- Two key principles regarding inferential knowledge.

  Closure (C). If S knows that P and S competently deduces Q from P (while maintaining her knowledge that P), then S (thereby) comes to know that Q (*via* deductive inference).

  Counter-Closure [8] (CC). If S competently deduces Q from her belief that P, (thereby) coming to know Q (*via* deductive inference), then S knew that P (and she maintained her knowledge of P throughout the inference).

- My main focus will be on (CC), but I'll return to (C) in the end. I'll also discuss the following *generalization* of (CC).

  Generalized Counter-Closure (GCC). If S infers Q from her belief that P, (thereby) coming to know Q (*via* said inference), then S knew that P (and she maintained her knowledge of P throughout the inference).

- Interestingly, the first (alleged) cases of "knowledge from falsehood" (KFF) were (alleged) counterexamples to (GCC).

- In the immediate wake of Gettier, Saunders & Champawat [11] presented (something similar to) the following case.

  Urn. An urn contains 2 balls of unknown (to Sam) color distribution (each ball is either red or blue). Sam samples one ball (with replacement) from the urn many, many times. He is a very reliable counter and observer (and Sam knows all of the above facts). Sam then reasons as follows: "(P) I have sampled a red ball from the urn exactly n times in a row. $\therefore$ (Q) Both of the balls in the urn are red."

- As it happens, the streak of red balls observed by Sam had length $n + 1$. So, P is false, but (intuitively) Sam knows Q.
- I will return to **Urn**, below. But, first, I will rehearse some of the recent literature on KFF. Here, I follow Luzzi's [8].
- Recently, there's been a flurry of papers on KFF (and KFNK) [6, 13, 7, 2, 9, 4, 1, 8, 10, 12]. I won't attempt a survey here. Rather, I'll focus on one recurring theme (and one worry).

- Here is a typical (putative) counterexample to (CC) [8].

  Handouts. Counting with some care the number of people present at my talk, I reason: "(P) There are 53 people at my talk; therefore (Q) 100 handout copies are sufficient.'

- As it happens, P is false. There are 52 people in attendance — I double counted one person who changed seats during the count. Nonetheless, I (intuitively) know that Q.
- The standard (initial) response to such examples is to posit the existence of an *alternative epistemicizer*, P', such that (a) S is disposed to believe P', (b) S is in a position to know P', and (c) P' would suffice to epistemicize S's belief that Q.

  (P') There are *approximately* 53 people at my talk.

- Unfortunately, this choice of P' will not always work. Luzzi [8] reports the following example due to Crispin Wright.[1]

[1] I had independently come up with similar examples in a seminar I taught at Berkeley in 2010 [5]. Luzzi & Wright scooped me on various things, in fact.

Marbles. As they swiftly roll by on the wooden track I have assembled for them, I count a series of marbles. The procedure yields 53 as a result. With some confidence, I come to believe that there are 53 marbles on the wooden track. Recalling that my logic professor told me earlier that day that precision entails approximation, I competently deduce that there are approximately 53 marbles (without any loss of confidence in my belief that there are 53).

- Despite my best efforts in the difficult task of counting the rapidly-rolling marbles, I double-counted one marble; there are actually only 52. So, P is false, but I know that Q.

☞ In this case, retreating to P' is not helpful, since $P' = Q$.

- At this point, there are various *alternative*, alternative epistemicizers that the defender of (CC) might try to appeal to. Specifically, consider the following two alternatives:

  (P'_α) My total evidence (E_P) regarding P.

  (P'_δ) E_P *and* if E_P, then Q.

- As Luzzi [8] points out, using P'_α as one's alternative epistemicizer has the consequence of turning a (seemingly) deductive inference into an ampliative (or inductive) one.
- We can try to restore the intuitively deductive nature of the inference in this case by using something like P'_δ instead.

☞ But, the availability of P'_δ is not limited to deductive cases.

- By combining Saunders & Champawat's **Urn** and Wright's **Marbles**, we can generate an inferential chain that results in a dilemma for the [GCC] alternative epistemicizer strategy.

> **Wright's Urn**. An urn contains 2 balls of unknown (to Wright) color distribution (each ball is either red or blue). Wright samples one ball (with replacement) from the urn many times. He is a very reliable counter and observer (and he knows all of this). He then reasons as follows: "(P) I have sampled a red ball from the urn *exactly* n times in a row. $\therefore$ (Q_1) I have sampled a red ball from the urn *approximately* n times in a row. $\therefore$ (Q_2) Both of the balls in the urn are red."

- As before, Wright seems to know (Q_2) in this case. But, his pair of inferences trace back to a false initial premise (P).
- As in **Marbles**, appealing to an *approximation* claim P' as our alternative epistemicizer for Q_1 will not work (since $P' = Q_1$). Using P'_δ would ensure that Q_1 is "deduced".

☞ But, then, what prevents us from epistemicizing Q_2 *via* P''_δ?

(P''_δ) E_P *and* if E_P, then Q_2.

- This would seem to turn Q_2 into *deductive* inferential knowledge. But, intuitively, this inference was *ampliative*.
- Consider the following two principles:
  - **Factivity**. If E is (an explanatorily essential) part of S's epistemic basis for her belief that Q, then E is true.
  - **Actuality** [1]. If S comes to believe that Q *via* competent deductive inference from her belief that P (while maintaining her belief that P), then P is (an explanatorily essential) part of S's epistemic basis for her belief that Q.

- **Factivity** + **Actuality** jointly entail the following principle:

  (†) If S comes to believe that Q *via* competent deductive inference from her belief that P (while maintaining her belief that P), then P is true.

- The (alleged) counterexamples to (CC) we've been discussing would seem to be *uncontroversial* counterexamples to (†).
- So, either **Factivity** or **Actuality** must go. Defenders of (CC) tend to reject **Actuality** — they drive a wedge between:

  (1) Why does S *believe* that Q?
  (2) Why does S *know* that Q?

- (1)'s *explanans* include S's inference from her belief that P, but (2)'s *explanans do* ***not*** (they incl. *another* epistemicizer P').

☞ This disunified explanatory strategy threatens *Closure*'s (epistemic) explanatoriness, since ampliative alternative epistemicizers P'_α are *almost always* available. In the end, I prefer the package {**Actuality**, (C)} to {**Factivity**, (C), (CC)}.

[1] A. Arnold, *Some Evidence is False*, *Australasian J. of Philosophy*, 2011.

[2] E.J. Coffman, *Warrant Without Truth?*, *Synthese*, 2008.

[3] J. Comesaña and M. McGrath, *Having False Reasons*, to appear in *Epistemic Norms*, OUP, 2015.

[4] B. Fitelson, *Strengthening the Case for Knowledge From Falsehood*, *Analysis*, 2010.

[5] _____, *Notes on Warfield's "Knowledge from Falsehood"*, `http://fitelson.org/seminar/notes_6.pdf`, 2010.

[6] Hilpinen, R, *Knowledge & Conditionals*, *Philosophical Perspectives*, 1988.

[7] P. Klein, *Useful False Beliefs*, In *Epistemology: New Essays*, 2008.

[8] F. Luzzi, *What Does Knowledge-Yielding Deduction Require of its Premises?*, *Episteme*, 2014.

[9] _____, *Counter-Closure*, *Australasian Journal of Philosophy*, 2010.

[10] M. Montminy, *Knowledge Despite Falsehood*, *Canadian Journal of Philosophy*, 2014.

[11] J.T. Saunders and N. Champawat, *Mr. Clark's Definition of 'Knowledge'*, *Analysis*, 1964.

[12] I. Schnee, *There is No Knowledge from Falsehood*, *Episteme*, 2014.

[13] T. Warfield, *Knowledge from Falsehood*, *Philosophical Perspectives*, 2005.