

## **More on Consistency and Validity**

### **Keith Burgess-Jackson**

To say that a set of two or more propositions is **consistent** is to say that it is *possible* for all of them to be true. It does *not* say that they *are* true, only that they *could* be. To say that a set of two or more propositions is **inconsistent** is to say that it is *not* possible for all of them to be true, i.e., that at least one of them is false. Given these definitions, all of the following are possible:

**1. A consistent set of true propositions.** Note that if two or more propositions are *in fact* true, then they *can* be true, and if they *can* be true, then, by definition, they are *consistent*. So all sets of true propositions are consistent sets.

**2. A consistent set of false propositions.** The propositions that John Kerry was elected president in 2004 and that the Detroit Tigers won the 2006 World Series are false, but they are consistent. One can easily imagine both propositions being true; they are neither contraries nor contradictories.

**3. An inconsistent set of false propositions.** The propositions that all members of Congress are Democrats and that no members of Congress are Democrats are false, and they can't both be true. They are contraries. If two propositions are contraries, they can both be false but can't both be true; hence, they are inconsistent.

What's *impossible* is this:

**4. An inconsistent set of true propositions.** If a set is inconsistent, then, by definition, not all of its members can be true. Hence, at least one member is false. So there can't be an inconsistent set of true propositions.

Do you see why an argument with inconsistent premises is valid? If the premises are inconsistent, then, by definition, it is not possible for all of them to be true. But if it's not possible for all of them to be true, then it's not possible for all of them to be true *and* the conclu-

sion false. But that's the definition of "validity"! Keep in mind that while all arguments with inconsistent premises are *valid*, they are *unsound*, since sound arguments, by definition, have true premises.