Joe Salerno, ed.
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According to the *Contingent Ignorance* (CI) principle, there are some true propositions that are not known by anyone. (Formally, $\exists p(p \wedge \neg Kp)$.) Since there are countless truths about grains of sand and stars in the sky that are presently and most likely forever unknown to us, there is good reason to accept CI. According to the *Knowability Principle* (KP), this actual ignorance is, however, a *merely* contingent affair, since it is possible that every true proposition be known by someone. (Formally, $\forall p(p \rightarrow \Diamond Kp)$.) Support for KP comes from different sources. For some, it is motivated by epistemic optimism about agents like us, or belief in supernatural omniscient beings. For others, KP is held to follow from a commitment to anti-realism, which requires truth to be dependent upon minds or languages in such a way that it can never exceed our epistemic capacities.

In 1963, Frederic Fitch, drawing upon a referee report by Alonzo Church, published a proof that KP is incompatible with CI. More formally, *Fitch's Result* (FR) is $\forall p(p \rightarrow \Diamond Kp) \mid\!- \forall p(p \rightarrow Kp)$. Since the devil is very much in the details, it will be helpful to review the proof of *FR* here. Its preliminary assumptions include the following: (i) Quantification over propositions and propositional variables is admissible. (ii) K is factive, so $Kp \mid\!- p$. (iii) K distributes over conjunction, so $K(p \wedge q) \mid\!- Kp \wedge Kq$. (iv) The axioms of S5 modal logic are true. (v) Classical logic, including double negation elimination, also holds. Granted these, the proof for *FR* runs as follows: Assume $K(p \wedge \neg Kp)$ is true. Given conjunction-distribution, $Kp \wedge K\neg Kp$ follows. Given factivity, we derive $Kp \wedge \neg Kp$. From this *reductio*, we deny the initial assumption; so, $\neg K(p \wedge \neg Kp)$. Within an S5 modal logic, we conclude $\Box \neg K(p \wedge \neg Kp)$ and, as a further consequence, $\neg \Diamond K(p \wedge \neg Kp)$. And, since $(p \wedge \neg Kp) \rightarrow \Diamond K(p \wedge \neg Kp)$ is an instance of KP, we are forced to deny the problematic conjunction, $(p \wedge \neg Kp)$. This denial then entails omniscience via $\forall p(p \rightarrow Kp)$. So, from all this, FR emerges as the startling consequence.

FR is an intriguing result, but what it shows and whether it is genuinely paradoxical are open questions. Some commentators view it as a decisive objection to various forms of anti-realism. Others take it to be a general puzzle about the erosion of intuitively distinct views at the intersection of modal and epistemic logic. Among anti-realists, some view it as genuinely paradoxical, while others take it as further evidence that anti-realists should deny (v) and opt for an intuitionistic logic. In *New Essays on the Knowability Paradox*, these and other responses are explored. Together, they provide an excellent overview of the philosophical terrain that surrounds this thoroughly modern paradox. For those working at the intersections of epistemology, modality, and metaphysics, there is no better introduction to this profitable issue. In what follows, I briefly survey the twenty-one essays it includes.

The first three essays constitute an editorial masterstroke. Salerno includes not only the original Fitch paper, but also Church's referee report—recently discovered through archival research—which contains the first proof of FR. Following them, Salerno's own contribution neatly summarizes the early history of the paradox. From there, the grouping of the essays largely falls in line with the most familiar responses to the paradox: intuitionist responses, paraconsistent responses, alternative logical responses, and restrictionist responses. The essays that follow these sections are, however, more diverse in scope, tackling broader questions about the paradox and investigating some of its more general implications.

According to the intuitionist response, the anti-realist is able to reconcile KP and CI by rejecting classical logic and, in particular, double negation elimination. (The proof above tacitly appeals to $\neg\neg p \mathbin{|-} p$ to derive the omniscience result.) Michael Dummett's contribution is an abbreviated reiteration of his preferred intuitionist response, while Stig Alstrup Rasmussen's paper explores whether the intuitionist's commitment to KP should be understood in classical or intuitionist terms. In addition, José Luis Bermudez focuses upon the indefinite extensibility—the "self-reproductive" character—of concepts like *set*, *natural number*, and, most notably, *proposition* in an effort to further motivate the intuitionistic response.

The next section of papers concerns the prospects for non-intuitionistic yet logically revisionary treatments of FR. Graham Priest argues that dialethic logics provide a natural treatment of the paradox as well as attractive solution to the related Paradox of the Knower. For J.C. Beall, the way forward is less clear. He canvasses a number of logically revisionary responses including the admission of truth-value gluts and gaps to accommodate KP.

The fourth section of papers are inquiries into the relation of FR to temporal logic, epistemic logic, and type theory. Johan van Benthem examines FR and its relation to cognate paradoxes within the backdrop of dynamic epistemic logic. John Burgess broaches FR by addressing a temporal analogue of it. Bernard Linsky, following Church's original suggestion, evaluates type-theoretic responses to the paradox alongside other type-theoretical proposals for other comparable paradoxes.

The fifth section of papers address perhaps the most familiar response to the paradox: the restriction of KP to "unproblematic" propositions. On such a view, the problematic conjunction *(p ∧ ¬Kp)* falls outside the scope of possibly known propositions and, therefore, no contradiction ensues. This approach, which Fitch himself seemed to prefer, finds its most notable defender in Neil Tennant, whose contribution aims at meeting recent objections to restrictionism. This paper is paired with Timothy Williamson's contribution, which supplements his earlier objections to Tennant's restrictionism. In addition, Jonathan Kvanvig's paper takes up the connection between restrictionism and theism in an effort to defend the status of FR as a genuine paradox for realists and anti-realists alike.

The final two sections of the volume set aside the challenge of undermining the paradox itself and turn to its often surprising consequences. Otávio Bueno surveys the implications of FR for leadings proposals in the philosophy of mathematics. He argues that both full-blooded platonism, according to which every consistent mathematical theory is true, and Hartry Field-style mathematical fictionalism both face significant FR-related difficulties. Berit Brogaard examines an apparently orthogonal puzzle that arises for certain modal fictionalists, namely those who aim to analyze modality in terms of the fiction of modal realism. Brogaard points out that the puzzle in question takes the form of a knowability-style paradox, and suggests that restrictionism is the most satisfactory patch.

In the subsequent section, W.D. Hart's charmingly concise piece offers a brief but sweeping argument that purports to show not only that type-theoretic responses to Fitch's Paradox fail, but, much more strongly, that type-theory is "self-destroying". C.S. Jenkins surveys recent discussions of FR and attempts to isolate the feature of FR that explains its apparently paradoxical character. For the most part, her conclusions are deflationary: FR is not genuinely paradoxical. Its intrigue is largely a function of our surprise that Fitch-style conjunctions like *(p ∧ ¬Kp)* are perfectly acceptable propositions yet wholly unknowable. Michael Hand's paper focuses upon certain distinctions between pragmatic and semantic understandings of the anti-realist's epistemic views of truth. He argues that a pragmatic analogue of KP is shown to fail within classical languages, and that, once properly understood, this mitigates the anti-realist's putative problems. Christoph Kelp and Duncan Pritchard's contribution comes to the aide of anti-realists. In it, they survey two proposals for responding to FR. The first involves abandoning the factivity of knowledge and adopting intuitionistic logic; the second involves recasting the anti-realist thesis of knowability in favour of a principle that holds all propositions to be possibly justifiably believed. In the final paper, Greg Restall defends an interesting result for proponents of KP: Although FR engenders paradox, a suitably weakened modal logic can sustained a Conjunctive Knowability Principle, according to which, for any truth, there is a collection of truths such that each is knowable and their conjunction is logically equivalent to the initial truth in question.

As this volume makes plain, the paradox and its putative solutions repay close study. But, for some of us, the starting point, KP, is not likely to seem particularly attractive. In light of this, closer scrutiny of independent arguments against KP would be a welcome step in assessing the full import of the Knowability Paradox.

Sam Cowling
University of Massachusetts, Amherst.