostics: temporal modification and exemplification via actions, GNs can be categorised as dispositional or non-dispositional. Some examples are given in Table 2. For example for *wisdom*, example (12a) indicates compatibility with temporal modification, and example (12b), exemplification via actions.[8]

(12) a. They express their appreciation to Kofi Annan for the wisdom and leadership he has shown during his term as Secretary General.
   b. Paul showed wisdom by placing blocking stones first.

3. Background

In the analysis to be provided in section 4, the semantics of GNs and GAs will be given in terms of both STATES and DEGREES. In this section, a very brief overview of STATE- and DEGREE-based accounts of GAs and GNs is provided. Alternatives to DEGREE- and STATE-based accounts, such as trope-based approaches (e.g., Moltmann 2013) will be discussed in section 5.

3.1. DEGREE-based accounts of GAs and GNs

Just a small sample of the work on DEGREE-based accounts of GAs includes Bartsch and Vennemann 1972; Cresswell 1977; Bierwisch 1989; Heim 2000; Kennedy and McNally 2005;

[8]Examples are taken from the ukWaC corpus Ferraresi et al. 2008.

Kennedy 2007; Bylinina 2014; Solt 2018. Broadly speaking, approaches either analyse GAs as measure functions of type $\langle e, d\rangle$ as in (14a) (e.g., Kennedy 2007), or as relations between DEGREES and individuals of type $\langle d, \langle e, t\rangle\rangle$ as in (14a) (e.g., Heim 2000). In both cases, a POS operation can introduce a contextual standard, $std_{\mu_{\text{TALL}}}$ as in (13b) and (14b), yielding predicate of type $\langle e, t\rangle$.

(13) a. $[\![\text{tall}]\!] : \langle e, d\rangle = \lambda x.\mu_{\text{TALL}}(x)$
b. $[\![\text{POS}]\!]([\![\text{tall}]\!]) : \langle e, t\rangle = \lambda x.\mu_{\text{TALL}}(x) \geq std_{\mu_{\text{TALL}}}$

(14) a. $[\![\text{tall}]\!]\langle d, \langle e, t\rangle\rangle = \lambda d.\lambda x.\mu_{\text{TALL}}(x) = d$
b. $[\![\text{POS}]\!]([\![\text{tall}]\!])\langle e, t\rangle = \lambda x.\exists d.\mu_{\text{TALL}}(x) = d \wedge d \geq std_{\mu_{\text{TALL}}}$

Bochnak et al. (2025) develop a degree based approach to nominalizations such as *strength* and *height* following the Kennedy measure function approach, albeit intensionalised with a situation variable, w.[9] $\mu_{\textbf{height},w}(x)$ is the height of x in situation w.

(15) $[\![\text{height}]\!] : \langle s, \langle e, d\rangle\rangle = \lambda w.\lambda x.\mu_{\textbf{height},w}(x)$

The proposal of Bochnak et al. (2025) regarding GNs such as *beauty* is discussed in section 5.

3.2. STATE-based accounts of GAs and GNs

Analyses of GAs in terms of STATES have been offered as alternatives to DEGREE-based approaches. The literature is quite extensive (e.g., Parsons 1990; Rothstein 1999; Husband 2010; Wellwood 2014; Anderson and Morzycki 2015; Baglini 2015; Glass 2019; Zato 2020 among others). I briefly discuss a handful of proposals.

Anderson and Morzycki (2015) analyse GAs as a two-place relation between STATES and individuals, where DEGREES are replaced with *state kinds* (I use e_s as a variable over STATES):

(16) $[\![\text{beautiful}]\!] : \langle e,\langle v,t\rangle\rangle = \lambda x.\lambda e_s.beautiful(e_s, x)$

Wellwood (2014, 2016) proposes that even simple predication with gradable adjectives (e.g., *Ann was happy*) involves predication over states. GAs are analysed as one-place predicate of STATES (I use e_s as a variable over states):

(17) $[\![\text{beautiful}]\!] : \langle v,t\rangle = \lambda e_s.beautiful(s)$

For Wellwood, measures on states are introduced by expressions such as *more*. Individuals are related to states via the introduction of the relevant thematic role relations (e.g., $holder$, $experiencer$, etc.). A puzzle for the account in Wellwood 2014 are constructions such as *very much more/a lot more bravery*. Wellwood decomposes *more* as a combination of an underspecified measure function and a comparative (i.e., an inequality). She also posits that *very* is a comparative morpheme (p.153). If both expressions such as *very* and *more* encode something involving an inequality, it is puzzling why they should be able to be used together.

[9] I replace Bochnak et al.'s s with w to avoid confusion with STATES.

For GNs, Zato (2020) uses elements of Anderson and Morzycki's account to derive the semantics of nominals from the semantics of gradable adjectives. At least for *bello* ('beautiful') and *belleza* ('beauty') in Spanish, Zato assumes that the GA denotes a property of STATES, and then derives the interpretation of the nominalization from this. However, in the compositional semantics, the interpretation of the GA and GN are similar enough so as to not make it clear how the aforementioned differences between GAs and GNs could be derived.

The approach closest to the one I propose is proffered by Baglini (2015), who proposes that GAs such as *wise* encode measure functions on STATES of type $\langle d, \langle e_s, t\rangle\rangle$ (p. 188). However, whereas Baglini assumes that GAs and GNs are of the same semantic type, albeit a different syntactic category (see comments regarding *-ness*, *tallness* and *wisdom* pp. 219-221), I argue for a type distinction between GAs and GNs albeit based upon a shared semantic root, namely a measure function on STATES.

3.3. Other STATE-denoting abstract nouns

Finally, GNs are far from the only classes of common nouns that have been argued to denote STATES. For instance, Grimm 2014 proposes that some psych nouns can denote the relevant experiencer STATE (e.g., *hunger*, *fatigue*) or the stimulus of that STATE (e.g., *fear*). Also, Sutton 2022; Sutton and Filip 2020, 2024 argue that nouns such as *belief* have an STATE-denoting sense (but are polysemous, so also have an informational entity-denoting sense).

4. Analysis

In this section, I propose that GAs and GNs lexicalize the same root property, namely a measure function on STATES, however, whereas GNs are lexicalised as a relation between STATES and DEGREES, GAs are lexicalised as a relation between STATES, DEGREES, and INDIVIDUALS. There is, thereby, a type distinction posited between GAs and GNs. Motivation for the DEGREE argument is that both GAs and GNs can be modified by degree modifiers, including adjectives such as *considerable* and *considerably* in *considerable bravery* and *considerably brave*.[10] Motivation for the STATE argument includes, modulo the nature of the relevant STATE, that GAs and GNs can be associated with extended periods of time. The type distinction between GAs and GNs explains some of their distributional differences, for instance, as the basis behind which the POS morpheme can apply to GAs yielding 'sufficient degree' inferences, but not with GNs.

Dispositional vs. non-dispositional GNs are differentiated in terms of a sortal distinction between STATES. Dispositional STATES are states that are dispositions to act in a certain way. Non-dispositional STATES are states of being in a certain way. The former are defined for the *Manif* (manifestation) function: a function from a STATE to to the set of actions that manifest this STATE (i.e., the set of actions that arise as a result of the disposition to act). I propose that this set of acts can be accessed via a routinised coercion. I consider, but ultimately reject other options such as encoding access to the set of acts in verbal expressions or encoding this set of acts as

[10]Wellwood (2014) does not discuss *considerable* or *considerably*, but it would be in line with her account to decompose their interpretations as including an underspecified measure function thereby introducing degrees. On this alternative, the shared root between GAs and GNs would be a property of STATES. It seems possible that the analysis here could be re-oriented more in the direction of Wellwood's proposal, however, see section 4.3.

a polysemous sense of dispositional GNs. Via coercion, a GN can be modified by expressions relating to specific locations and points in time e.g., *bravery in court yesterday*.

4.1. Evidence that GNs are STATE-denoting

Although a wealth of evidence has been provided in the GA literature with respect to GAs denoting STATES, here I offer some evidence that GNs also have an argument for STATES.

Sutton and Filip 2024 propose two tests for whether a common noun has an eventuality denoting sense. First, eventuality-denoting nouns in Saxon genitive constructions can be paraphrased in terms of thematic role relations which we see for GNs in (18a) but not for concrete nouns in (18b). Second, eventuality-denoting nouns can also be used in light verb constructions, but other nouns cannot as we see for GNs in (19a), but not other nouns in (19b).

(18) a. Alex's bravery/beauty ≈ the STATE of bravery/beauty in which Alex is the Experiencer/Holder
b. Alex's boat/cat ≉ the boat/cat STATE in which Alex is a participant

(19) a. Alex has (much) beauty/has (a lot of) bravery (Light Verb Construction)
b. Alex has a boat/cat (Main Verb Construction)

Sutton and Filip 2024 also argue that these light verb constructions can provide evidence for the aspectual class of eventuality denoting abstract nouns when put through the battery of tests that are standardly used in event semantics to determine the aspectual class of verbal expressions (see, e.g., Dowty 1979, p. 55ff, and Filip 2011 for an overview and a discussion). For instance, *beauty* is classified as atelic on this basis, the results for *bravery* as a dispositional GN are mixed:

(20) a. Alex has had much beauty for their entire life/#in the last months.
b. Alex has had much bravery for their entire life/in the last months.

Furthermore, GNs pattern in a stative way when it comes to resistance to measurement with specific lengths of time in contrast to nouns that denote EVENTS ((21a) and (21b) vs. (21c)). GNs are also felicitous with modifiers such as *constant* and *ever present* which suggests reference to STATES (22).

(21) a. ?Alex's three minute/year long bravery
b. ?The garden's/Fido's three minute/year long beauty
c. Alex's three minute long speech/four hour long party

(22) a. Alex's constant/ever-present bravery
b. The garden's/Alex's constant/ever-present beauty
c. ?Alex's constant/ever-present speech/party

Finally, if GNs are STATE-denoting, it follows naturally that they should be mass nouns insofar as STATES are for eventualities, comparable to undifferentiated stuff in the concrete domain (Mourelatos, 1978).

4.2. GAs and GNs lexicalize measure functions on STATES

We have reviewed evidence that the interpretations of GAs and GNs have both a DEGREE and a STATE argument.[11] Given these two sources of evidence, and given that it is not incompatible to analyse GNs and GAs in terms of both DEGREES and STATES, a combined degree and STATE analysis seems viable: rather than the shared root of GAs and GNs being either a property of DEGREES or a property of STATES, I assume it is a measure function on STATES. I also assume that v_s is a sort of type v for eventualities, namely the sort of STATES. I use e_s as a variable for eventualities of this sort. This measure function is very close to the one proposed by Baglini (2015). I discuss differences between our proposals below.

(23) $\sqrt{\text{P}} = \mu_{\text{P}} \quad : \langle s, \langle v_s, d\rangle\rangle$
A measure function of states, e_s, wrt a situation/world, w where $\mu_{\text{P}}(w)(e_s)$ is the DEGREE that e_s measures wrt dimension P in w

From a root such as μ_{BEAUT}, we can derive lexical entries for both the GA *beautiful* and the GN *beauty*.[12] I assume that the STATES are defined for themes (*Th*). See Parsons 1990 for a discussion of what thematic role relations are plausibly defined for STATES.

(24) $[\![\text{beautiful}]\!]_{\langle s,\langle v_s,\langle d,\langle e,t\rangle\rangle\rangle\rangle} = \lambda w.\lambda e_s.\lambda d.\lambda x.\mu_{\text{BEAUT}}(w)(e_s) = d \wedge Th(e_s)(x)$

(25) $[\![\text{beauty}]\!]_{\langle s,\langle v_s,\langle d,t\rangle\rangle\rangle} = \lambda w.\lambda e_s.\lambda d.\mu_{\text{BEAUT}}(w)(e_s) = d$

As for the ordering of arguments, at least in English, the following data suggest that the d argument is filled after modification of the situation argument, on the assumption that what is equal is the degree of beauty of the gardens in summer:

(26) a. Our gardens are equally beautiful in summer.
b. Our gardens are of equal beauty in summer.

Both the ordering of arguments and the inclusion of type e argument for GAs contrast with Baglini's (2015) proposal. Furthermore, as I argue in section 4.3, evoking a type distinction between GAs and GNs makes available an explanation of data such as (6b) (*Alex's beauty/bravery is lacking*).

4.3. GNs do not combine with POS

Another data point from section 2 was that, whereas GAs get positive readings in predication constructions, DPs formed with GNs do not get positive readings (6). Given the proposed lexical entries in (24) and (25), this can be accounted for in terms of their difference in types: the POS

[11] Again, it may be possible to shift the burden of introducing a degree argument to adjectives and adverbs thus making the analysis closer to that in Wellwood 2014. To make this alternative analysis work, however, I would still need posit a type distinction between GAs and GNs with respect to whether they have an argument of type e (yes for GAs, no for GNs).

[12] Tacitly assumed are the following operations on roots:

(i) a. $\lambda M_{\langle s,\langle v_s,d\rangle\rangle}.\lambda w.\lambda e_s.\lambda d.\lambda x.M(w)(e_s) = d \wedge Th(e_s)(x)$
b. $\lambda M_{\langle s,\langle v_s,d\rangle\rangle}.\lambda w.\lambda e_s.\lambda d.\lambda x.M(w)(e_s) = d$

morpheme is defined only for GA types $\langle s, \langle v_s, \langle d, \langle e, t\rangle\rangle\rangle\rangle$, not for GN type $\langle s, \langle v_s, \langle d, t\rangle\rangle\rangle$. I assume that POS leaves the eventuality argument open, to be ∃-closed later in the derivation in the standard neo-Davidsonian manner, but reorders the type e and type v_s arguments.

(27) $[\![\text{POS}]\!] = \lambda\mathcal{A}_{\langle s,\langle v_s,\langle d,\langle e,t\rangle\rangle\rangle\rangle}.\lambda w.\lambda x.\lambda e_s.\exists d.\mathcal{A}(w)(e_s)(d)(x) \wedge d \geq STD_{A,w}$

(28) a. $[\![\text{POS}]\!]([\![\text{beautiful}]\!])$
$= \lambda w.\lambda x.\lambda e_s.\exists d.\mu_{\text{BEAUT}}(w)(e_s) = d \wedge d \geq STD_{[\![\text{beautiful}]\!],w} \wedge Th(e_s)(x)$
b. $[\![\text{POS}]\!]([\![\text{beauty}]\!]) \Rightarrow$ Type Clash!

For data such as (6a) (?*was brave in a lacking way*), POS ensures that a qualification of the degree as low leads to semantic inconsistency (on the assumption that a *lacking* degree is always lower than the contextual standard).

For data such as (6b) (*Alex's beauty/bravery is lacking*), we first need provide an analysis of how genitive marked DPs combine with GNs. Following e.g., Wellwood (2016), we can make use of something approximating *Event Identification* in Kratzer 1996. A genitive marked proper name combines with a predicate of eventualities and identifies e.g., the Theme with the denotation of the proper name.

(29) a. $[\![\text{Alex's}_{\text{ theme}}]\!] = \lambda\mathcal{P}_{\langle s,\langle v_s,\langle d,t\rangle\rangle\rangle}.\lambda w.\iota d.\exists e_s.\mathcal{P}(w)(e_s)(d) \wedge Th(e_s)(\text{alex})$
b. $[\![\text{Alex's beauty}]\!] = \lambda w.\iota d.\exists e_s.\mu_{\text{BEAUT}}(w)(e_s) = d \wedge Th(e_s)(\text{alex})$

Then on the assumption that *is lacking* can denote a degree modifier as in (30),[13] where $STD_{Q_c,w}$ has Q_c resolved in context, we get the interpretation in (31):

(30) $[\![\text{is lacking}]\!]^c = \lambda P_{\langle s,d\rangle}\lambda w.d < STD_{Q_c,w}$

(31) $[\![\text{Alex's beauty is lacking}]\!]^c = \lambda w.\iota d[\exists s.\mu_{\text{BEAUT}}(w)(e_s) = d \wedge Th(e_s)(\text{alex})] < STD_{Q_c,w}$

In the current case, a default interpretation would be that $Q_c = [\![\text{beauty}]\!]$, yielding the interpretation that the degree of Alex's beauty state is lower than the contextual standard of beauty. This contrasts with Baglini's (2015) suggestion that, for deadjectival nouns, POS combines with the interpretation of the adjective prior to nominalization. As mentioned in section 2.1, I must thereby explain away Baglini's intuition that *John's wisdom was surprising* carries a positive form inference in terms of pragmatic competition with e.g., *foolishness*.

For the data in (5) (?*was beautiful a lot* vs. *a lot of beauty*), given that POS fills the degree argument of *beautiful*, this cannot be specified via *a lot*. Furthermore, barring coercion, when combined with stative predicates, quantifiers such as *a lot* cannot derive temporal extent interpretations or iterative interpretations (cf. *ran a lot* and *walked to the shop a lot* with ?*was British a lot*). Therefore, barring coercion ?*was beautiful a lot* is not interpretable as e.g, 'had many temporally bounded and discrete periods of being beautiful'. In contrast, [[beauty]] still has an open degree argument. This predicts a non-coerced interpretation of *a lot of beauty* on which the degree of beauty is higher than a contextually specified degree.

[13] This could also be formulated as property of DEGREES, where, after intensionalised predicate modification, the d argument would be ∃-closed.

Were we to adopt an analysis of GAs closer to that in Wellwood 2014 in which degrees are introduced by quantifiers and comparative morphology, and were we then to also apply it to GNs, it is not so clear how this pattern could be derived. That is to say, if GAs and GNs both lack a degree argument and quantifiers such as *a lot (of)* encode underspecified measure functions on STATES, we would not expect to see a contrast such as that in (5).

4.4. Dispositional vs. Non-dispositional GNs

The remaining data points described in section 2 turn on differences between types of GNs qua being dispositional (e.g., *bravery*) or non-dispositional (e.g., *beauty*). In order to model the dispositional/non-dispositional distinction, let us define a relation *Manif*, that maps states that can be manifested by acts, to the acts that manifest them.

(32) $\lambda e_s.\lambda w.\lambda e'.Manif(w)(e_s)(e')$:= for STATE, e_s, the set of eventualities that manifest e_s or some part of e_s in w.

Subsequently, I will add the further restriction on *Manif* that is is not defined for all STATES. This will be based on sub-sorts of v_s, namely dispositional vs. non-dispositional STATES. For instance, on the assumption that *beauty* STATES are not dispositional STATES, and thereby not manifested by actions, *Manif* will be undefined for these STATES.

The question we may then put is in what way, if any, does the set of manifesting acts for a STATE relative to a predicate feature as a part of the meaning of a dispositional GN? There are at least three options I consider as answers to this question. I take them in turn.

1. Polysemy: dispositional GNs are polysemous. For instance *bravery* is polysemous between a dispositional STATE reading (having the disposition to act in a certain way), and the set of manifestations of this state, a set of brave acts.

   A problem with this proposal is that it risks making the wrong predictions regarding countability. If GNs denote STATES, we have a ready explanation for why they are mass nouns. However, if GNs are polysemous between a STATE-denoting reading and a reading on which they denote a potentially quantized/disjoint set of, say, EVENTS, that manifest this STATE, then we should expect, contrary to fact, at least some GNs to have a countable interpretation, e.g., *three braveries* as a felicitous construction that means 'three acts of bravery'.

2. *Manif* is not part of the meaning of dispositional GNs, but is encoded in certain verbal predicates, for instance, *shows*.

   While such a proposal could provide an analysis of constructions such as *Alex showed her bravery by doing X*, it cannot explain all of the relevant constructions. For instance, *Alex's bravery yesterday saved the day* would seem to require access to manifestations of Alex's bravery in the genitive DP such that a temporal restriction to yesterday can be imposed and such that these actions could be identified as causing the day to be saved.

3. Associated events/actions are in the lexical entry of GNs arise as a result of a routinised coercion.

   The idea behind this final proposal is that the set of manifestations of a dispositional STATE can be made available to the grammar via a coercion operation, without this set of actions

constituting the extension of the GN. This can be implemented either via a rich lexical semantics such as in the Generative Lexicon (Pustejovsky, 1995), or via sortal restrictions.

Let us outline an implementation of option 3. This option posits that the derivation of manifestation readings of GNs are comparable to Pustejovsky's analysis of routinised coercion constructions such as *begin a book*. Such constructions pose a puzzle because although *book* does not denote either the set of book-reading or book-writing eventualities, *begin a book* can be interpreted straightforwardly as meaning 'began READING/WRITING a book'. The lexical entry for *book* is such that *book* polysemously denotes physical books and/or their contents, but additionally makes available two sets of eventualities: a set of book-reading eventualities and a set of book-writing eventualities. Accessing these sets can be triggered by a type clash such as a non-eventuality-denoting noun (*book*) being provided as the argument to an eventuality-selecting verb (*read*).

In Pustejovsky's terms, an appropriate qualia field to locate the *Manif* relation would be in the *constitutive* (CONST) qualia attribute field, namely, what constitutes entities in the denotation of the noun. A coercion operation could then be defined that accesses this CONST field, and derives a predicate of eventualities, the manifestations of the relevant STATE.

While an analysis based upon a richer lexical entry for GNs is likely to be, in the end, necessary to account for constraints on the full range of coercions, in this paper, it will suffice to keep simpler lexical entries and define restrictions on coercion operations based on sortal restrictions. That said, the assumption of either a rich system of sorts, a rich system of types, or adding complexity to the lexical entry of a noun are all ways of adding structure into semantics. I take the data in addressed in this paper to be yet another source of evidence that we should add such structure into our semantic theories. See Chatzikyriakidis et al. 2025 for discussion.[14]

In order to define the relevant coercion operation, I first propose a sortal distinction between *states*:

(33) A sub-sort for STATES that are manifested by eventualities. Where v_s is a subsort of the type v, for eventualities:
   a. v_{sm}: a subsort of the sort v_s (the sort for STATES), such that STATES which can be manifested by acts: eventualities that are not parts of those STATES. Variables for entities of this sort: $e_{sm}, e'_{sm}...$
   b. v_{sn}: a subsort of the sort v_s (the sort for STATES), such that STATES which cannot be manifested by acts: eventualities that are not parts of those STATES. Variables for entities of this sort: $e_{sn}, e'_{sn}...$

With this sortal distinction, we can give a slightly amended lexical entry for *beauty* with v_{sn} sortal information added, and a lexical entry for a dispositional GN such as *bravery*:

(34) $[\![\text{beauty}]\!]_{\langle s,\langle v_{sn},\langle d,t\rangle\rangle\rangle} = \lambda w.\lambda e_{sn}.\lambda d.\mu_{\text{BEAUT}}(w)(e_{sn}) = d$

(35) $[\![\text{bravery}]\!]_{\langle s,\langle v_{sm},\langle d,t\rangle\rangle\rangle} = \lambda w.\lambda e_{sm}.\lambda d.\mu_{\text{BRAV}}(w)(e_{sm}) = d$

[14] One could also define *Manif* with an extra measure function argument and restrict its application such that it is defined for μ_{BRAV}, but undefined for μ_{BEUT}. However, motivating why *Manif* would be defined for some measure functions but not others would ultimately turn on something else, such as a distinction between sorts.

It is then straightforward to define a coercion operation based upon the *Manif* function with the assumption of a sortal restrictions to dispositional GN predicates, and encoding the ∃-closure of the STATE argument:

(36) $[\![\mathrm{C}_{\mathrm{manif}}]\!] = \lambda\mathcal{P}_{\langle s,\langle v_{sm},\langle d,t\rangle\rangle\rangle}.\lambda w.\lambda e'.\lambda d.\exists e_{sm}.\mathcal{P}(w)(d)(e_{sm}) \wedge \mathit{Manif}(w)(e_{sm})(e')$

Let us take an example by contrasting *bravery at 3pm* with *?beauty at 3pm*. Suppose that *at 3pm* encodes temporal trace function τ, and, furthermore, that temporal PPs formed with *at* in English are restricted to predicates of dynamic eventualities (predicates of EVENTS or PROCESSES), which can be marked as sort v_δ. (Within a simple type theory such as the one being assumed here, it seems to be unavoidable to assume that the lexical entries of such modifiers must also be defined for predicates with degree arguments, as in (37)):

(37) $[\![\text{at 3pm}]\!] = \lambda\mathcal{P}_{\langle s,\langle v_\delta,\langle d,t\rangle\rangle\rangle}.\lambda w.\lambda e.\mathcal{P}(w)(d)(e) \wedge \tau(e) = 3\text{pm}$

Now if we try to derive either *bravery at 3pm* or *beauty at 3pm*, we get a sort clash, since neither *bravery* nor *beauty* express gradable properties of dynamic eventualities. However, for *bravery*, but not for *beauty*, there is a routinised coercion repair strategy available via $[\![\mathrm{C}_{\mathrm{manif}}]\!]$:

(38) $[\![\text{bravery at 3pm}]\!]$
$= [\![\text{at 3pm}]\!]([\![\mathrm{C}_{\mathrm{manif}}]\!]([\![\text{bravery}]\!]))$
$= \lambda w.\lambda e'.\lambda d.\exists e_{v_{sm}}.\mu_{\mathrm{BRAV}}(w)(e_{v_{sm}}) = d \wedge \mathit{Manif}(w)(e_{sm})(e') \wedge \tau(e') = 3\text{pm}$

4.5. Analysis Summary

I have proposed that GAs and GNs share a common semantic root, namely a measure function on STATES. However, there is a type distinction between the interpretations of GAs and GNs. This accounts for why degree modifiers can be used with both GAs and GNs, and also was used as a mechanism to explain why POS cannot apply to GNs, and thus why GNs do not impose a contextual degree standard.

I also posited a sort-based distinction between dispositional and non-dispositional STATES. This was used to define the difference between dispositional and non-dispositional GNs. Only dispositional GNs have an associated set of eventualities/actions that manifest the relevant STATE, and I proposed that this set can be accessed via a routined coercion when, for instance, dispositional GNs are combined with temporal PPs that select for dynamic eventualities.

5. Comparison with other accounts

5.1. Tropes

An alternative analysis of GAs and GNs posits that *tropes* (approximately particular instantiations of properties) underpin their semantics (Moltmann, 2004, 2013, 2004; Nicolas, 2010). For instance, Moltmann argues that GNs denote kinds of tropes. I will not provide a critique of tropes, here, however, as part of the motivation for a trope-based account, Moltmann provides arguments against a STATE-based analysis, some of which I discuss.

Much of Moltmann's argumentation revolves around testing paraphrases for e.g., STATE-denoting expressions, and showing that GN constructions and these paraphrases have different grammatical reflexes and/or afford different inferences, e.g., (39). This is then taken to be evidence that GNs do not denote STATES. (M1)-(M3) are an example of one such argument:

(39) a. John saw the beauty of the rock formation.
b. ??John saw (the state of) the rock formation being beautiful. (Moltmann 2013, p. 51)

(M1) A state in which e.g, Alex is beautiful can always be denoted by constructions such as *(the state of) Alex's being beautiful*

(M2) The distribution of the construction *Alex's beauty* is not identical to the distribution of the construction *(the state of) Alex's being beautiful* in (39), e.g., as a felicitous argument of a perception verb such as *see*.

(M3) Therefore, the construction *Alex's beauty* does not denote a STATE

However, it is not obvious we must accept (M1). First, the paraphrase introduces a confound, since, in general, i-level stative predicates are not felicitous in gerund constructions (compare (40a) with (40b)). Therefore, the paraphrase assumption in (M1) begs the question against a STATE-based analysis of i-level predicates.

(40) a. Alex is British.
b. ?Alex is (in a state of) being British.

Second, STATE is used as a technical term of art in event semantics, and so one need not accept that its distribution should map to everyday uses of *state*. Third, where one does find gerundive uses of constructions such as *being beautiful*, one can also find cases where it is a felicitous direct object of a perception verb, and comparable constructions for dispositional GNs. While examples of *see . . . being beautiful* are rarer, examples of *see . . . being brave* are relatively easy to find:[15]

(41) a. ...they are beautiful women whose sole purpose as Chanel's ambassadors is to be seen (and documented) being beautiful (enTenTen21)
b. Kids will be braver if they see their teammates being brave. (enTenTen21)

Moltmann offers further arguments against a STATE-based analysis of GNs, however, the above considerations at least suggest that the question of whether GNs should be modelled in terms of TROPES or STATES may not yet be definitively settled.

5.2. Could covert eventisers provide an alternative explanation for dispositional GNs?

The main focus in Wellwood 2016 are the constructions in (42), where the relevant reading for (42a) is such that it would be true if there are more 2-day periods that Ann was available than there are 2-day periods that Bill was. She argues that, in order to derive the truth conditions of the data in (42), one needs something like a Kratzerian 'covert eventizer' that derives pluralities of atomic events from states.

[15] Examples are from the enTenTen 2021 corpus (Jakubíček et al., 2013), accessed via `sketchengine.eu`.

(42) Wellwood 2016, p. 172.
a. Ann was [available for 2 days] more than Bill was.
b. Ann was [available more than Bill was] for 2 days.

Given that such an eventizing function is anyway required to account for the data in (42), one might think that this same function could be used in order to account for the manifestation readings of dispositional GNs (e.g., *Alex's bravery yesterday*). However, covert eventizers are not right for this purpose, since the role of covert eventizers is to derive a telic VP that can be enumerated and compared in terms of cardinality (e.g., *was available for two days, three times*). For GNs, such a function would derive a countable set of e.g., *bravery* events, falsely predicting that e.g., *#Alex's three braveries* is straightforwardly felicitous. Furthermore, *eventizing* is meant to derive events that are constituted by some STATE, whereas, for manifestation readings, the relevant acts manifest the relevant STATE. All this said, there are interesting parallels between eventizing and manifestation that deserve further attention in future work.

5.3. Portions of property stuff

Building upon Francez and Koontz-Garboden (2017), Bochnak et al. (2025) argue that GNs such as *beauty* and *wisdom* express qualities, namely properties of portions abstract stuff like wisdom and beauty that individuals can possess.[16] For instance, (43a) analyses *beauty* as a property of portions of abstract beauty stuff, and (43b) adds that Alex is the possessor of this stuff.

(43) a. $[\![\text{beauty}]\!] = \lambda w.\lambda p.\mathbf{beauty}(w)(p)$
b. $[\![\text{Alex's beauty}]\!]^C = \lambda w.\iota p.\mathbf{beauty}(w)(p) \wedge \pi(\text{alex}, p)$

A worry regarding property portions is whether they can give rise to the differences between dispositional and non-dispositional GNs. Recall that the proposal here is that the STATES in which individuals can be are either dispositional insofar as they tend to give rise to actions of a certain kind in certain circumstances (e.g., *bravery*), or they are non-dispositional (e.g., *beauty*) insofar as being in that state is not manifested by actions. Now, portions of property stuff may well be divisible into dispositional and non-dispositional stuff, but at the very least, it is not so clear how to make sense of what a dispositional property (or a portion thereof) is. People qua being in some *bravery* STATE, can be disposed to act with bravery. Intuitively, this is because the way that someone is made up (the state that they are in) is what enters into e.g., causal relationships and can give rise to actions that themselves can be classified as *brave*. It is less clear how this works for possession of portions of bravery (did Alex act that way because they possess some bravery stuff?). Questions also remain open why e.g., portions of bravery stuff can be manifested at certain locations, whereas portions of beauty stuff cannot.

5.4. Addressing a possible worry about i-level predicates

That constructions such as *#there are firemen brave/beautiful* are infelicitous, is evidence that *brave* and *beautiful* are i-level (Carlson, 1977). This, prima facie could cast doubt on whether

[16] As Bochnak et al. (2025) note, their proposal has similarities with Moltmann's trope-based proposal (i.e., if tropes relative to a property P are roughly portions of P stuff).

GAs have an eventuality (STATE) argument in their semantics, given that Kratzer 1995; Diesing 1992 argue precisely that the semantics of i-level predicates lack a Davidsonian eventuality (or spatiotemporal) variable. For instance, Kratzer (1995) argues that s-level predicates in locative constructions are ambiguous in a way that i-level predicates are not:

(44) weil fast alle Flüchtline in dieser Stadt umgekommen sind. (ibid, ex. 4)
since almost all refugees in this city perished are
a. since almost all of the refugees in this city perished.
b. since almost all refugees perished in this city

(45) weil fast alle Schwäne in Australien schwarz sind. (ibid, ex. 8)
since almost all swans in Australia black are
a. since almost all swans in Australia are black.
b. NOT: since almost all swans are black (when) in Australia

However, first, Condoravdi (1992) and McNally (1994) have argued that what differentiates i- and s-level predicates are temporal persistence inferences, which could be an alternative explanation for the above data. Second, when applying Kratzer's test to some GAs, we find the same kind of ambiguity as reported for s-level predicates:

(46) ... weil diesen Sommer fast alle Gärten schön waren.
... since this summer almost all gardens beautiful were
a. ...since almost all of this summer's gardens were beautiful (i.e., some of the gardens that we saw this summer were not beautiful).
b. ...since almost all of the gardens were beautiful this summer (i.e., a different proportion of the same gardens may have been beautiful in previous summers).

6. Concluding remarks

This paper proposed an analysis of Gradable Abstract Nouns (GNs) such as *bravery* and *beauty* and Gradable Adjectives (GAs) such as *brave* and *beautiful* in which GNs and their related GAs share a common semantic root, spelled out as a DEGREE-based measure function on STATES. Both GNs and GAs, I argued, have arguments for both DEGREES and STATES, but GNs differ from GAs in terms of semantic type. This type difference was used to restrict POS to apply only to GAs and not to GNs, explaining data such as *Alex's bravery was lacking* vs. ?*Alex was brave in a lacking way*. I also distinguished between *dispositional GNs* and *non-dispositional GNs* such that the former are predicates of dispositional states: states in which an individual is disposed to act in a certain way. Grammars can access this set of actions associated with dispositional GNs via a routinised coercion accounting for data such as *Alex's bravery in court yesterday*.

The paper does not conclusively answer whether and related GNs should be analysed in terms of DEGREES or STATES or both. It does, however, offer evidence that the presence of both degree and STATE arguments, coupled with the above analysis can explain a wide range of the distributional patterns of GAs and GNs. One piece of evidence that suggests that GNs and GAs have DEGREE arguments is that this argument is closed in predicative uses of GAs, but is still open for uses of GNs. This was used to motivate the contrast between *has a lot of beauty* and ?*was beautiful a lot*.

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