

Responsible drivers and good passengers

the influence of non-intersective modification on nouns

Starr Sandoval

University of British Columbia

Sinn und Bedeutung 58 | Ruhr Universität Bochum | September 8, 2023

Introduction

- Establish **quality adjectives** a sub-category of non-intersective modifiers.
- Present novel data on how quality adjectives influence grammatical properties of nouns
- Propose a semantics for quality adjectives using a generic operator and Kratzerian situations.

Non-intersective modification and quality adjectives

Non-intersective adjectives

Unlike intersective adjectives, non-intersective adjectives cannot be accounted for with Heim and Kratzer's Predicate Modification Rule. Their meanings are informed by the nouns they modify.

- (1)
$$\frac{\text{Floyd is a blonde linguist.} \\ \text{Floyd is a singer.}}{\rightarrow \text{Floyd is a blonde singer}}$$
 (*intersective*)

- (2)
$$\frac{\text{Bertha is a skillful linguist.} \\ \text{Bertha is a singer.}}{\nrightarrow \text{Bertha is a skillful singer.}}$$
 (*non-intersective*)

Non-intersective adjectives

There are many flavors of non-intersective adjectives that have different semantic effects and require different analyses.

- (3) Clyde is an old friend. *(temporal adjectives)*
(Larson, 1998)
- (4) Eloise is a technical architect. *(relational adjectives)*
(McNally and Boleda, 2004)
- (5) Howard is a big idiot. *(size adjectives)*
(Morzycki, 2009)

Quality adjectives

This research focuses on a subclass of non-intersective modifiers which I will call **quality adjectives**—adjectives that fall on a scale of goodness or that reference a character trait specifiable by an identity.

(6) Howard is a $\left\{ \begin{array}{l} \text{good} \\ \text{great} \\ \text{bad} \\ \text{horrible} \end{array} \right\}$ skateboarder!

(7) Bertha is a $\left\{ \begin{array}{l} \text{kind} \\ \text{strict} \\ \text{fair} \\ \text{caring} \end{array} \right\}$ teacher.

Quality adjectives

quality adjectives are also ambiguous—they allow non-intersective and intersective interpretations (Siegel, 1976; Larson, 1998).

- (8) Bertha is a good thief.
- a. Bertha is a good person and a thief. *(intersective)*
 - b. Bertha is good at being a thief. *(non-intersective)*
- (example adapted from Martin 2018)*

The semantics assigned to them must account for their intersective readings as well.

The influence of quality adjectives on nouns

My analysis of quality adjectives is informed by how they influence the nominals they modify. Quality adjectives...

- Alter the temporal properties of nominals.
- Facilitate a sortal interpretation of relational nouns.
- Lack ambiguity when modifying class nouns.

Temporal properties

Temporal properties

A stage-level noun like *passenger*'s extension hinges on the external situation of the individual it applies to (Carlson and Pelletier, 1995).

(9) Floyd is a passenger.

only holds while Floyd is a passenger on a particular voyage

Meanwhile, quality adjectives such as *polite* and *annoying* are individual-level because they hold of an individual over time.

(10) a. Floyd is polite.

b. Clyde is annoying.

Temporal properties

If a stage-level noun is modified by an individual-level quality adjective, the full NP will be individual-level (taking on the properties of the adjective).

(11) a. Floyd is a passenger.
only holds while Floyd is a passenger on a particular voyage

b. Floyd is a $\left\{ \begin{array}{l} \text{good} \\ \text{annoying} \\ \text{polite} \end{array} \right\}$ passenger.

can hold when Floyd is not a passenger on a particular voyage

Temporal properties

Many nouns entail that an individual performs an action professionally or at least habitually.

- (12) a. Floyd is a dancer.
→ Floyd dances professionally or often.
- b. Clyde is a singer.
→ Clyde sings professionally or often.
- c. Bertha is a photographer.
→ Bertha takes photos professionally or often.

However, this entailment is lost when these nouns are modified by quality adjectives.

Temporal properties

- (13) a. Ellie is a $\left\{ \begin{array}{l} \text{beautiful} \\ \text{great} \end{array} \right\}$ dancer. It's a shame she doesn't dance more.
- b. Bruce is a $\left\{ \begin{array}{l} \text{bad} \\ \text{clumsy} \end{array} \right\}$ dancer. No wonder he doesn't dance often.

Instead it is the adjective that is habitual or generic. The noun serves as a restriction for the adjective.

A summary of the data so far is:

- If a stage-level noun is modified by an individual-level quality adjective, the full NP will be individual-level.
- If a noun entails a habitual or professional action, modification by a quality adjective may eliminate this entailment—instead the adjective will have a habituality entailment.

A common theme among these effects is that the properties of the quality adjectives survive while those of the noun are suppressed.

Relational nouns

Relational nouns

Some relational nouns in predicative position sound most natural with both of their arguments pronounced.

- (14) a. Clyde is Floyd's brother.
b. Clyde is a brother of Floyd's.
c. ??Clyde is a brother.

The sentence in (14c) isn't necessarily ungrammatical, but it's odd to say out of the blue—especially on the intended *brother of someone* reading.

Relational nouns

With quality modification, these relational nouns sound more natural without their second argument pronounced.

(15) a. ??Clyde is a brother.

b. Clyde is a $\left\{ \begin{array}{l} \text{good} \\ \text{responsible} \\ \text{caring} \end{array} \right\}$ brother.

The sentence in (15b) does not require special context—it's a normal way to describe an individual.

Relational nouns

There is variation regarding which relational nouns sound unnatural without both arguments pronounced. I leave this topic for future research.

- (16) a. Floyd is a father.
b. Bertha is a mother.

My generalization: if a relational noun sounds odd without its second argument pronounced, it will sound more natural in this form when modified by a relevant quality adjective.

Class nouns

Zobel (2017) draws a contrast between *class* and *role nouns*—*Class nouns* are defined by their inherent characteristics while *role nouns* have actions associated with them.

Class	Role
human	dancer
cactus	judge
capybara	passenger

Table 1: Class and role nouns

Class nouns

Quality adjectives are only clearly ambiguous if they modify *role nouns*.

(17) Bertha is a good thief.

a. Bertha is a good person and a thief. *(intersective)*

b. Bertha is good at being a thief. *(non-intersective)*

The distinction between these readings is less clear with *class nouns*. The paraphrases in (18a) and (18b) are similar in meaning.

(18) Bertha is a good person.

a. Bertha is a good person and a person. *(intersective)*

b. Bertha is good at being a person. *(non-intersective)*

Class nouns

Quality adjectives can also coerce a role interpretation of class nouns. While a table is standardly thought of as an artifact, the quality adjectives in (19b) describe how the box *functions* as a table.

Context: you move into a new place, and you don't have a table set up yet. You end up eating dinner with your plate on a moving box.

(19) a. ??This box is a table.

b. This box is a $\left\{ \begin{array}{l} \text{good} \\ \text{nice} \\ \text{bad} \end{array} \right\}$ table.

Quality adjectives...

- Alter the temporal properties of nominals.
- Facilitate a sortal interpretation of relational nouns.
- Lack ambiguity when modifying class nouns.

Prior research

Focusing on the ambiguity of *beautiful dancer*, Larson (1998) represents *dancer* with a generic quantifier over dancing events, *e*.

Intersective *beautiful* applies to Bertha, non-intersective *beautiful* applies to *e*.

- (20) a. $\llbracket \text{Bertha is a beautiful dancer} \rrbracket_{\text{INTERSECTIVE}} =$
GEN $e[\text{dance}(e, \text{Bertha}) \wedge \text{beautiful}(\text{Bertha})]$
Bertha is beautiful and a dancer.
- b. $\llbracket \text{Bertha is a beautiful dancer} \rrbracket_{\text{NON-INTERSECTIVE}} =$
GEN $e[\text{dance}(e, \text{Bertha}) \wedge \text{beautiful}(e)]$
Bertha dances beautifully.

Some advantages of this approach are...

- Representing the noun with Davidsonian events provides a pathway to relate the modifier to the noun.
- Using a generic quantifier falls in line with observations presented about individual-level predicates and habituality.

At the same time, this representation alone does not account for the observations on how quality adjectives influence nominals.

For example, *dancer* entails habitual dancing, while *beautiful dancer* does not.

- (21) a. $\llbracket \text{Bertha is a dancer} \rrbracket$
=GEN e[dance(e,Bertha)]
- b. $\llbracket \text{Bertha is a beautiful dancer} \rrbracket_{\text{NON-INTERSECTIVE}}$
=GEN e[dance(e,Bertha) \wedge beautiful(e)]

One extra conjunct does not clearly account for this contrast.

I also argue that while similar, NPs with quality adjectives (e.g. *beautiful dancer*) are not equivalent to morphologically parallel VPs (e.g. *dances beautifully*).

- (22) a. Sammy already registered her license. She's such a responsible driver.
b. ??Sammy already registered her license. She drives so responsibly.

In (22a), only *responsible driver* can describe driving-related situations that don't involve actual driving events.

Maienborn (2021) presents an alternate approach, positing the ambiguity lies in the adjective. She also sets out to account for a wider range of non-intersective modifiers than quality adjectives, including *professional* and *trained*.

She uses tropes (Moltmann, 1997) and social roles (Zobel, 2017) to represent NPs differently from their morphologically parallel VPs.

Like Larson, she distinguishes the representation of intersective and non-intersective adjectives with a single conjunct.

As a result, this analysis also does not explain the grammatical influence of quality adjectives on nouns.

Towards an analysis

I use situations as a framework (Kratzer, 2007). Nominal and adjectival predicates apply to an individual and a situation variable, which represents a part of a world at a time.

- (23) a. $\llbracket \text{dancer} \rrbracket = \lambda x \lambda s. \text{dancer}(x)(s)$
b. $\llbracket \text{beautiful} \rrbracket = \lambda x \lambda s. \text{beautiful}(x)(s)$

The effects of non-intersective modification are achieved with an operator, $\llbracket AS \rrbracket$ that uses generic quantifier over situations.

$$(24) \quad \llbracket AS \rrbracket = \lambda P_{\langle e, st \rangle} \lambda Q_{\langle e, st \rangle} \lambda x . \text{GEN } s [P(x)(s)] [\exists s' [Q(x)(s') \wedge s \leq_{\min} s']]$$

In the restrictor, the nominal applies to a situation s and an individual x . In the nuclear scope, a second situation variable s' is existentially introduced to which the adjective applies. s' minimally extends s .

The intersective interpretation of quality adjectives lack an AS operator. The nominal and adjectival situations are not connected to one another. Meanwhile, in the non-intersective interpretation, the nominal situations extend to the adjectival situations.

- (25) a. $\llbracket \text{good thief} \rrbracket_{\text{INTERSECTIVE}}$
= $\lambda x. \text{GEN } s [s \in C] [\text{thief}(x)(s)] \wedge \text{GEN } s' [s' \in C] [\text{good}(x)(s')]$
- b. $\llbracket \text{good AS thief} \rrbracket_{\text{NON-INTERSECTIVE}}$
= $\lambda x. \text{GEN } s [\text{thief}(x)(s)] [\exists s' [\text{good}(x)(s') \wedge s \leq_{\text{min}} s']]$

Revisiting data

Responsible driver can describe someone who registers their license or fills their gas tank responsibly.

- (26) a. $\llbracket \text{responsible AS driver} \rrbracket$
= $\lambda x. \text{GEN } s[\text{driver}(x)(s)][\exists s'[\text{responsible}(x)(s') \wedge s \leq_{\min} s']]$
- b. $\llbracket \text{drives responsibly} \rrbracket = \lambda x. \exists e[\text{drive}(e, x) \wedge \text{responsible}(e)]$

Driver situations encompass contexts that do not involve driving events. Under a standard Davidsonian representation, *drives responsibly* only includes event modification.

Temporal properties

Chierchia (1995) analyzes stage-level nouns with an eventuality variable that is existentially bound with a higher functional head.

$$(27) \quad \llbracket \text{Floyd is a passenger} \rrbracket = \exists s[\text{passenger}(\text{Floyd})(s)]$$

Under quality modification, AS applies to *passenger*, generically quantifying over its situation.

$$(28) \quad \llbracket \text{good AS passenger} \rrbracket \\ = \lambda x. \text{GEN } s[\text{passenger}(x)(s)][\exists s'[\text{good}(x)(s') \wedge s \leq_{\min} s']]$$

This generic quantifier instead of an existential quantifier results in an individual-level interpretation of the NP.

Temporal properties

Kratzer (1995) analyzes individual-level predicates with generically bound eventuality variables, shown in (29). In this representation, *dancer* situations are habitual.

$$(29) \quad \llbracket \text{Bruce is a dancer} \rrbracket = \text{GEN } s[s \in C][\text{dancer}(\text{Bruce})(s)]$$

AS uses a generic operator and places *dancer* in the restrictor clause.

$$(30) \quad \llbracket \text{Bruce is clumsy AS a dancer} \rrbracket \\ = \text{GEN } s[\text{dancer}(\text{Bruce})(s)][\exists s'[\text{clumsy}(\text{Bruce})(s') \wedge s \leq_{\min} s']]$$

Dancer situations are not typical—they provide context for situations of *x* being clumsy.

I assume *brother* with an unpronounced argument has an existentially bound variable (Partee and Borschev, 1999).

$$(31) \quad \llbracket \text{brother} \rrbracket = \lambda s \lambda x. \exists y [\mathbf{brother}(y)(x)(s)]$$

I argue *good brother* sounds more natural because the nominal is located in the restrictor clause.

$$(32) \quad \llbracket \text{good AS brother} \rrbracket \\ = \lambda x. \text{GEN } s [\exists y [\mathbf{brother}(y)(x)(s)]] [\exists s' [\mathbf{good}(x)(s') \wedge s \leq_{\min} s']]$$

Relational nouns

Conceptually, the nuclear scope is the main predicate, while the restrictor provides additional context. Thus, it follows that the omission of one of *brother's* arguments is less salient in this position.

Brother also sounds natural without a pronounced second argument in other contexts where its located in the restrictor, for example, characterizing sentences.

- (33) [[A brother shares his toys]]
= GEN x GEN s[$\exists y$ [**brother**(y)(x)(s)]] [**shares.his.toys**(x)(s)]
(*representation adapted from Carlson and Pelletier (1995)*)

I assume that all situations of x are *person* situations of x . Being a *person* is not defined by actions but inherent traits.

For this reason, it is a trivial restrictor, and the consequences of the truth conditions of (34a) and (34b) do not clearly differ.

- (34) a. $\llbracket \text{good person} \rrbracket_{\text{INTERSECTIVE}}$
= $\lambda x. \text{GEN } s [s \in C] [\text{person}(x)(s)] \wedge \text{GEN } s' [s' \in C] [\text{good}(x)(s')]$
- b. $\llbracket \text{good AS person} \rrbracket_{\text{NON-INTERSECTIVE}}$
= $\lambda x. \text{GEN } s [\text{person}(x)(s)] [\exists s' [\text{good}(x)(s') \wedge s \leq_{\min} s']]$

In contexts where quality adjectives coerce role interpretations of class nouns, situations are defined by function rather than inherent traits. It yields an *acts like* or *functions as* interpretation.

$$(35) \quad \llbracket \text{good AS table} \rrbracket = \\ \lambda x. \text{GEN } s[\text{table}(x)(s)] [\exists s' [\text{good}(x)(s') \wedge s \leq_{\min} s']]$$

Taking stock

Takeaway points

- **Quality adjectives** form a unique class of non-intersective adjectives
- My analysis reflects the idea that e.g. [[clumsy dancer]] is a subset of [[clumsy]].
- This departs from the standard idea that e.g. [[clumsy dancer]] is a subset of [[dancer]] (Siegel, 1976; Kamp and Partee, 1995)
- A generic operator that situates the adjective in the nuclear scope and the noun in the restrictor clause accounts for this influence.

- Distinguishing adjectives of goodness from character trait adjectives.
- Adverbial parallels
- Choice of variable: situations or eventualities

Acknowledgements

Thank you to Marcin Morzycki, Ryan Bochnak, Hotze Rullmann, the UBC Semantics Discussion Group, and the SuB 28 abstract reviewers for meaningful insights and guidance on this research.

Thank you to the SuB 28 organizers!

Maienborn (2021)'s account:

- (36) a. $\llbracket \text{beautiful dancer} \rrbracket_{\text{INT}} =$
 $\lambda x \text{GENe}[\text{bearer}(r', x) \wedge \text{manifest}(r', e) \wedge \text{dance}(e) \wedge$
 $\text{agent}(e, x) \wedge \text{bearer}(r, x) \wedge \text{beautiful}(r) \wedge r =$
 $\text{phys-appearance}(x)]$
- b. $\llbracket \text{beautiful dancer} \rrbracket_{\text{SUB}} = \lambda x \exists r' \text{GENe}[\text{bearer}(r', x) \wedge$
 $\text{manifest}(r', e) \wedge \text{dance}(e) \wedge \text{agent}(e, x) \wedge \text{beautiful}(r')]$

References

- Carlson, G. N. and Pelletier, F. J. (1995). *The generic book*. University of Chicago Press.
- Chierchia, G. (1995). Individual-level predicates as inherent generics. *The generic book*, 125.
- Kamp, H. and Partee, B. (1995). Prototype theory and compositionality. *Cognition*, 57(2):129–191.
- Kratzer, A. (1995). Stage-level and individual-level predicates. *The generic book*, 125:175.
- Kratzer, A. (2007). Situations in natural language semantics.
- Larson, R. K. (1998). Events and modification in nominals. In *Semantics and Linguistic Theory*, volume 8, pages 145–168.
- Maienborn, C. (2021). Revisiting olga, the beautiful dancer: An intersective a-analysis. In *Semantics and Linguistic Theory*, volume 30, pages 63–82.
- Martin, J. (2018). Compositionality in privative adjectives: extending dual content semantics. In *European Summer School in Logic, Language and Information*, pages 93–107. Springer.

- McNally, L. and Boleda, G. (2004). Relational adjectives as properties of kinds. *Colloque de Syntaxe et Sémantique à Paris*.
- Moltmann, F. (1997). *Parts and wholes in semantics*. OUP USA.
- Morzycki, M. (2009). Degree modification of gradable nouns: size adjectives and adnominal degree morphemes. *Natural Language Semantics*, 17:175–203.
- Partee, B. H. and Borschev, V. (1999). Possessives, favorite, and coercion.
- Siegel, M. E. A. (1976). *Capturing the adjective*. PhD thesis, University of Massachusetts Amherst.
- Zobel, S. (2017). The sensitivity of natural language to the distinction between class nouns and role nouns. In *Semantics and Linguistic Theory*, volume 27, pages 438–458.