Composition and Division

Philosophy and Logic
Unit 3, Section 3.3
Composition and Division

Each line of this poem is great. Hence it must be a great poem.

The voters can be trusted to make the right decision. I am a voter, so I can be trusted to make the right decision.
A diagnosis

• Both arguments treat a predicate true of a class (or a whole) as if it is equivalent to a predicate true of each member of the class (or each part of the whole).
  – A great line of poetry / a great poem
  – the voters can be trusted / a voter can be trusted
The shifts in meaning

Composition: from the parts we compose a whole

Division: given a whole, we divide it into parts
Distributive vs. Collective

• a term $P$ is attributed *distributively* when it is asserted that *every* member of a given class (or part of a whole) has the property $P$.
  – each line of the poem is great
  – each voter can be trusted to make the right decision
Collective attribution

• a term $P$ is attributed *collectively* when it is asserted that the class *as a whole* has the property $P$.
  - it is a great poem
  - the voters can be trusted to make the right decision
The Fallacy of Division

\[ M's \text{ are } P \]
\[ x \text{ is an } M \]
Therefore, \[ x \text{ is a } P \]

The voters can be trusted to make the right decision. I am a voter, so I can be trusted to make the right decision.
The Fallacy of Division

$M$'s are $P$
$x$ is an $M$
Therefore, $x$ is a $P$

The voters can be trusted to make the right decision. I am a voter, so I can be trusted to make the right decision.

- Given a whole, we *divide* it into parts.
The Fallacy of Division

M's are P \[\rightarrow\] Collective attribution
\[x\] is an \(M\)
Therefore, \(x\) is a \(P\) \[\rightarrow\] Distributive attribution

The voters can be trusted to make the right decision. I am a voter, so I can be trusted to make the right decision.

• Given a whole, we divide it into parts.
The Fallacy of Division

\[ M's \text{ are } P \]
\[ x \text{ is an } M \]
Therefore, \( x \) is a \( P \)

We divide a whole into parts. In the premise, \( P \) is applied in its collective sense to a class. In the conclusion \( P \) is applied in its distributive sense to an individual.
The Fallacy of Composition

$x$ is $P$

$M$ is made up of $x$

So $M$ is $P$

Each line of this poem is great. The poem consists of lines. Hence it must be a great poem.
The Fallacy of Composition

$x$ is $P$

$M$ is made up of $x$

So $M$ is $P$

Each line of this poem is great. The poem consists of lines. Hence it must be a great poem.

• From the parts we *compose* a whole.
The Fallacy of Composition

- Each line of this poem is great. The poem consists of lines. Hence it must be a great poem.
- From the parts we compose a whole.
The Fallacy of Composition

\( x \) is \( P \)
\( M \) is made up of \( x \)
So \( M \) is \( P \)

We compose a whole from its parts. In the premise \( P \) is applied distributively, to a member making up a class. In the conclusion it is applied collectively.
A “decision tree”

• The task: name the fallacy that the passage most clearly commits (see book, 6.5).
  – There should be evidence in the passage sufficient to convict the author of the fallacy in question.
  – Sometimes there is more than one possible correct answer. You need only name one.
  – If several could apply, the best answer is the one in which it would be easiest to get a conviction.
A decision tree for fallacies

• Is there some word that occurs in both the premise and the conclusion, AND whose meaning shifts in between?
  – If either conjunct gets a “no”: No fallacy!
  – If “yes” to both conjuncts, you have a Fallacy of Clarity.
Tree, branch 1

a. Do we argue from part to whole, or from whole to part?
   – If no:  GO TO NEXT BRANCH
   – If yes:  ask which way the shift goes.
     From part to whole: composition.  STOP
     From whole to part: division.  STOP
b. Are there two distinct dictionary definitions for the word, which both get used?

The word is ambiguous. These resemble *puns.* The argument *relies* on the shift in meaning.

– If yes: *equivocation.* STOP.
c. Is the word not ambiguous, but *vague*?

Does the argument exploit the small differences between items in the gray zone to conclude that there is no difference between the extremes?

– If yes: *slippery slope*. STOP
Exercise 3.7

Each of the following arguments commits some fallacy of clarity. Name the fallacy that the passage most clearly commits. (6 pts each.).

2. Violations of laws are bad. Miracles are violations of the laws of nature. So they are bad.
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2. Violations of laws are bad. Miracles are violations of the laws of nature. So they are bad.

Equivocation (criminal law v. laws of nature)
3. College students are taking hundreds of courses this summer. You are a college student, so you are taking hundreds of courses this summer.
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Division (from whole to parts. College students as a whole are taking hundreds of courses.)
4. No snowflake can cause much damage. An avalanche is composed of snowflakes. Hence an avalanche cannot cause much damage.
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Composition (from parts to whole)
5. If we intervene we will likely be drawn into local police conflicts. We will stay beyond our pledged exit date. Soon more troops will be called in and we will expand our presence. Before you know it, it will be another Vietnam.
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Slippery Slope (vagueness of "local police conflicts")
6. Jones was a very promising youth, but he has not fulfilled that promise. Only a liar does not keep his promises. Jones must, therefore, be a liar.
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Equivocation (“promising” as having high potential v. “making a promise”)