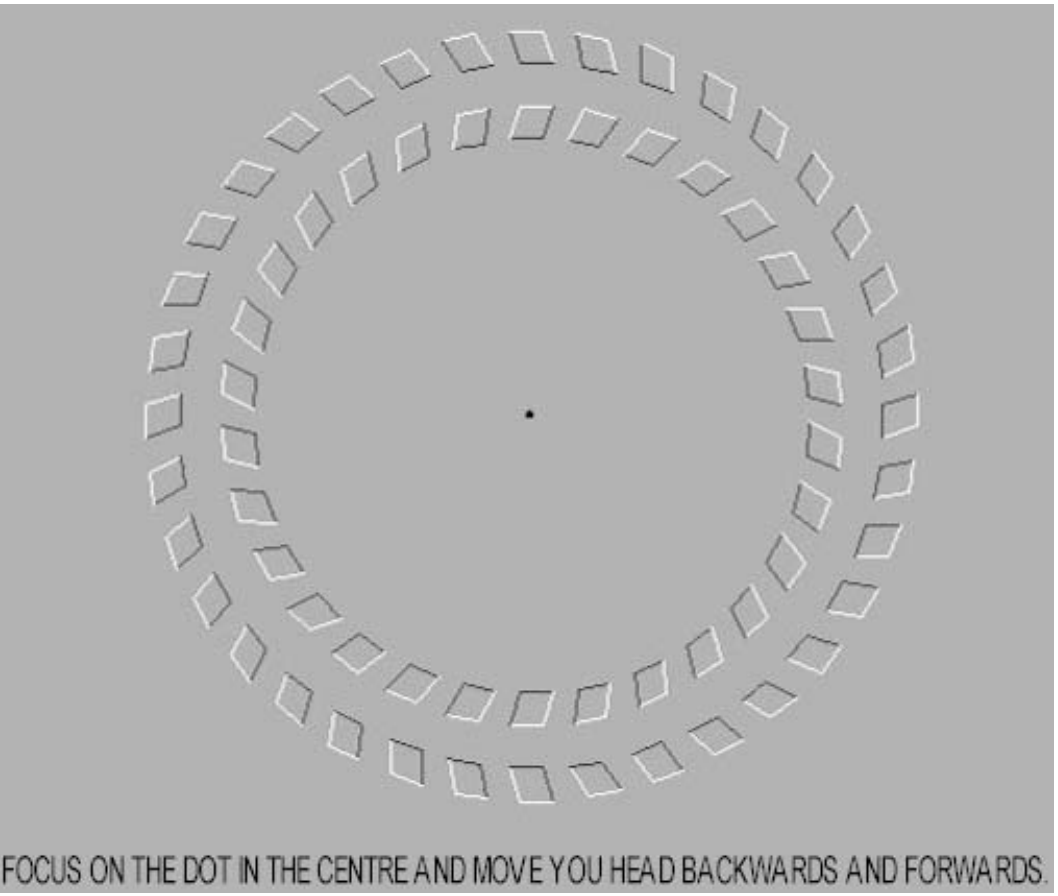
Perception and Attention



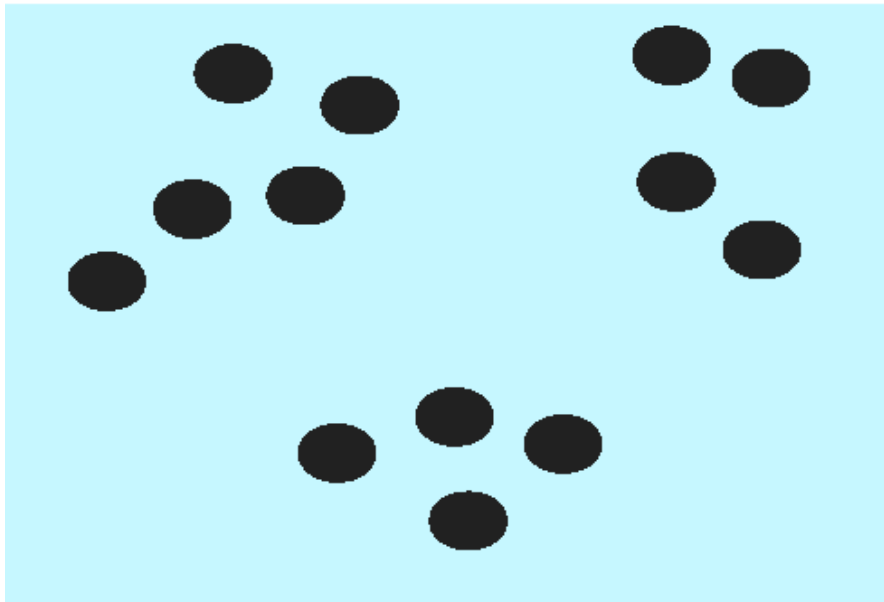
1. Perceptual Organization
2. Attention
3. Change Detection
4. Visual Neglect

Today's Music Selections:

1. Perceptual Organization:
Gestalt Grouping Principles

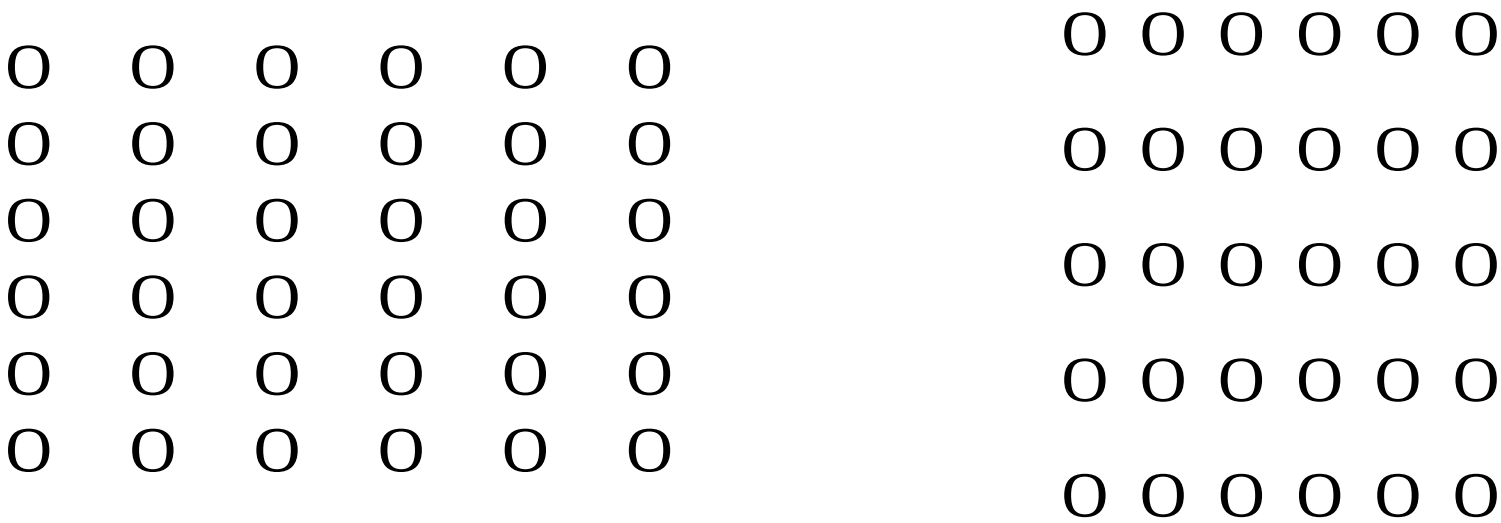
- Proximity
- Similarity
- Closure
- Continuity
- Connectedness or Common Movement

Proximity



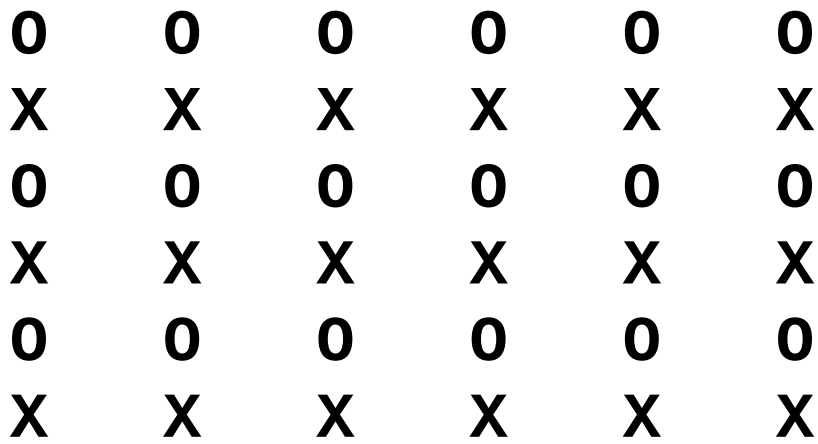
(a)

Proximity



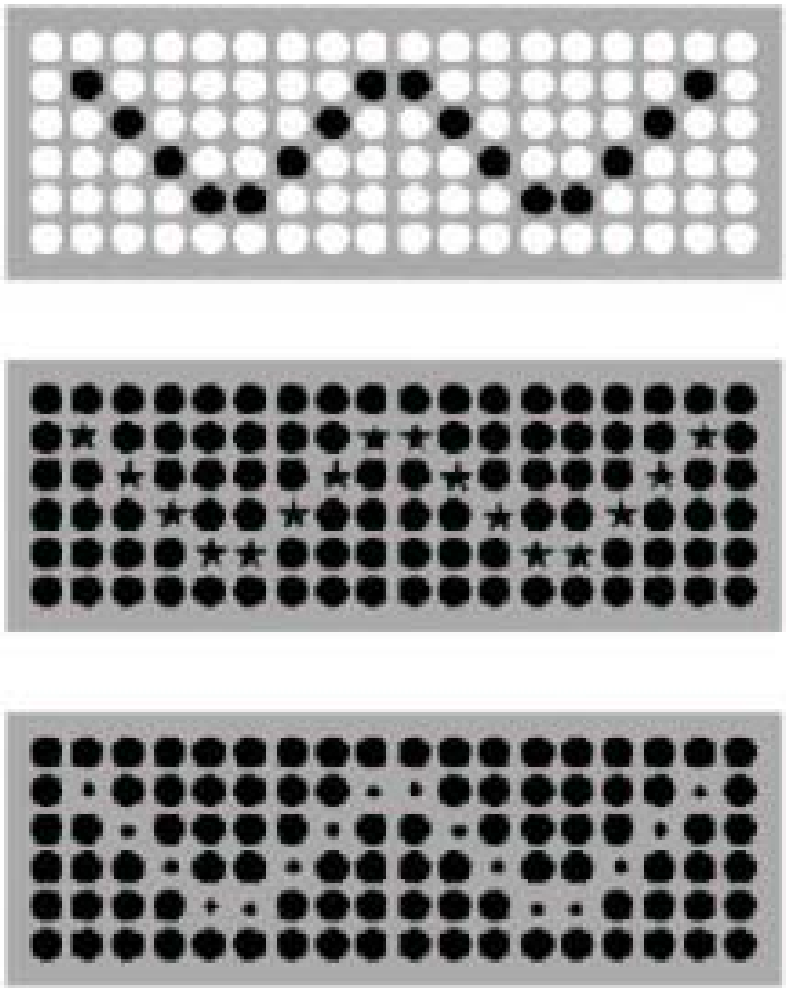
Objects near each other
tend to be seen as a unit

Similarity

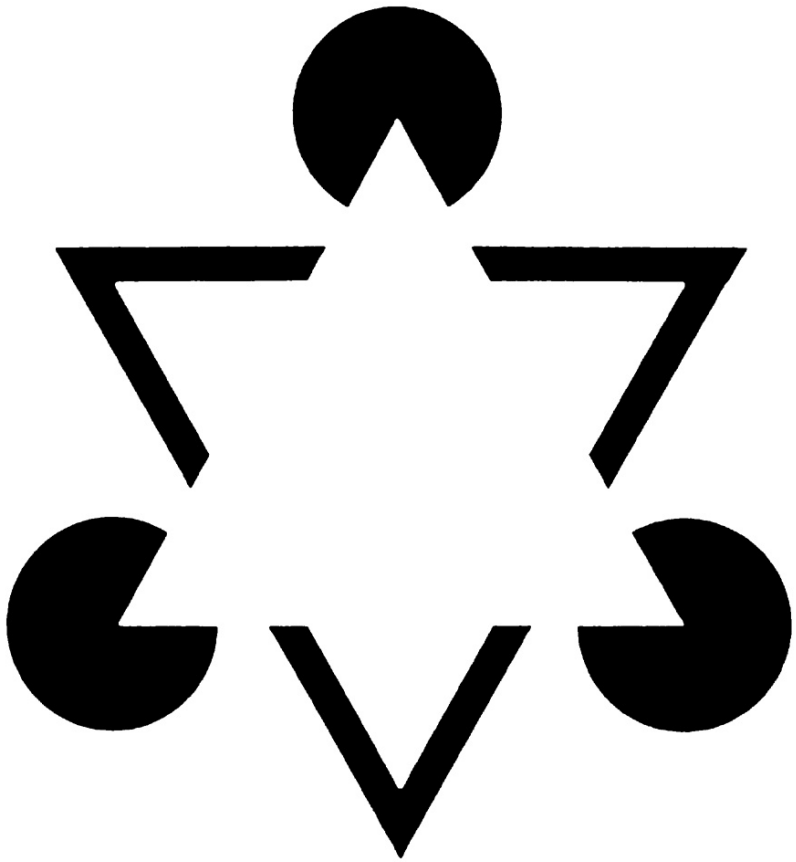


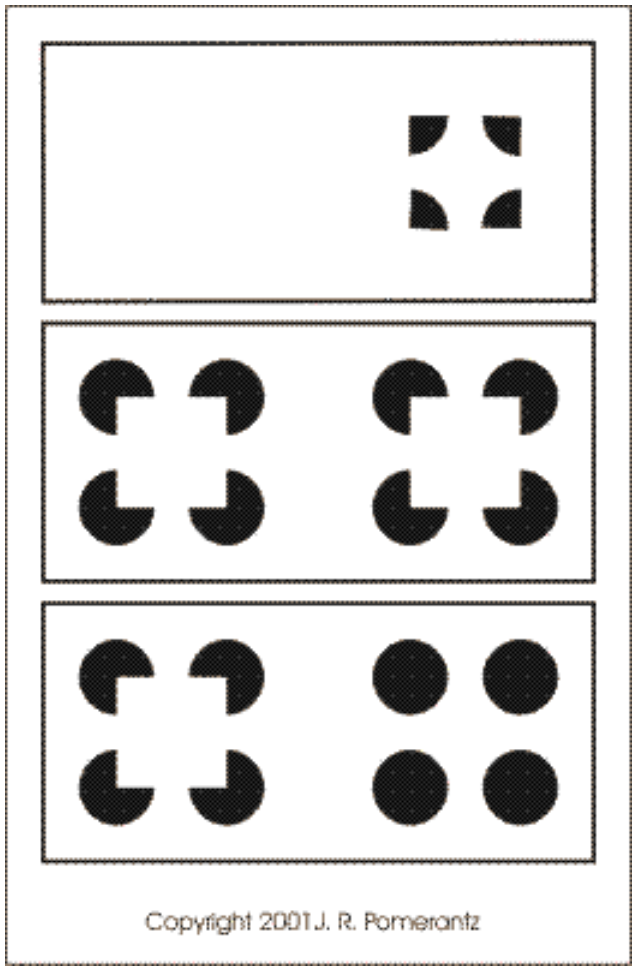
Objects similar to each other tend to be seen as a unit

Similarity

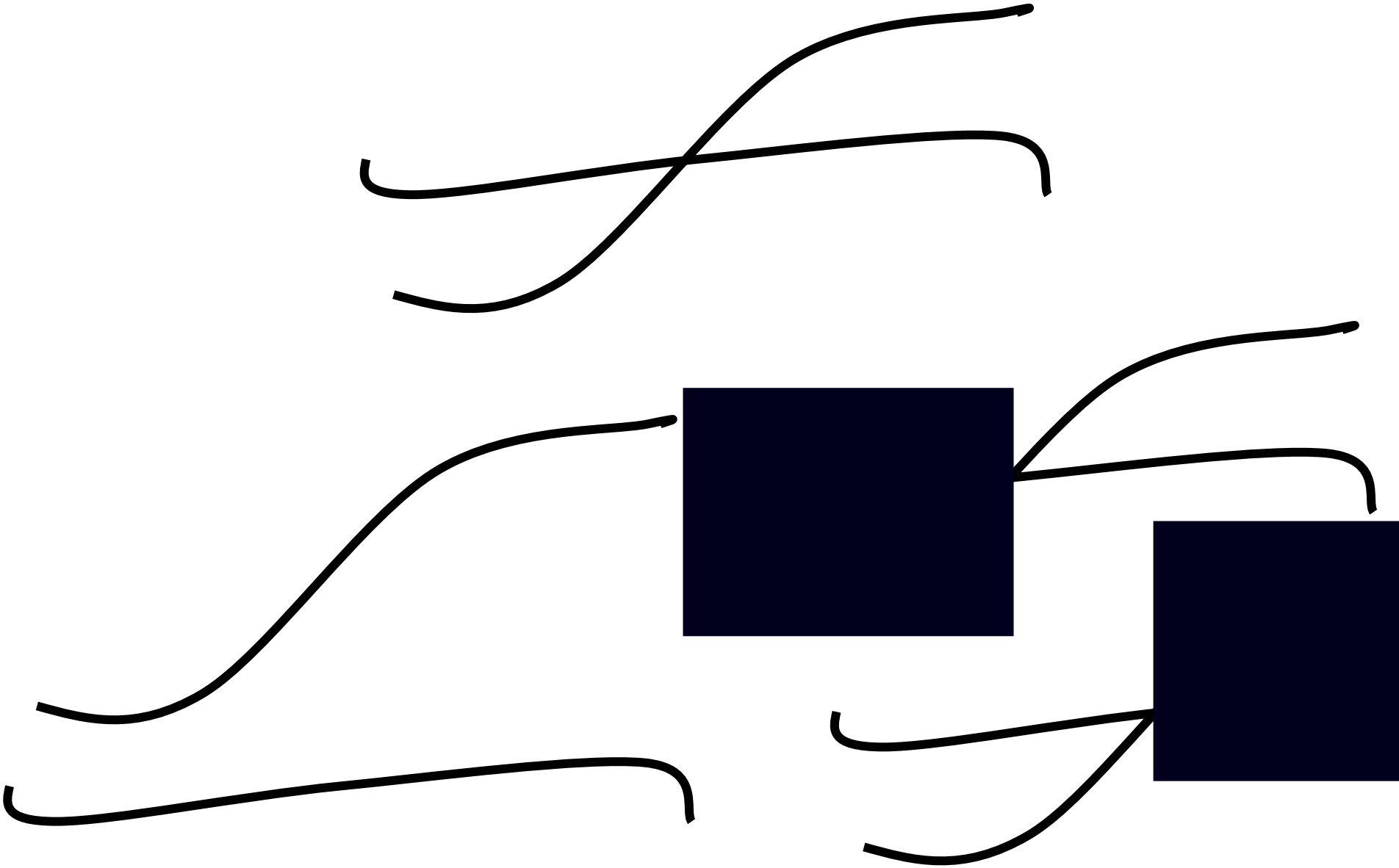


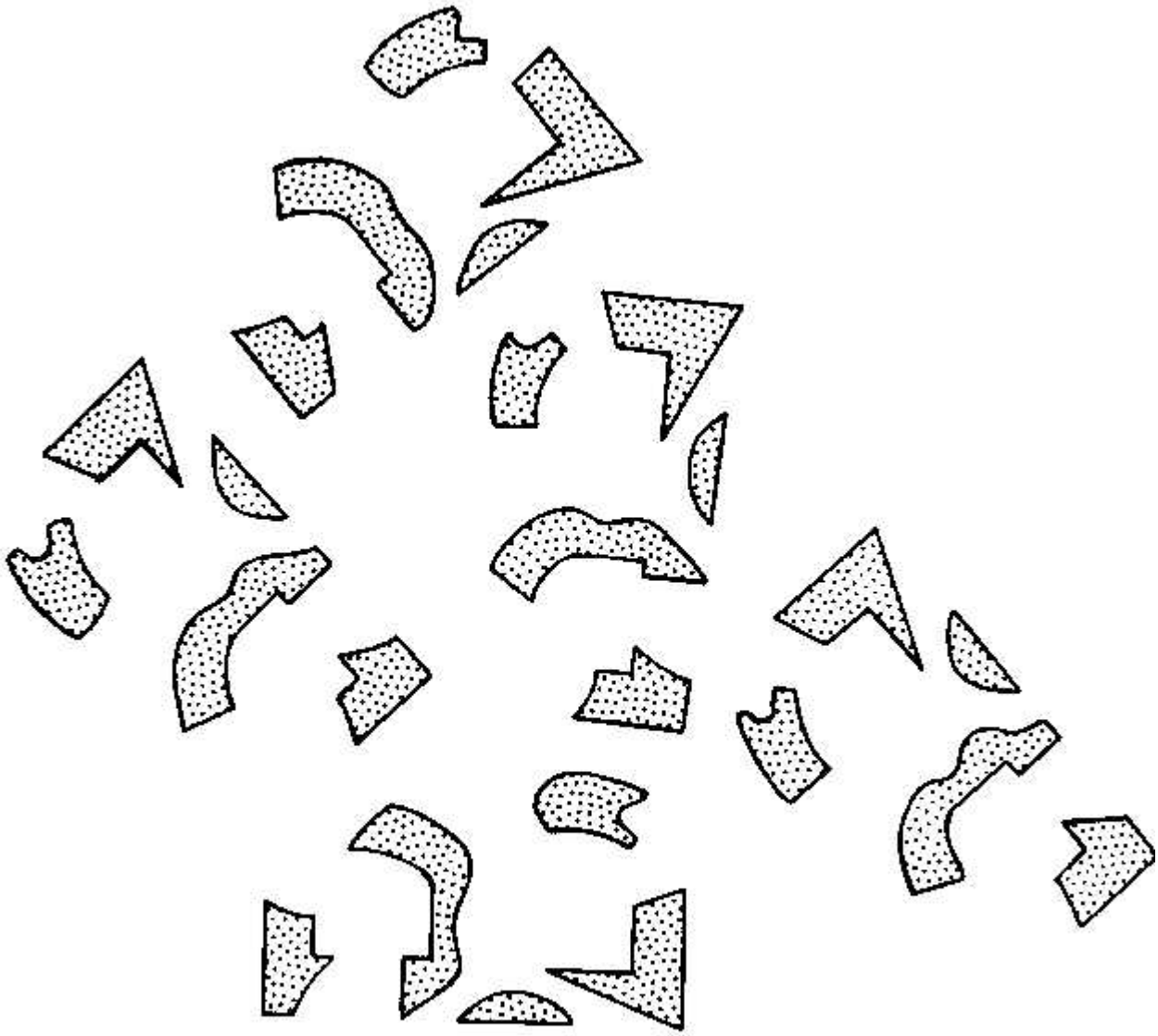
Closure



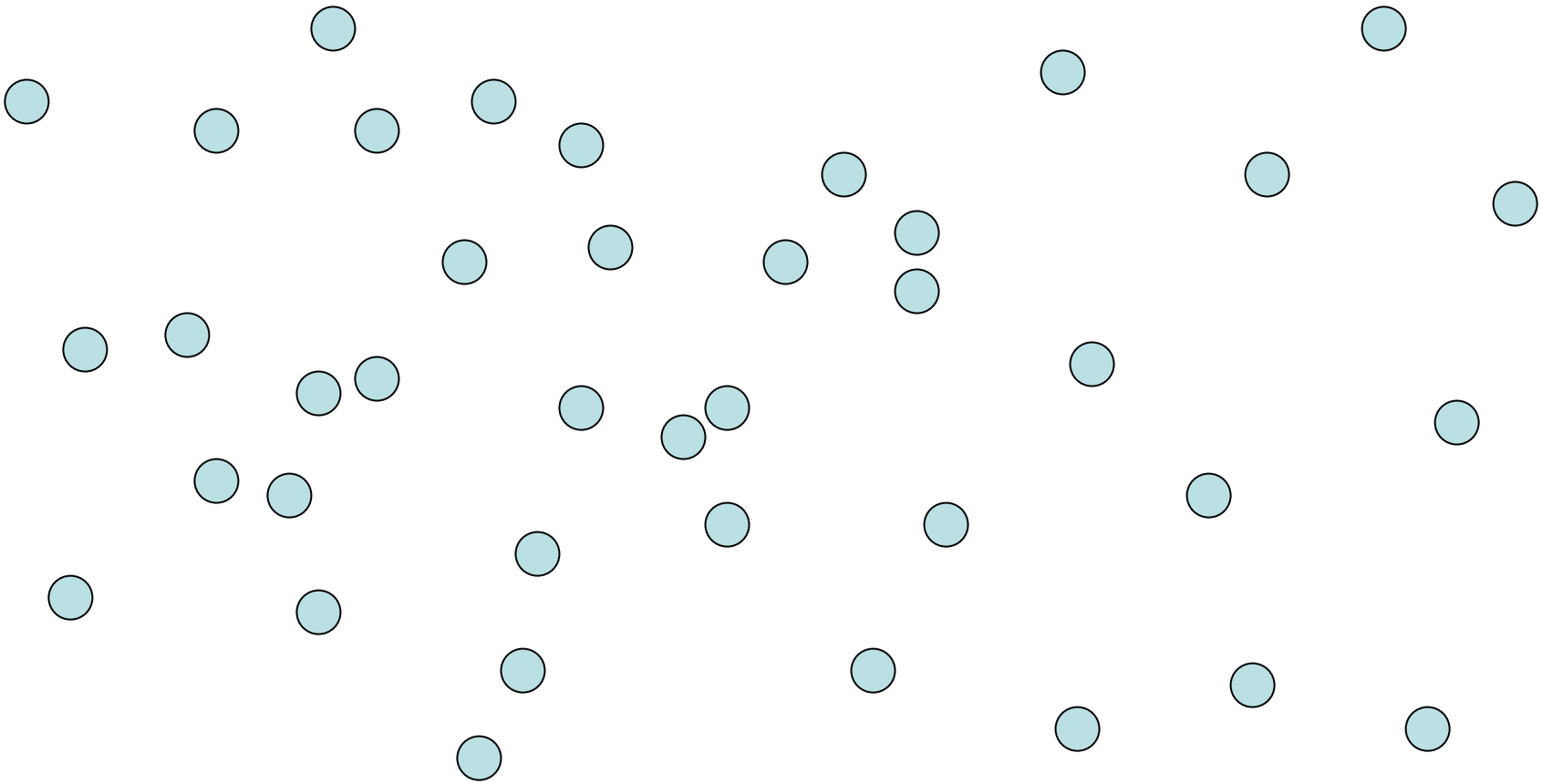

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Continuity

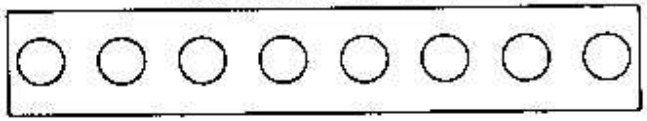




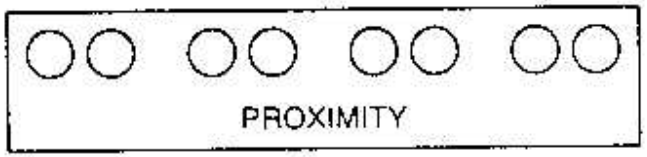
Connectedness or Common Movement

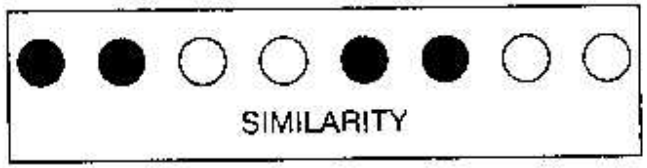


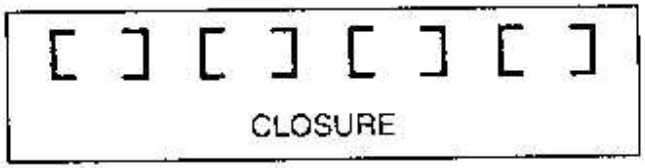
NO GROUPING

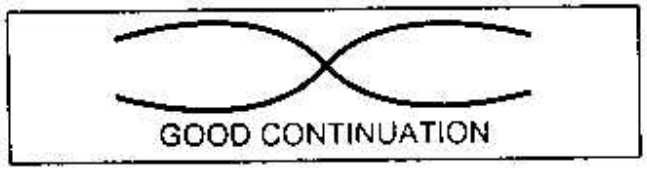


GESTALT LAWS OF GROUPING









NEWLY PROPOSED LAWS





Figure and Ground



1. Perceptual Organization: Summary

• Gestalt laws help us to organize the visual scene into units

• Figure-ground relationships help to define “important” parts of the visual scene

2. Attention

3 meanings of the word attention

1. Selectivity: only aware of a subset of stimuli--*selective attention*.

2. Capacity Limitations: limited ability to handle different tasks or stimuli at once.

3. Sustained mental effort: limited ability to engage in protracted thought, especially on the same subject--*vigilance*.

Selective attention

Selective viewing

people can selectively screen out ‘irrelevant’ visual information

3. Change Detection

"If we say that a thing is great or small by its own standard of great and small, then there is nothing in all creation which is not great, nothing which is not small"

Chuang Tzu (circa 400-300 BC)

The Brain is a Relative Change Detector



Contralateral Neglect

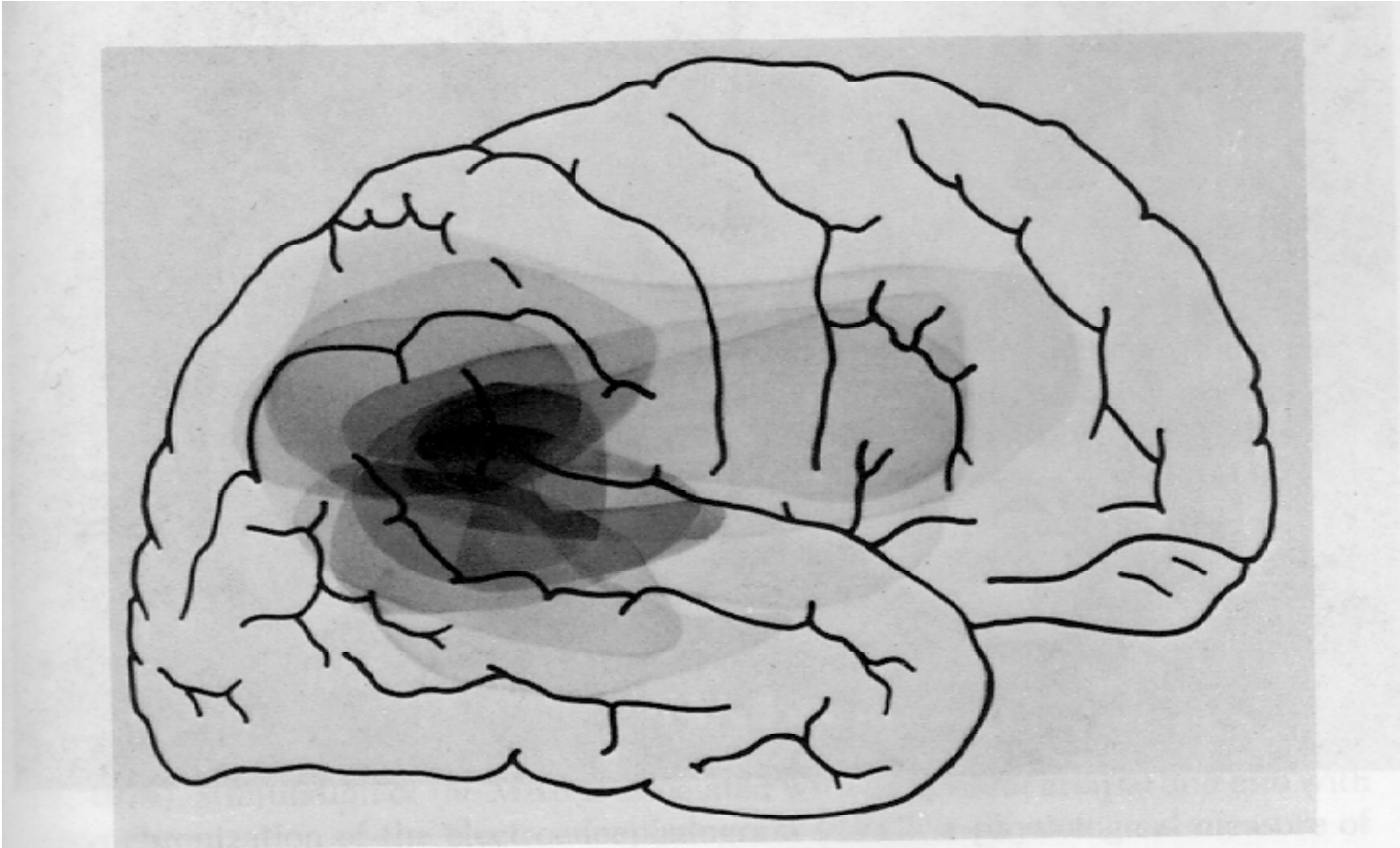


Fig. 10-5. Lateral view of the right hemisphere. Lesions (as determined by CT scan) of ten patients with the neglect syndrome are superimposed.

Contralateral Neglect

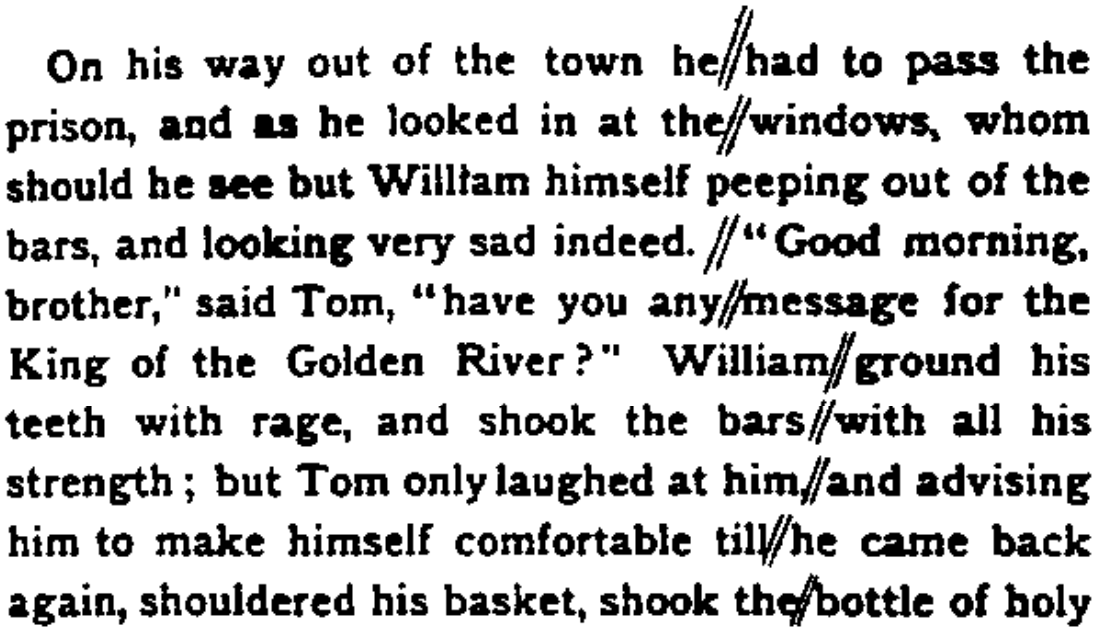


Figure 4.3 Failure to read words on the left of the page: the patient (V.S.N.) read only those words to the right of the parallel bars (Kartsounis & Warrington, 1989).



Fig. 10-2. Performance of patient with hemisptial neglect on line bisection task.

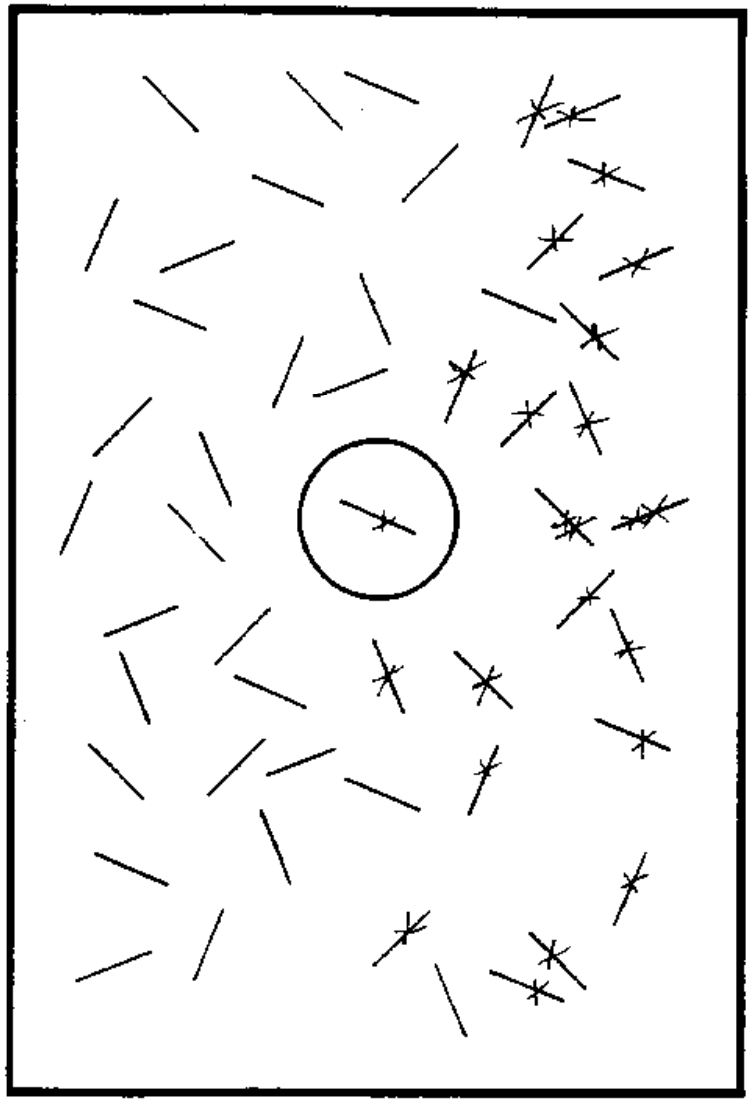


Figure 4.10 Performance by a patient (V.S.N.) on an adaptation of Albert's (1973) line-cancellation task (Kartsounis & Warrington, 1989).

Contralateral Neglect

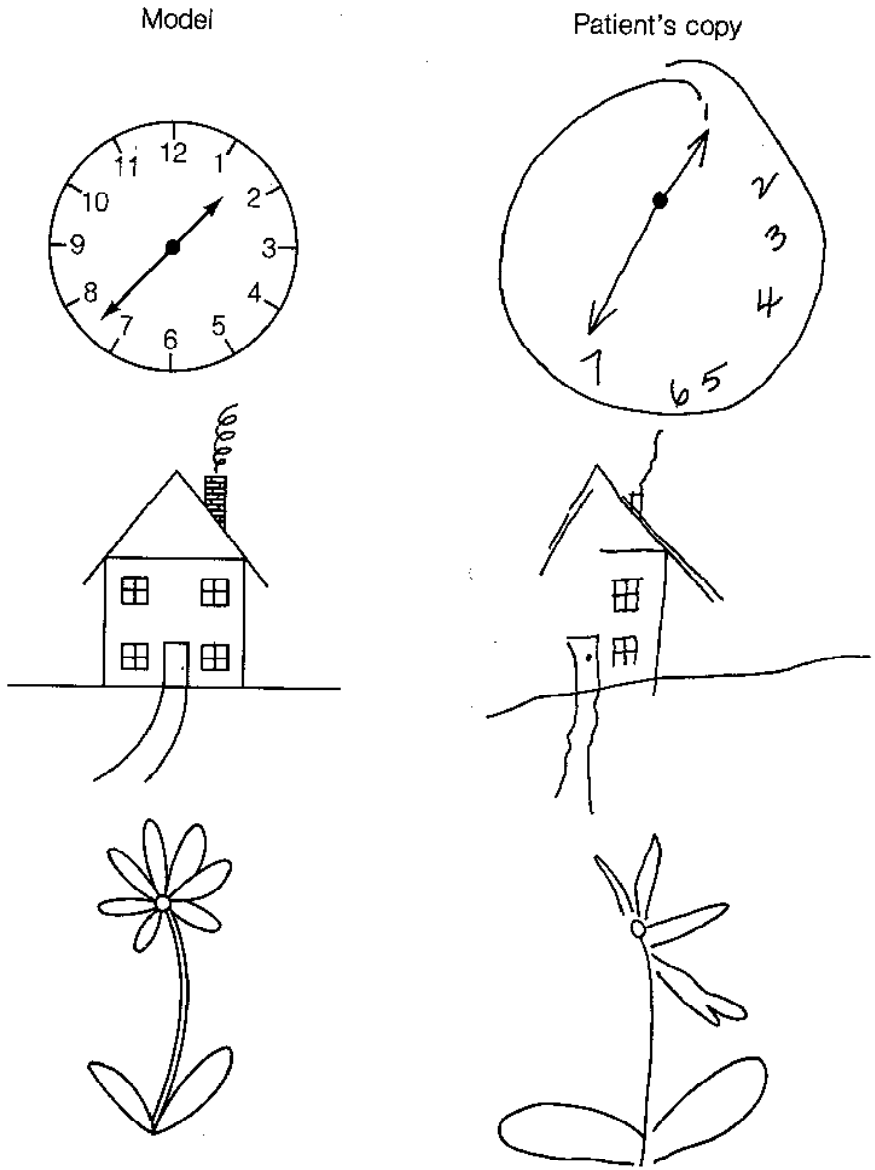


FIGURE 17-6. Drawings copied by a patient with contralateral neglect. From F. E. Bloom and A. Lazerson, *Brain, Mind, and Behavior,* 2nd ed. New York: W. H. Freeman and Co., p. 300. Copyright © 1988. Reprinted with permission of W. H. Freeman and Co.)

Attention

1. There is too much information to perceive all at once
2. Attention enhances some things and filters out other things
3. Unattended information is not perceived (somewhat)
4. Attention deficits can reduce the ability to perceive even when attention is directed at the stimulus

Key Ideas

1. Grouping principles simplify the complex visual environment
2. Attention can be directed, effectively screening out ‘irrelevant’ information
3. The brain is a relative change detector
4. Dramatic changes in the visual environment can easily go undetected
5. Attention deficits can prevent perception of important information (e.g., faces, left-half of visual field, multiple objects)