

# Comparisons of Similarity and Difference

Peter Alrenga, University of California–Santa Cruz  
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## 1 Introduction

“Comparisons of similarity and difference” are constructions involving *different*, *the same*, and *like*, as in (1).

- (1) a. I am different now than I used to be.  
b. I am the same now as I used to be.  
c. I am still a great deal like I used to be.

**Question:** to what extent do such comparisons resemble “scalar comparisons” involving *more*/*–er* and *as*, as in (2)?

- (2) a. I am taller now than I was before.  
b. I am as happy now as I was before.

**Answer:** the parallels between comparisons of similarity / difference and scalar comparisons are far greater than has been previously recognized, though there are some important differences as well.

**Question:** what are comparisons of similarity / difference comparisons of?

**Answer:** comparisons of similarity / difference are comparisons of sets of properties (unlike scalar comparisons, which are comparisons of degrees).

Structure of the talk:

- illustrate the parallels between the two kinds of comparison (§2)
- argue that comparisons of similarity / difference constitute comparisons between sets of properties (§3)
- sketch a semantic analysis of comparisons of similarity / difference (§4)

## 2 Two kinds of comparison compared

### 2.1 External distribution

Scalar comparisons and those of similarity / difference occur in the same range of syntactic environments.

- predicative positions
- (3)
- a. John is crazier than I expected him to be.
  - b. Paul's voice sounds different than it did before.
  - c. George looks the same as he did the last time I saw him.
  - d. Ringo is a lot like I am.
- attributive positions
- (4)
- a. Lou drives a faster car than Mary does.
  - b. John played a different song than I thought he would.
  - c. Maureen goes to the same school as her father went to.
  - d. Sterling has a voice like yours.
- adverbial positions
- (5)
- a. You should word your letter as carefully as I worded mine.
  - b. The press has treated Arnold differently than they've treated Sean Penn or Barbra Streisand for expressing their political views.
  - c. Once the bumblebees acclimated to the habitat, they behaved the same as they would in a natural environment.
  - d. I read Roger Ebert's column because the man writes like I speak.

### 2.2 Complementation possibilities

Both types of comparison occur with nominal and clausal complements (Huddleston and Pullum 2002:§13.5, Jackendoff 1977:§8.3).

- (6)
- a. Chris is as tall as Bill.
  - b. The book of Deuteronomy is different {than, from} the previous books.
  - c. I feel the same as you about Barbie!
  - d. The groundhog is like most other prophets: it delivers its prediction and then it disappears.
- (7)
- a. Chris is taller than Bill is.
  - b. College is different than I expected it to be.
  - c. The place looks the same as it looked a half century ago.
  - d. I certainly tried to act like I thought he would act.

While *like* governs its complements directly, *different* and *the same* do so indirectly through *than / from* and *as*.

The clausal complements in (7) contain gaps in place of property-denoting terms. In both types of comparison, the position of this gap is island-sensitive.

- (8) a. \*Chris is taller than I wonder whether Bill is.  
b. \*College is different than I wondered whether it would be.  
c. \*The place looks the same as I met a man who said it looked.  
d. \*I tried to act like I heard a rumor that she likes her students to act.

Clausal complements of both types are subject to further reduction.

- a verb phrase may go missing

- (9) a. Chris looks as happy as I expected him to.  
b. Paul's voice sounds different than it did before.  
c. George looks the same as he did the last time I saw him.  
d. Do you feel like I do?

- so can an entire embedded clause (Huddleston and Pullum 2002:§13.2.1, 13.5)

- (10) a. In fact, Chris is much taller than I had previously realized.  
b. The book turned out much differently than I had thought.  
c. I had used some invalid syntax that just happened to do the same as I intended on my test data.  
d. Martin sounded nothing like I expected—but then again, hardly anyone looked or sounded like I expected.

## 2.3 Modifiers

### 2.3.1 Modifiers of *different* and *like*

Modifiers of *different* and *like* include *much*, *a lot*, *a great deal*, *no(thing)*, and *(not) any(thing)* (Bresnan 1973:278 fn. 4, Huddleston and Pullum 2002:§13.5).

- (11) a. My leadership role will be {much, a lot, a great deal} different than it was last year.  
b. I'm {no, not any different} than I used to be.
- (12) a. Behind the scenes, she's {much, a lot, a great deal} like she is on the air.  
b. I'm {nothing, not anything} like I used to be.

These modifiers also occur in scalar comparisons of inequality (op. cit.).

- (13) a. Chris is {much, a lot, a great deal} happier than I expected him to be.  
b. I'm {no, not any} taller now than I was when I was a student here.

But they cannot occur with simple gradable adjectives.

- (14) a. \*Chris is {much, a lot, a great deal} happy.  
b. \*I'm {no, not any} tall.

### 2.3.2 Modifiers of the same

Modifiers of *the same* include *nearly, almost, roughly, (not) quite, and just about* (Huddleston and Pullum 2002:§13.5).

- (15) a. The 1999 model is {nearly, almost, roughly} the same car as the 1998 is, except for a few minor changes with little or no effect on power.  
b. Frozen fish isn't quite the same as fresh fish.  
c. I go through my day just about the same as anyone else does, the only difference is the testing of my blood sugar and my shots.

These modifiers also occur in scalar equative comparisons (op. cit.).

- (16) Chris is {nearly, almost, roughly, not quite, just about} as tall as I expected him to be.

### 2.4 Negative polarity item (NPI) licensing

NPIs are licensed in the clausal complements of scalar comparisons.

- (17) a. I'm stronger now than I've ever been before.  
b. My urge to steal was stronger than I could help.  
c. Her mind is as quick and intelligent as it ever was.  
d. Jim is as competent as anyone here could possibly be.

What about comparisons of similarity / difference?

- *different* licenses NPIs in its clausal complements

- (18) a. Remember that nothing official has been said about this game; it may end up being totally different than anyone has imagined it to be.  
b. I felt different than I ever had before.  
c. You may do things differently than I care to do them. Are you right or am I right? Neither of us is right or wrong...this is the computer field.  
d. We reached Marseilles at last, and it was far different than we could possibly have imagined.  
e. Unfortunately, the exam covered different material than I had bothered to study.

- *the same* licenses the NPIs *any* and *ever* in its clausal complements
- no instances of any other NPI have turned up in this context so far

- (19) a. I go through my day just about the same as anyone else does, the only difference is the testing of my blood sugar and my shots.  
b. Robin's been belting out those classic Cheap Trick tunes for a quarter-century and sounds the same as he ever did!

- *like* does not appear to license NPIs in its clausal complements
- (20)
- a. It may end up being just like {you, \*anyone} imagined it to be.
  - b. I felt like I {always, once, \*ever} had before.
  - c. \*We reached Marseilles at last, and it was a lot like we could possibly have imagined.
  - d. You may do things like I {prefer, \*care} to do them.

### 2.5 Sensitivity to “negative” expressions in clausal complements

Scalar comparisons and those of similarity / difference are both sensitive to the presence of negation and other downward monotone expressions in their clausal complements (i.e., both exhibit the “negative island” effect).

- (21)
- a. Chris is taller than John {said, \*denied} that he is.
  - b. College is a lot different than I {thought, \*doubted} it would be.
  - c. I think that I feel the same as {everyone, \*no one} else does.
  - d. Duncan looks a lot like I {do, \*don’t} before my first cup of coffee.

### 2.6 Russellian ambiguities

Scalar comparisons (Russell 1905) and those of similarity / difference both yield ambiguities when embedded under intensional verbs.

- (22) George thinks that your yacht is longer than it is.
- “mistaken” reading: George simply possesses an incorrect belief
  - “contradictory” reading: George’s belief is one that can never be true
- (23) Mary thinks that John sounded different than he did.
- “mistaken” reading: Mary possesses an incorrect belief about John’s voice
  - “contradictory” reading: Mary’s belief is one that can never be true
- (24) Bill said that John looked the same as I expected him to.
- “ignorant” reading: Bill need not have made reference to my expectations
  - “aware” reading: Bill must have made reference to my expectations
- (25) My parents don’t realize that I feel like I do.
- “inattentive” reading: my parents are unaware of my actual emotional state
  - “logically challenged” reading: my parents are unaware of a tautology

### 3 What are comparisons of similarity and difference comparisons between?

#### 3.1 Comparison of (sets of) degrees

**Hypothesis:** comparisons of similarity / difference are comparisons between (sets of) degrees.

##### 3.1.1 Background

A common approach to the semantics of scalar comparisons takes these to involve degrees (see, e.g., Seuren 1973, Cresswell 1976, von Stechow 1984a,b, Seuren 1984, Rullman 1995, Kennedy 1997, Heim 2000).

- a domain of measurement (e.g., length) is formalized as a scale, a linearly ordered set of points, or “degrees”

(26) LENGTH:  $\emptyset$  —————  $d_i$  —————  $d_j$  —————  $d_k$  —————  $>\infty$

- gradable adjectives denote relations between degrees and individuals

(27) a. *tall* =  $\lambda d_d. \lambda x_e. x$  is tall to (at least) degree  $d$   
 b. *wide* =  $\lambda d_d. \lambda x_e. x$  is wide to (at least) degree  $d$

- (one version of this approach) the comparative operator *-er / more* denotes the proper subset relation between two sets of degrees

(28) *-er / more* =  $\lambda P_{<d,t>. \lambda Q_{<d,t>. P \subset Q$

- the clausal complement is interpreted as a set of degrees, providing the first argument to *-er / more*
- the second argument is provided by the matrix clause, which occurs within the logical scope of *-er / more*; it too is interpreted as a set of degrees

(29) a. John is taller than Bill is.  
 b. *-er*( $\lambda d_d. \mathbf{Bill-is-d-tall}$ )( $\lambda d_d. \mathbf{John-is-d-tall}$ )  
 c.  $\{d: \text{Bill is at least } d\text{-tall}\} \subset \{d: \text{John is at least } d\text{-tall}\}$

(30) LENGTH:  $\emptyset$  —————  $>\infty$   
 JOHN'S HEIGHT: [—————] =  $\{d: \text{John is at least } d\text{-tall}\}$   
 BILL'S HEIGHT: [—————] =  $\{d: \text{Bill is at least } d\text{-tall}\}$

### 3.1.2 Evaluation

Perhaps *different*, *the same*, and *like* also denote relations between sets of degrees?

There are revealing differences between the two kinds of comparison that ultimately argue against this view:

- *different*, *the same*, and *like* do not combine with gradable adjectives, leaving it unclear how degrees would ever enter into their semantics
- “subdeletion” complements, where the gap replaces a degree term, are possible with scalar comparisons, but not those of similarity / difference, where the smallest possible gap is one that replaces a property-denoting term
- this difference would go unexplained, given that subdeletion complements also denote sets of degrees

(31) The table is as long as it is (\*five feet) wide.

(32) a. Deuteronomy is different than the other books are (\*interesting).  
b. Paris is the same as it was (\*beautiful) a half century ago.  
c. Ringo is a lot like I am (\*happy).

- comparisons of similarity / difference cannot serve as answers to degree questions, unlike scalar comparisons

(33) How tall is Bill?  
–5 feet 7 inches.  
–Taller than I expected him to be.  
\*–Different than I expected him to be.  
\*–The same as I expected him to be.  
\*–Like I thought he would be.

**Conclusion:** comparisons of similarity / difference are not comparisons of (sets of) degrees.

### 3.2 Comparison of sets of properties

**Claim:** comparisons of similarity / difference constitute comparisons between sets of properties.

(34) a. I am different than I used to be.  
“There is some difference between the properties that I used to possess and those that I currently possess.” (set non-identity)  
b. I am the same as I used to be.  
“There is no difference between the properties that I used to possess and those that I currently possess.” (set identity)  
c. I am (much) like I used to be.  
“There is (much) overlap between the properties that I used to possess and those that I currently possess.” (non-empty set intersection)

Examples like the following demonstrate the relevance of properties when evaluating comparisons of similarity and difference:

- (35)
- a. But in regards to how my character in *Hope Floats* is different than I am, he's very calm and secure. . . I am not secure in that way.
  - b. I was almost the same person as I am now: gloomy, thoughtful, unhappy in groups, always reading in the back seat of cars.
  - c. Apples are like oranges in that they are round, edible, have seeds, and so forth.

The abovementioned differences between scalar comparisons and comparisons of similarity / difference follow immediately:

- *different*, *the same*, and *like* do not combine with gradable adjectives because they do not compare sets of degrees
- *different*, *the same*, and *like* do not combine with subdeletion complements because these unambiguously denote sets of degrees, not sets of properties (clausal complements with larger gaps (e.g., *than I thought he would be*) may denote either sets of properties or sets of degrees, depending on the sort of comparison in which they occur)
- comparisons of similarity / difference cannot serve as answers to degree questions because they provide information about properties, not degrees; note that they function perfectly well as answers to property questions

- (36) How did the band sound?
- Different than I expected them to.
  - The same as they did the last time I saw them.
  - Like they always do. . . polished but uninspired.

#### 4 Semantics for *different*, *the same*, and *like*

Some limitations of the formal analysis that follows:

- restricted to predicative uses of *different*, *the same*, and *like*
- restricted to clausal complements of *different*, *the same*, and *like*

##### 4.1 Basic semantic properties of comparisons of similarity and difference

**The proposal:** comparisons of similarity / difference are comparisons of sets of properties; *different*, *the same*, and *like* denote relations between sets of properties.

(This resembles Nunberg's (1984) analysis of *the same*, though he is concerned with different data and formalizes the idea differently. See also Lasnik 2000.)

- *different* expresses set non-identity, where two sets  $P$  and  $Q$  are non-identical iff  $\exists p[\neg(p \in P \leftrightarrow p \in Q)]$ .

$$(37) \quad \mathit{different} = \lambda P_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \lambda Q_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \exists p_{\langle s, \langle e, t \rangle \rangle} [\neg(p \in P \leftrightarrow p \in Q)]$$

- *the same* expresses set identity, where two sets  $P$  and  $Q$  are identical iff  $\forall p[p \in P \leftrightarrow p \in Q]$

$$(38) \quad \mathit{the-same} = \lambda P_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \lambda Q_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \forall p_{\langle s, \langle e, t \rangle \rangle} [p \in P \leftrightarrow p \in Q]$$

- *like* expresses non-empty set intersection, where two sets  $P$  and  $Q$  possess a non-empty intersection iff  $\exists p[p \in P \ \& \ p \in Q]$

$$(39) \quad \mathit{like} = \lambda P_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \lambda Q_{\langle\langle s, \langle e, t \rangle \rangle, t \rangle} . \exists p_{\langle s, \langle e, t \rangle \rangle} [p \in P \ \& \ p \in Q]$$

- clausal complements are interpreted as sets of properties
- *different*, *the same*, and *like* take logical scope over their matrix clauses, which in turn provide them with their second argument

- (40) a. Paris seems different than it used to be.  
 b.  $\mathit{different}(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{Paris-used-to-be-p})(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{Paris-seems-p})$   
 c.  $\exists p_{\langle s, \langle e, t \rangle \rangle} [\neg(p \in \{p: \text{Paris used to be } p\} \leftrightarrow p \in \{p: \text{Paris seems } p\})]$

- (41) a. Paris looks the same as it looked last year.  
 b.  $\mathit{the-same}(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{Paris-looked-p-last-year})(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{Paris-looks-p})$   
 c.  $\forall p_{\langle s, \langle e, t \rangle \rangle} [p \in \{p: \text{Paris looked } p \text{ last year}\} \leftrightarrow p \in \{p: \text{Paris looks } p\}]$

- (42) a. Paris is like I remember it (being).  
 b.  $\mathit{like}(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{I-remember-Paris-being-p})(\lambda p_{\langle s, \langle e, t \rangle \rangle} . \mathit{Paris-is-p})$   
 c.  $\exists p_{\langle s, \langle e, t \rangle \rangle} [p \in \{p: \text{I remember Paris being } p\} \ \& \ p \in \{p: \text{Paris is } p\}]$

## 4.2 Modifiers

### 4.2.1 Modifiers of *different* and *like*

Recall that *different* and *like* permit modification by *much*, *a lot*, and *a great deal*, as well as *no(thing)* and *(not) any(thing)*.

- (43) a. My leadership role will be {much, a lot, a great deal} different than it was last year.  
 b. I'm {no, not any} different than I used to be.

- (44) a. Behind the scenes, she's {much, a lot, a great deal} like she is on the air.  
 b. I'm {nothing, not anything} like I used to be.

These also occur in scalar comparisons of inequality, as well as existential NPs (see Seuren 1973, von Stechow 1984a for analyses of the former in terms of existential quantification).

- (45) a. Chris is {much, a lot, a great deal} happier than I expected him to be.  
b. I'm {no, not any} taller now than I was when I was a student here.
- (46) a. There is still {much, a lot, a great deal} (of) work left to be done.  
b. There are {no, not any} problems left to be solved.

The meanings for *different* and *like* in (37) and (39) also involve existential quantification; these can be generalized to accommodate the modification facts.

#### 4.2.2 Modifiers of the same

Modifiers of *the same* include *nearly*, *almost*, *roughly*, *(not) quite*, and *just about*.

- (47) a. The 1999 model is {nearly, almost, roughly} the same car as the 1998 is, except for a few minor changes with little or no effect on power.  
b. Frozen fish isn't quite the same as fresh fish.  
c. I go through my day just about the same as anyone else does, the only difference is the testing of my blood sugar and my shots.

These also occur in scalar equative comparisons, as well as universal NPs (see Seuren 1984, Heim 2000 for analyses of the former in terms of universal quantification).

- (48) Chris is {nearly, almost, roughly, not quite, just about} as tall as I expected him to be.
- (49) a. {Nearly, almost, roughly, just about} everyone that you meet in Santa Cruz has a tattoo.  
b. I'm sure that not quite everyone would agree with that statement.

The meaning for *the same* in (38) also involves universal quantification.

#### 4.3 Contextually restricted quantification over properties

**Problem:** how is it that (50a,b) can ever be taken as true?

- (50) a. I'm no different than you are.  
b. I'm the same as I used to be.

Relative to the set of all properties, there should always be some difference between you and I, or between me now and me in the past.

**Solution:** quantification over properties is contextually restricted.

- such contextual restrictions are commonly assumed for quantification over individuals

- (51) a. No one is as happy as I am right now.  
b. Everyone is taller than I am.

- the meanings of *different*, *the same*, and *like* involve quantification over properties, so it's plausible that they would also demonstrate the effects of contextual restriction
- the truth of a comparison of similarity / difference depends on the relation that holds between the contextually relevant portions of the sets of properties provided as arguments to *different*, *the same*, or *like*

## 5 Conclusion

Some further issues to explore:

- how do comparisons of similarity / difference relate to so-called quantifier bound and NP-dependent uses of *different* and *the same* (see, e.g., Dowty 1985, Heim 1985, Carlson 1987, Moltmann 1992, Beck 2000, Barker 2004)?

- (52) a. Every student read a different book.  
b. The same salesman sold me these two magazine subscriptions.

- what is the proper analysis of the NPI (§2.4), negative island (§2.5), and Russellian ambiguity (§2.6) facts?
- how do these facts in turn inform the analysis of scalar comparisons?

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Department of Linguistics  
University of California–Santa Cruz  
1156 High Street  
Santa Cruz, CA 95064  
palrenga@ucsc.edu