

## 2.1.x. Exercises

1. Analyze each of the following sentences in as much detail as possible.
  - a. *Mike visited both London and Paris.*
  - b. *Ann wanted white wine but Bill and Carol wanted red.*
  - c. *It will rain and clear off, but it will rain.*
  - d. *That is a new but growing market.*
  - e. *Confucius is affable but dignified, austere but not harsh, polite but completely at ease. (Analects 7:37)*
  - f. *Although Tim lost his glasses and his wallet, each was returned.*
  - g. *Tim lost his glasses and his wallet, and one person found both.*
2. Restate each of the following forms, putting English notation into symbols and vice versa (e.g., **both A and B** becomes  $A \wedge B$ , and  $A \wedge B$  becomes **both A and B**). Indicate the scope of connectives in the result by underlining.
  - a. **both A and both B and C**
  - b. **both both A and B and C**
  - c.  $(A \wedge B) \wedge (C \wedge D)$
  - d.  $A \wedge ((B \wedge C) \wedge D)$
  - e.  $(A \wedge (B \wedge C)) \wedge D$
  - f. **both both both A and B and C and D**
3. The logical forms below are followed by intensional interpretations of their unanalyzed components. In each case, synthesize an idiomatic English sentence that expresses the corresponding interpretation of whole form. Remember that there may be more than one correct answer.
  - a.  $(V \wedge F) \wedge R$   
[F: *Fred visited Florence*; R: *Fred spent a week in Rome*; V: *Fred visited Venice*]
  - b.  $(J \wedge (S \wedge F)) \wedge K$   
[F: *he was fair*; J: *he was a judge*; K: *he had an excellent knowledge of the law*; S: *he was stern*]
  - c.  $(C \wedge T \wedge H) \wedge (W \wedge F \wedge S)$   
[C: *we arrived cold*; F: *we left stuffed*; H: *we arrived hungry*; S: *we left sleepy*; T: *we arrived tired*; W: *we left warm*]

d.  $O \wedge O$

[O: *Old King Cole was a merry old soul*]

4. Calculate truth values for all compound components of the forms below using the extensional interpretation provided in each case.

a. 

A	B	C	$A \wedge (B \wedge C)$
T	T	F	

b. 

A	B	C	D	$((A \wedge D) \wedge C) \wedge (B \wedge A)$
T	T	F	T	

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