

# Lesson 9: Formal Similarity (OA)



This lesson defines and provides examples of formal similarity.

- ☰ Definition of Formal Similarity
- ☰ Irrelevant Features of Formal Similarity
- ☰ Formal Similarity Example #1
- ☰ Formal Similarity Example #2
- ☰ Formal Similarity Example #3
- ☰ Formal Similarity and Self-Reinforcement
- ☰ Formal Similarity Example #4
- 🔍 Knowledge Check
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# Definition of Formal Similarity

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00:18

**Formal similarity** is a relationship between a stimulus that evokes a response and the response-product of that response in which the stimulus and the response-product are both in the same modality (e.g., they are both visual or auditory) and their physical patterns or sequences resemble one another (e.g., they look or sound alike).

## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

### DEFINING FEATURES

•	The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)
•	Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)



# Irrelevant Features of Formal Similarity

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00:12

Some features that are **irrelevant** to formal similarity include the specific formal or dynamic features of both the stimulus and the response-product and the number of additional formal or dynamic features resembling one another.

## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

### IRRELEVANT FEATURES

•	Specific formal or dynamic features of the stimulus and the response-product
•	The number of additional formal or dynamic features resembling one another



# Formal Similarity Example #1


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00:20

For example, someone says “horse” and as a result of that auditory stimulus, you also say “horse.” Formal similarity exists in this case between the auditory stimulus “horse” and the response-product of the vocal response “horse.” The pattern of the auditory stimuli is the same, with the “h” sound at the beginning and the “s” sound at the end.



 Note how this example has all of the defining features of formal similarity:

## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

### DEFINING FEATURES

### IRRELEVANT FEATURES



The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)



Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)

### DEFINING FEATURES

### IRRELEVANT FEATURES



Specific formal or dynamic features of the stimulus and the response-product



The number of additional formal or dynamic features resembling one another

## Formal Similarity Example #2

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00:12

Some degree of formal similarity exists even if other formal or dynamic features are somewhat different. For example, the stimulus may have been low-pitched, whereas the response-product may have been very high-pitched.



### Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:



IRRELEVANT FEATURES

DEFINING FEATURES

•	Specific formal or dynamic features of the stimulus and the response-product
•	The number of additional formal or dynamic features resembling one another

IRRELEVANT FEATURES

DEFINING FEATURES

✓	The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)
✓	Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)

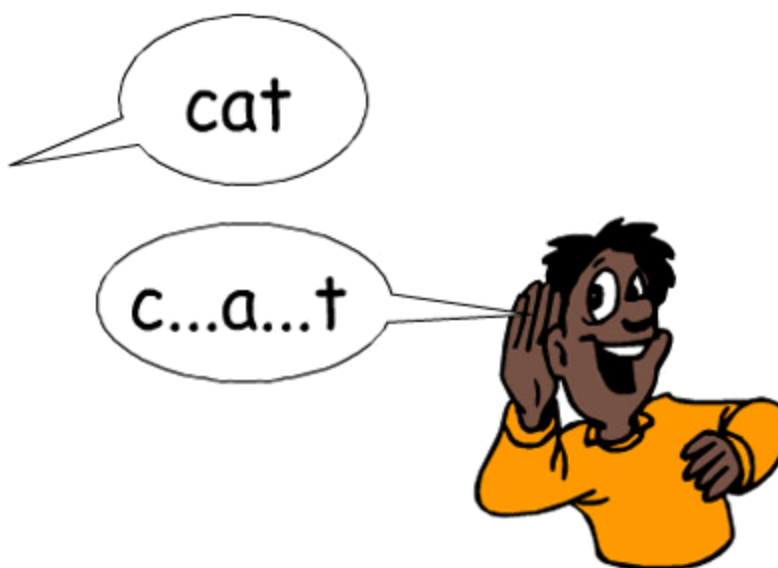
## Formal Similarity Example #3


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00:17

Another example might involve a stimulus that was produced very rapidly and a response-product resulting from a response made somewhat more slowly. If in fact the pitch is about the same and the speed is about the same, then it could be said that a greater deal of formal similarity exists than when the pitch or speed is different.



 Note how this example has all of the defining features of formal similarity:

## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

### DEFINING FEATURES

### IRRELEVANT FEATURES



The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)



Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)

### DEFINING FEATURES

### IRRELEVANT FEATURES



Specific formal or dynamic features of the stimulus and the response-product



The number of additional formal or dynamic features resembling one another

# Formal Similarity and Self-Reinforcement

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00:31

The existence of formal similarity, even minimally, allows for a unique form of **self-reinforcement**. This can make the acquisition and maintenance of responses that produce formal similarity between their products and their controlling stimuli more likely to occur, allowing for a form of **self-correction**. In the case of verbal behavior, the two general categories in which this can occur are when we repeat what has just been said, or when we copy what someone has written. This same type of self-correction is possible in any type of vocal mimicry and/or type of copying.



## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

DEFINING FEATURES

IRRELEVANT FEATURES

•	The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)
•	Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)

DEFINING FEATURES

IRRELEVANT FEATURES

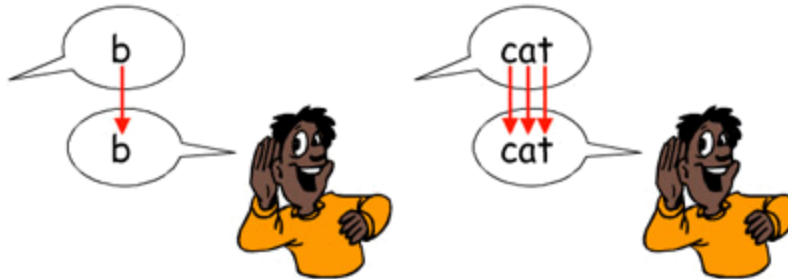
•	Specific formal or dynamic features of the stimulus and the response-product
•	The number of additional formal or dynamic features resembling one another

# Formal Similarity Example #4

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Formal similarity may also exist when the stimulus and response-product have only one component. When formal similarity exists between a stimulus and a response-product that have more than one component, point-to-point correspondence must also exist between the stimulus and the response it controls.



**i** Note how this example has all of the defining features of formal similarity:

## Formal Similarity

A relationship between a stimulus that evokes a response and the response-product of that response with the following features:

**DEFINING FEATURES**

**IRRELEVANT FEATURES**



The stimulus and the response-product are both in the same modality (e.g., they are both visual or they are both auditory)



Their physical patterns or sequences resemble one another (e.g., they may look or sound alike)

**DEFINING FEATURES**

**IRRELEVANT FEATURES**



Specific formal or dynamic features of the stimulus and the response-product



The number of additional formal or dynamic features resembling one another

# Knowledge Check

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You will be presented a series of examples. Indicate whether each example illustrates formal similarity, point-to-point correspondence, both, or neither.

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Question

01/06

Saying “response” as a result of hearing the word “stimulus.”

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- formal similarity
- point-to-point correspondence
- both
- neither

Question

02/06

Saying “stimulus” as a result of hearing the word “stimulus.”

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- formal similarity
- point-to-point correspondence
- both
- neither

Question

03/06

Saying “stimulus” as a result of seeing the written word “stimulus.”

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- formal similarity
- point-to-point correspondence
- both
- neither

Question

04/06

Writing the word “stimulus” as a result of hearing it spoken.

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- formal similarity
- point-to-point correspondence
- both
- neither

Question

05/06

Writing the word “stimulus” as a result of seeing the word “stimulus” written.

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- formal similarity
- point-to-point correspondence
- both
- neither

Question

06/06

Writing the letter Q as a result of seeing the letter Q written on a piece of paper.

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- formal similarity
- point-to-point correspondence
- both
- neither

# Review

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- Formal similarity** is a relationship between a stimulus that evokes a response and the response-product of that response in which the stimulus and the response-product are both in the same modality and their physical patterns or sequences resemble one another.
  
- Features **irrelevant** to formal similarity include the specific formal or dynamic features of both the stimulus and the response-product and the number of additional formal or dynamic features resembling one another.
  
- The existence of formal similarity allows for a unique form of **self-reinforcement** and **self-correction**, making the acquisition and maintenance of responses that produce formal similarity between their products and their controlling stimuli more likely.

*End of Lesson*