Announcements and Such

- One Song — *Pink Floyd*
  - "Pigs (Three Different Ones)" from *Animals*
- **Final Exam will be:**

  Wednesday, May 16, 5–8pm @ 141 MCCONE
- **Possible Questions to be posted tomorrow**
  - 9 posted/6 on final/choose & answer 3
- **I will not have OH's Thursday *or* next week, but I'll be on email. And, I'll have OH May 14, 1–5pm**
- **James will have a Review Session on Monday, May 14th at 4pm in 220 Wheeler**
- **Today:** *Skepticism IV (Paradoxes & Closure)*
- **Next Time:** *Skepticism V (Contextualism)*
- **Tuesday**: In-class Review Session (Vanessa)

Skepticism IV
The Paradox of the Knower I

- Consider the following self-referential statement:
  - (p) Sentence p is not known to be true.
- Oddly, we can *prove* that p is true, as follows:
  - (1) If p is false, then p is true.
  - (2) If (1), then p is true.
  - Therefore, (3) p is true.
- To see (1), reason as follows. Assume p is false. Nothing false can be known to be true. Therefore, p is not known to be true. Hence, p.
- (2) is a theorem of logic. Basically, (2) is equivalent to: either p is true or p is true.
- (3) follows from (1) and (2) by *modus ponens*.
- So, we've just *proven p* (*self-evidently*)!

Skepticism IV
The Paradox of the Knower II

- Here's another plausible principle:
  - (*) If you can *prove p* (*self-evidently*), then you *know* that p is true (*a priori*).
- Therefore, by (*), we *know* that *p is true* (*a priori*).
- Hence, *p is* known to be true.
- But, p says of itself that it is *not* known to be true! This is **The Paradox of the Knower**.
- NOTE: (*) *is a subtle instance of closure*:

  If $K\top$ and $K(\top \Rightarrow p)$, then Kp.
- Here's a related paradox:
  - (G) God does not know that G is true.
- ***We*** can *prove* (unparadoxically!) that God does not know that G is true! But, **He** *can't*!

Skepticism IV
Epistemic *vs* Metaphysical Possibility I

- When I say things like the following (and I do):
  - Goldbach's conjecture *might* be true.
- I do *not* mean to imply that Goldbach's conjecture is *metaphysically* possible.
- After all, I know that mathematical conjectures are *non-contingent*. So, if I were to assert *that*, I might as well say the following instead:
  - Goldbach's conjecture *must* be true.
- But, I do *not* want to assert *that*, since it is a long-standing open question in mathematics.
- Thus, the kind of possibility involved in the first claim is *not metaphysical* possibility.
- Then, what is it? It's *epistemic* possibility.

Skepticism IV
Epistemic *vs* Metaphysical Possibility II

- Roughly, *epistemic* possibility is something like:
  - p is epistemically possible for S if p is consistent with everything S knows.
    - Slogan: "For all S knows, p is true."
- On this sort of reading, my claim about Goldbach's conjecture seems reasonable.
- I don't have sufficient mathematical knowledge to *rule-out* the possibility that GC is true.
- We have to be careful about closure here! For *metaphysical* possibility ($\Diamond$), the following is OK:
  - If $\Diamond p$ and $p \Rightarrow q$, then $\Diamond q$.
- But, this may *not* hold for *epistemic* possibility. I will use $\blacklozenge$ for *epistemic* possibility (for S).

Skepticism IV
Epistemic *vs* Metaphysical Possibility III

- The following is clearly *incorrect*:
  - If $\blacklozenge p$ and $p \Rightarrow q$, then $\blacklozenge q$.
- After all, S may not *know* that $p \Rightarrow q$.
- But, even the following principle is worrisome for people like Dretske who reject K-closure:
  - If $\blacklozenge p$ and $K(p \Rightarrow q)$, then $\blacklozenge q$.
- Just think about the zebra example. Dretske (I presume) would say that it *is* epistemically possible that it's a cleverly painted horse.
- And, this entails that it's *not* a zebra (and we can assume that the agent in question knows *this*).
- But, Dretske says it's *not* epistemically possible that it's not a zebra (since S knows that it *is*).

Skepticism IV
The Knowability Paradox I

- Skepticism in its *strongest (and modal) form* is:
  - *All* truths are unknowable.
- Even if this strong version isn't true, a weaker (modal) form of skepticism may seem plausible:
  - (†) *Some* truths are unknowable.
- Surprisingly, *denying* this weaker claim (†) leads to paradox — this is **The Knowability Paradox**.
- In order to explain how the paradox arises, we need to introduce a bit of logical notation (the framework here is called *epistemic modal logic*).
- I'll use "Kp" to indicate that p is known, "$\Box p$" to indicate that p is *necessarily* true, and "$\Diamond p$" to indicate that p is *possibly* true (it's important that these are *metaphysical*!).

Skepticism IV
The Knowability Paradox II

- Now, I will argue that *if* all truths are know*able*, then all truths are (actually) *known*.
- First, assume that all truths are know*able*:
  - In other words, for every proposition p, if p is true, then it is *possible* that p is known.
  - (1) For all p, $(p \Rightarrow \Diamond Kp)$.
- Our goal is to prove, from (1), that all truths are (actually) *known*. That is, for every proposition p, if p is true, then p *is* known.
- Assume, for *reductio*, that this is false. That is, assume that *some* truth q is *unknown*, *i.e.*,
  - (2) $q \,\&\, \sim Kq$.
- It can be shown that (1) and (2) lead to contradiction. Let's go through the reasoning.

Skepticism IV
The Knowability Paradox III

- From (1) and (2), we may infer the following (that is, we may infer that (2) is know*able*):
  - (3) $\Diamond K(q \,\&\, \sim Kq)$
- Here's where closure comes in. *If* we assume:
  - $K(p \,\&\, q) \Rightarrow Kp \,\&\, Kq$, *and*
  - If $\Diamond p$ and $p \Rightarrow q$, then $\Diamond q$.
- *Then*, we may infer from (3) that:
  - (4) $\Diamond(Kq \,\&\, K\sim Kq)$
- Moreover, since knowledge is *factive* ($Kp \Rightarrow p$),
  - (5) $\Diamond(Kq \,\&\, \sim Kq)$
- But, "$Kq \,\&\, \sim Kq$" is a *contradiction*. So, by *reductio*, (2) is false. Hence, we have shown:
  - *If* ~(†), *then* everything is (actually) *known*.

Skepticism IV
The Preface Paradox & Closure Revisited I

- Earlier in the course, we discussed the preface. Here's a slightly more careful reconstruction:
  - I am justified in believing each claim that appears in my (sufficiently ambitious) book.
  - I know that *if* each sentence in my book is true, *then* my book contains no errors.
  - But, I am *not* justified in believing that my book contains no errors, because I am justified in believing that all (sufficiently ambitious) books contain some errors.
    - NOTE: closure sneaks into the argument *against* closure right here! Consider:
    - I am justified in believing that all (sufficiently ambitious) books contain errors
    - Therefore, I am justified in believing that *my book in particular* contains some errors.

Skepticism IV
The Preface Paradox & Closure Revisited II

- That's OK here, since it means we've showed that *if* closure is true, *then* it's false — which suffices to show that it's *in fact* false!
- Now, what's more interesting is the "fallibility" version of the preface, which talks about one's *entire* set of current beliefs (rather than a book)
  - I am (now) justified in believing *each* of my (current) beliefs p_1, p_2, …, p_n.
  - I know that *if* each of p_1, p_2, … p_n is (now) true, *then* I (currently) have no false beliefs.
  - But, I am *not* justified in believing that I (currently) have no false beliefs.
- This could be because of humility. Or, it could be because an oracle tells you that "at least one of your (current) beliefs is (now) false."
- Let's take the latter case for a moment.

Skepticism IV
The Preface Paradox & Closure Revisited III

- OK, let's say that after the oracle's testimony, you *know that* your current set of beliefs {p_1, p_2, … p_n} is *inconsistent* (but *you have no information about which* of your beliefs is false).
- Note: at this point, it's no longer really *closure per se* that's at issue. It is assumed you also *know* that your current belief set *entails any p*.
- *Surely*, we *wouldn't* want to say that you're justified in believing *any* proposition *p* here!
- So, I take it, nobody would defend closure (*per se*) in *this* sort of situation. If you did, then how would you avoid believing *everything*?
- Moreover, because you have no information about *which* belief is false, you *needn't* feel *any pressure at all* to *revise* any of your beliefs p_i.
- Sometimes, this pressure *does* seem to exist.

Skepticism IV
The Preface Paradox & Closure Revisited IV

- Suppose you've been asked to produce a chronology of 26 events leading up to a serious accident. You report the following:
  - *p1*: Event A preceded event B.
  - *p2*: Event B preceded event C.
  - *p3*: Event C preceded event D.
    …
  - *p26*: Event Z preceded event A.
- I point out to you that, given transitivity and non-reflexivity of temporal precedence (which you accept), your chronology entails a contradiction.
- This "*reductio*," *seems* to have critical "bite". It *seems* to expose a fundamental inadequacy of the chronology you have produced. *Why*?
- Can we tell a *general* differentiating story to distinguish "OK" from "non-OK" accounts?

Skepticism IV
The Preface Paradox & Closure Revisited V

- Returning to the fallibility version. It sounds very odd to say things like the following:
  - Everyone *else* has false beliefs (now), but *I* don't.
  - All of my *past* (and *future*!) *selves* have (or will have) had some false beliefs, but *I* don't *now*.
- The defender of closure would have to say things like this. And, they also think it's OK to say:
  - It's extremely improbable that I (now) have no false beliefs, but that's in fact the case.
- So, they are happy with believing that it's *highly probable* that I (now) have some false beliefs. You just don't get to believe that this is *true*.
- All of these issues are expertly discussed in Christensen's *Putting Logic in its Place* (Ch. 3).

Skepticism IV
Closure and the "Conjunction Fallacy" I

- Consider the following evidence about Linda:
  - (E) Linda is 31, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and she also participated in antinuclear demonstrations.
- Which do you think is more probable, given (E)?
  - (H1) Linda is a bank teller.
  - (H2) Linda is a feminist bank teller.
- Many people say that H2 is more probable, given E than H1 is. But, this violates probability theory. Note: H2 = H1 & q, where q = Linda is a feminist.
- So, this is a case in which many people say:
  - $\Pr(p \,\&\, q \mid \text{E}) > \Pr(q \mid \text{E})$

Skepticism IV
Closure and the "Conjunction Fallacy" II

- Say you adopt an account of belief that says:
  - *S believes p* iff *S* assigns sufficiently high probability to p (given their evidence for p).
- In this case, you could end-up saying that:
  - *S* believes p & q
  - *S* does not believe q
- That would be a violation of closure. Indeed, it's a violation of a rather weak-sounding rendition of closure (called "single premise" closure).
- This is similar to the form of (knowledge) closure that was assumed in the Knowability Paradox.
- I suspect that what's happening here is not a violation of belief closure, but a conflation of "probable given" and "well supported by".