Announcements and Such

- Three Songs (by request) — *Ratatat* [*Classics*]
  - "Loud Pipes"
  - "Nostrand"
  - "Spanish Armada"
- **Final Exam will be:**
  Wednesday, May 16, 5–8pm @ 141 MCCONE
- **Possible Questions to be posted on May 1**
- **Today:** *Skepticism II*
  - Finishing-up inductive skepticism from last time
    - Paradoxes of confirmation (inductive support)
  - Fallibility and general skepticism

Skepticism I
Skepticism About Induction VII

- Nelson Goodman posed a "new riddle of induction", which aims to show that there can be no *purely formal* conception of inductive support
- It is sometimes claimed that the premise of the following argument *inductively supports* its conclusion — and in a *purely formal* sense:
  - All observed *A*'s have been *B*'s.
  - Therefore, the next *A* observed will be *B*.
- Example:
  - All observed emeralds have been green.
  - Therefore, the next emerald observed will be green.
- Goodman purports to show that, whatever support the premise of such an argument might provide for its conclusion, it cannot be *purely formal*.

Skepticism I
Skepticism About Induction VIII

- Goodman defines a predicate "Grue" as follows:
  - *x* is Grue = *x* is green iff *x* has been observed
- Now, consider the following argument:
  - All observed emeralds have been Grue.
  - Therefore, the next emerald observed will be Grue.
- Since this argument is of the "good form", *its* premise inductively supports *its* conclusion.
- But, this seems odd. Assuming that emeralds don't change color over time, and that there are some unobserved emeralds, this is equivalent to:
  - All observed emeralds have been green.
  - Therefore, the next emerald observed *won't* be green.
- This seems to show that IL is not *purely formal*.

Skepticism I
Skepticism About Induction IX

- In other words, the assumption that there is a purely formal notion of inductive support *seems* to have led (the details are subtle) to a case in which:
  - *E* inductively supports *p*, ***and***
  - *E* inductively supports ~*p*
- Where, *E* and *p* are defined using "Grue", as above.
- Goodman concludes (*via* "*reductio ad absurdum*") that there is no purely formal notion of inductive support. This is better than Popper's argument.
- But, this also conflates (to some extent) *logic* and *epistemology*. *Even if* it turned out that this was a situation in which formal inductive support relations were "absurd", what would *that* show?
  - Analogy: if *B* is logically *inconsistent*, then *B* *deductively* supports *p* and ~*p*! *So what*?

Skepticism I
Skepticism About Induction X

- I think there are better arguments against "purely formal" explications of inductive support.
- Carnap proposed a *purely formal analogical inference* principle to the effect that:
  - The more properties two objects share, the more probable it is that they share a novel property.
- Carnap's notion of "similarity" involved *counting shared predicates*, which is *language/description dependent* in the way that formal "verisimilitude" measures were (they involved *counting sentences*).
- This is a general problem for "naive" formal approaches. One crucial problem with "naive" approaches is that they assume "formal" means the same thing in both deductive and inductive logic.
- This is (mainly) where I think they go wrong… This is a subtle issue, that's beyond our scope here.

Skepticism I
Skepticism About Induction XI

- One more puzzle. It is often assumed that:
  - "*Aa* & *Ba*" supports "All *A*s are *B*s".
  - And, if *E* supports *H*, then *E* also supports anything that is logically equivalent to *H*.
- These two assumptions imply the following:
  - "~*Aa* & ~*Ba*" supports "All *A*s are *B*s".
- This *seems* odd. Example: that *a* is a non-black non-raven supports that all ravens are black.
- This is known as "the raven paradox".
- I'll be teaching a seminar on inductive logic/ inference in the Fall (I'm writing a book on this).
- I'll also be teaching an undergraduate course on probability and induction in Spring 2008.

Skepticism II
Fallibility and Skepticism I

- General skepticism often trades on an assumption of the *infallibility* of knowledge.
- In slogan form, we might express this as:
  - If *S* knows that *p*, then *S can't be wrong about p*
- This slogan is *ambiguous*. It could express (at least) three propositions about knowledge:

1. *Necessarily*, (*S* knows that *p* ⇒ *p is true*).
2. *S* knows that *p* ⇒ *Necessarily, p is true*.
3. *S* knows *p* ⇒ *Necessarily, S*'s *belief* that *p is true.*
   [remember Zagzebski's infallibilism: B*p* ⇒ *p*]

- These three all have different meanings Claim (1) is a *wide*-scope modal claim, whereas (2) and (3) are distinct *narrow*-scope modal claims.

Skepticism II
Fallibility and Skepticism II

- (1) is just the *factivity* of knowledge. (1) is true, of course, but it won't help the skeptic. (1) is consistent with knowledge being *fallible* (indeed, it's even consistent with *accidental* knowledge!).
- (2) is the *necessity principle*. This principle would help the skeptic for sure! It would imply that *we can't know any contingent truths*!
- But, (2) just seems *false*. At least, there seems to be no good *independent* reason to accept (2).
- (3) is the *infallibility principle* (proper). It is distinct from (2). It applies to beliefs that are *self-grounding*, but which can be *contingent. E.g.,*
  - *S* believes that *S* exists ⇒ *S* exists
- That is, *S*'s *beliving p entails that p is true.* (3) would also help the skeptic! But, *why believe* (3)?

Skepticism II
Uncertainty and Skepticism I

- Uncertainty can cut deeper than infallibility:
  - Say I have a true belief that something is a theorem (even a theorem of logic), but I am not justified in taking my proof to be correct (in fact, let's say I have doubts about the proof).
  - This sort of uncertainty arises when one's grounds are not (self-evidently) *conclusive*.
- Note: this is a case in which my belief ***is** infallible* (even in the strongest sense!). The skeptic will insist, however, that it is (still) *not knowledge*.
  - **Certainty Principle (CP)**: If *S* cannot *tell for certain* whether *p* is true, *S doesn't know p*.
- This principle is also used by skeptics (in a more general vein) who insist we cannot tell for certain whether we're in the good case or the bad case.

Skepticism II
Uncertainty and Skepticism II

- There is another, related principle involving uncertainty that the skeptic can appeal to:
  - **The Back-Up Principle (BUP)**: If *S* believes *p*, and *p* is (known by *S* to be) inconsistent with *p**, then *S*'s belief constitutes knowledge *only if* it is *backed up by S*'s knowing that *p** is false.
  - Example: If you believe (*p*) that there is a green field before you, which you know is incompatible with (*p**) that you are hallucinating, then you will know *p is true only if* you know *p** is *false*.
- Of course, there will always be many "skeptical alternatives" available that are incompatible with any given proposition the skeptic wants to target.
- Let's think about the **CP** and the **BUP**, in turn. We'll see they are intimately related to *closure*.

Skepticism II
Uncertainty and Skepticism III

- What does "telling for certain whether *p*" *mean*?
  - It might mean acquiring *infallible* belief in a proposition that *entails p* (or its denial) [*e.g.*, Descartes' belief that "God is no deceiver"]. But, if it means *this*, then it *presupposes* the *infallibility principle*, which is at issue here, and this *begs the question* against commonsense.
  - It might just mean ascertaining the truth in question by some means that justifies one in being "psychologically" certain of what one can tell, even if not "maximally" or *logically* certain.
    - *I.e.*, our *grounds g for p* are such that, *given g, p empirically* cannot be false, because this combination would *violate the laws of nature*.
- Note: as above, this only implies a *wide*-scope necessity claim, *not* a *narrow* scope necessity!

Skepticism II
Uncertainty and Skepticism IV

- In other words, it might be the case that (here, for instance, take *g* to be *perceptual* grounds):
  - It is empirically necessary that (wide-scope!):
    S believes *p* on the basis of $g \Rightarrow p$ is true
  - This does *not* imply that (narrow-scope!):
    S believes *p* on the basis of *g*
    $\Rightarrow$ it is empirically necessary that *p*
- The skeptic owes us an argument as to why the wide-scope truth is not sufficient for knowledge (and/or why there are no "law based" beliefs).
- To the extent that Skepticism trades on such narrow-scope infallibility-type claims, it seems that skepticism is not terribly compelling.
- There is a more general issue lurking here, which harkens back to the inductive skepticism stuff…

Skepticism II
Entailment and Inferential Grounds I

- The back-up and certainty principles seem to presuppose the following *entailment principle*:
  - (**E**) If S knows p, S's total evidence/grounds *entails* p (*i.e.*, S's total evidence *entails* $\sim p^*$, for *all* possible ways p^* in which p might be false).
  - **Example**: by (**E**), S doesn't know that there is a zebra before her (p) *if* S's total evidence doesn't *rule-out* it's being a cleverly painted horse (p^*).
- At this point, it's useful to recall *closure*:
  - (**C**) If Kp and $K(p \Rightarrow q)$, then Kq.
- If we enforce (**C**) here, then the assumption that S *does* know p implies that S *also* knows $\sim p^*$, since *that's* entailed by p (and S knows that it is).
- So, (**C**) $\Rightarrow$ (**BUP**)! The other direction looks OK, too

Skepticism II
Entailment and Inferential Grounds II

- To see why (**C**) and (**BUP**) are *equivalent*, note:
  - (**BUP**) If Kp and $K(p \Rightarrow \sim q)$, then $K{\sim}q$.
- What about (**C**) and (**CP**)? This is less clear. As we saw above, we need a more precise story about "*telling for certain* whether p is true".
- This brings us back to Dretske's argument *against* closure. Dretske insists that we *do* know that it's a zebra before us (commonsense).
- Next, he notes that *closure* then implies that we *also* know it's *not* a cleverly painted horse before us. That is, closure implies we *also* know $\sim p^*$.
- But, he *also* thinks we do *not* know $\sim p^*$. And, as a result, Dretske seems forced to *reject* closure.
- *But, **why*** does Dretske think we *don't* know $\sim p^*$?

Skepticism II
Entailment and Inferential Grounds III

- Things are a bit dicey for Dretske here. He can't argue that we don't know $\sim p^*$ on the basis of **BUP**, since rejecting closure *is* rejecting **BUP**!
- Perhaps he is applying something like **CP** here? On this reading, his worry is that *we can't tell for certain* that it's not a cleverly painted horse.
- But, Dretske needs to be careful here, too, since he doesn't want to be a *skeptic* either (*viz*., how *could* we tell for certain that it's a *zebra?!*)!
- So, Dretske must have some *other* reason for thinking that we don't know $\sim p^*$. Whatever this reason is, it must be *weaker than closure*, and yet it must *not* lead us down the road to skepticism.
- Dretske offers an account involving "relevant alternatives" that manages to walk this tightrope.

Skepticism II
Entailment and Inferential Grounds IV

- On a "relevant alternatives" account of knowledge, S's belief that p constitutes *knowledge if* S's total evidence rules-out (not *all **possible***, but) all ***relevant*** alternatives to p.
- So, Dretske's account is weaker than (**BUP**), hence, weaker than (**C**). This allows him to *reject closure* (and related principles like **E** and **BUP**).
- At the same time, this also allows Dretske to maintain that we *do* know *some* things.
- For instance, we know that it's *zebra* before us, since our evidence rules-out all *relevant* alternatives to *this* (think: normal zoo stuff).
- But, we *don't* know it's *not a cleverly painted horse*, since our evidence *doesn't* rule-out all relevant alternatives to *this* possibility. Dretske calls such (odd) possibilities "heavyweight".

Skepticism II
Knowing, Showing, and Order Confusions I

- When the skeptic asks "Do you *know p*?", this tends to shift the question of whether I *know p* (*Kp*) to whether I *know that* I know *p* (*KKp*).
- The skeptic wants me to *show* that I know *p* (*Kp*). *Showing* requires offering *premises in support of the claim* that I know *p* (*i.e.*, to *justify Kp*).
- I may not be able to do this — especially in light of the skeptical challenges the skeptic presents.
- Here's a salient quote from Stroud:
  - If somebody knows something, *p*, he must know the falsity of all those things incompatible with his knowing that *p* (or perhaps all those things he knows to be incompatible with his knowing that *p*).
- This presupposes (KK). Why accept *that*?

Skepticism II
Knowing, Showing, and Order Confusions II

- If we're not careful about these order issues, we might be persuaded by the following reasoning:

1. *S*'s total evidence in the bad case (*Eb*) supports *p to the same degree* (may be *inductive* support) as *S*'s total evidence in the good case (*Eg*) does.
2. If (1) is true, then *S* knows *p* in the good case *if and only if S* knows *p* in the bad case.
3. *S* does *not* know *p* in the bad case (since *p* is *false* in the bad case, and *Kp* entails *p*).
4. Therefore, *S* does *not* know *p* in the *good* case.

- The subtle problem with this argument is (1).
- The skeptical dialectics only seem to motivate:

(1*) *Eb* and *Eg* support ***Kp*** *to the same degree*.