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Being in a Position to Know*

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> [B]eing in a position to know and nevertheless shunning knowledge creates direct responsibility for the consequences …
> —Albert Speer

1. Introduction

The concept of being in a position to know is an increasingly popular member of the epistemologist's toolkit. Some have used it as a basis for an account of propositional justification.[1] Others, following Timothy Williamson,[2] have used it as a vehicle for articulating interesting luminosity and anti-luminosity theses. It is tempting to think that while knowledge itself does not obey any closure principles, being in a position to know does. For example, if one knows both p and $p \rightarrow q$, but one dies or gets distracted before being able to perform a *modus ponens* on these items of knowledge and for that reason one does not know q, one is still plausibly in a position to know q. It is also tempting to suppose that, while one does not know all logical truths, one is nevertheless in a position to know every logical truth. Putting these temptations together, we get the view that being in a position to know has a normal modal logic. A recent literature has begun to investigate whether it is a good idea to give in to these twin temptations—in particular the first one.[3] That literature assumes very naturally that one is in a position to know everything one knows and that one is not in a position to know things that one cannot know. It has succeeded in showing that, given the modest closure condition that knowledge is closed under conjunction elimination (or 'distributes over conjunction'),

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[1] See especially Rosenkrantz (2016b, 2018).

[2] See Williamson (2000: §4.2) and (e.g.) Smithies (2019: Ch. 7). As far as we can tell, the notion of being in position to know came to be widely used in the literature due to the influence of Williamson's discussion of luminosity. However, the notion—or at least the construction 'x is in a position to know that p'—also occurs in ordinary speech and writing. See our epigraph and §4.

[3] See Heylen (2016) and Rosenkrantz (2016a, 2016b, 2018: 317-8).

being a position to know cannot satisfy the so-called K axiom (closure of being in a position to know under *modus ponens*) of normal modal logics. In this paper, we explore the question of the normality of the logic of being in a position to know in a more far-reaching and systematic way. Assuming that being in a position to know entails the possibility of knowing and that knowing entails being in a position to know, we can demonstrate radical failures of normality without assuming any closure principles at all for knowledge. (However, as we will indicate, we get further problems if we assume that knowledge is closed under conjunction introduction.) Moreover, the failure of normality cannot be laid at the door of the K axiom for knowledge, since the standard principle GEN of modal generalization (or 'necessitation') also fails for being in a position to know. After laying out and explaining our results, we briefly survey the coherent options that remain.

2. Our main results

Our investigation of the logic of being in a position to know will be conducted using a language of propositionally quantified modal logic. The language has an infinite stock of atomic sentences, an infinite stock of propositional variables, the standard truth-functional connectives, $\forall p$ for each propositional variable p, K^P ('one is in a position to know that'), K ('one knows that'), $\Box$ ('necessarily'), @ ('actually'), and the usual formation rules and metalinguistic abbreviations (thus $\Diamond\phi$ is $\neg\Box\neg\phi$ and $\exists p\phi$ is $\neg\forall p\neg\phi$). We will assume the smallest logic that is closed under *modus ponens*, uniform substitution, and the rule

UG: If $\vdash \phi$, then $\vdash \forall p\phi$,

and that includes the following axioms (where the final two are standard axioms for the logic of actuality[4]).

UI: $\forall p\phi \rightarrow \phi[^{\psi}/_{p}]$, where p is free for ψ in ϕ.

T_K: $K\phi \rightarrow \phi$

$K^P/_\Diamond$: $K^P\phi \rightarrow \Diamond K\phi$

$K/_{K}{}^{P}$: $K\phi \rightarrow K^P\phi$

$T_\Box$: $\Box\phi \rightarrow \phi$

$K_\Box$: $\Box(\phi \rightarrow \psi) \rightarrow (\Box\phi \rightarrow \Box\psi)$

$GEN_\Box$: $\Box\phi$, where ϕ is any classical consequence of the above axioms.

$T_@$: $@\phi \rightarrow \phi$,

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[4] See Crossley and Humberstone (1977).

$RIG_{@}$: $\phi \to \Box @\phi$

We will call this logic 'L', and will also write '$\vdash \phi$' for '$\phi \in L$'.[5]

Here are the further candidate axioms and rules that will be discussed below.

K_K^P: $K^P(\phi \to \psi) \to (K^P\phi \to K^P\psi)$

GEN_K^P: If $\vdash \phi$, then $\vdash K^P\phi$.

$DIST_K$: $K(\phi \land \psi) \to (K\phi \land K\psi)$

We will call the logic that results from adding any axioms or rules $X_1, \ldots, X_n$ to L '$L + X_1 + \ldots + X_n$'. Thus, for example, $L + K_K^P + GEN_K^P$ is L supplemented by a normal logic for K^P.

Our main results are the following, where $K^\wedge\phi$ abbreviates $\exists pK(p \land \phi)$.

(1) $K^P\phi \leftrightarrow K^\wedge\phi \in L + K_K^P + GEN_K^P$.

(2) The $K^\wedge$-sublogic of $L + K_K^P + GEN_K^P$ is normal.

(3) $K^P\phi \leftrightarrow K\phi \in L + K_K^P + GEN_K^P + DIST_K$.

(4) The K-sublogic of $L + K_K^P + GEN_K^P + DIST_K$ is normal.

(5) $L + GEN_K^P$ is closed under $GEN_K^\wedge$.

(6) $L + GEN_K^P + DIST_K$ is closed under GEN_K.

(7) $K^P(\phi \to \psi) \to (K^P\phi \to \Diamond K\psi) \in L + K_K^P$.

3. Remarks on our main results

The sentence

α: $\forall p(p \leftrightarrow @p)$

will play a starring role in our discussion. α has two interesting features. First, α is a logical truth. Second, the truth α expresses is extremely modally fragile: if things had been different in any way, it would have been false. After all, α says that everything is as it actually is, and if things had been different in any way, things would not have been

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[5] Here is a further natural axiom:

T_K^P: $K^P\phi \to \phi$ (Being in a position to know is factive.)

While the assumption of the factivity of knowledge plays a role in some of our informal explanations of the significance of this section's results, it is not needed for the derivation of those results.

as they actually are. Owing to this fragility, one only gets one shot, so to speak, at knowing α.[6],[7] If one doesn't know α, then it is impossible for one to know that α, since if one doesn't know α, then, if one had known α, things would have been different than they actually are and α would have been false. Thus, if one doesn't know α, then one could not have known α. Ditto for the conjunction of α with anything else: if one doesn't know $\alpha \wedge \phi$, then one cannot know $\alpha \wedge \phi$.

Let us turn to result (1). Suppose that the logic of being in a position to know is normal, so that one is in a position to know all logical truths (GEN_K^P),[8] and being in a position to know is closed under *modus ponens* (K_K^P). Let ϕ be anything one is in a position to know. Since α is a logical truth, so is $\phi \rightarrow (\alpha \wedge \phi)$. By GEN_K^P, then, it follows that one is in a position to know $\phi \rightarrow (\alpha \wedge \phi)$, and by K_K^P, that one is in a position to know $\alpha \wedge \phi$. Since one is in a position to know something only if it is possible for one to know it, it is possible for one to know $\alpha \wedge \phi$. But, as we just saw in the previous paragraph, it is possible for one to know $\alpha \wedge \phi$ only if one actually knows $\alpha \wedge \phi$, and so only if one actually knows the conjunction of ϕ with something. It follows that if one is in a position to know ϕ, then one knows the conjunction of ϕ with something. Let us say that one *conjunctively knows* ϕ if and only if one knows the conjunction of ϕ with something (formally: $\exists p K(p \wedge \phi)$). What we have just seen is that, if the logic of being in a position to know is normal, then if one is in a position to know something, one conjunctively knows it. We can also use normality to establish that one is in a position to know anything one conjunctively knows. If one knows $\alpha \wedge \phi$, one is in a position to know $\alpha \wedge \phi$. Since $(\alpha \wedge \phi) \rightarrow \phi$ is a logical truth, one is in a position to know it (by the GEN_K^P part of normality). Then one is in a position to know ϕ (by the K_K^P part of normality). Assuming normality for being in a position to know we have now established both directions of the biconditional: one is in a position to know something if and only if one conjunctively knows it. This is result (1).

An immediate consequence of (1) is (2): if the logic of being in a position to know is normal, then the logic of conjunctive knowledge is normal.

What happens if the logic of being in a position to know is normal and knowledge distributes over conjunction, in the sense that one who knows a conjunction knows each conjunct? The result is a calamity. By (1) it already follows that one is in a position to know something if and only if one conjunctively knows it. If knowledge furthermore distributes over conjunction, then one knows everything one conjunctively

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[6] When we say that one knows ϕ, where ϕ is a sentence, we mean that one knows the proposition expressed by ϕ—that is, we mean what is formalized by $K\phi$. The sentence α, of course, would have expressed a truth as long as it had its actual character (in the sense of Kaplan 1989), but it would not have expressed the same truth as it actually does.

[7] One should read our 'only gets one shot' in a modal rather than temporal way: in the temporal sense, one has a shot for all of eternity at knowing α, but if one never knows α, then it is impossible for one to (ever) know α.

[8] By a 'logical truth' we mean simply any theorem of the logic characterized by the axioms and rules under consideration; the notion is syntactic, not semantic. For semantic notions of 'logical truth', the idea that one is in a position to know every logical truth has little *prima facie* plausibility, since there is no guarantee that the set of 'logical truths', in some semantic sense, is axiomatizable. Much of the appeal of the idea that one is in a position to know all logical truths, we take it, comes from the idea that one could in principle prove any of them in a finite number of steps.

knows, and it follows that one is in a position to know something if and only if one knows it. This is result (3).

(4) states an obvious corollary: if the logic of being in a position to know is normal and knowledge distributes over conjunction, then the logic of knowledge is normal.

Let us next see what we can show about the individual components of a normal modal logic for being in a position to know, GEN_K^P and K_K^P, beginning with the former.

Suppose, as GEN_K^P states, that one is in a position to know every logical truth. Let λ be an arbitrary logical truth. It follows that $\alpha \wedge \lambda$ is a logical truth, and so that one is in a position to know $\alpha \wedge \lambda$, and so that it is possible for one to know $\alpha \wedge \lambda$. But, once again, it is only possible for one to know $\alpha \wedge \lambda$ if one actually knows $\alpha \wedge \lambda$, and so actually conjunctively knows λ. It follows that, if one is in a position to know every logical truth, then one conjunctively knows every logical truth. This is what we learn from (5).

(6) states the obvious corollary: if one is in a position to know every logical truth and knowledge distributes over conjunction, then one knows every logical truth.

Let us finally turn to the assumption that being in a position to know is closed under *modus ponens* (K_K^P). That is, if one is in a position to know the premises of a *modus ponens*, then one is in a position to know its conclusion. (7) amounts to the observation that this entails that, if one is in a position to know the premises of a *modus ponens*, then—because being in a position to know entails the possibility of knowing—it is possible for one to know its conclusion. Formally: K_K^P entails

(!?) $\quad K^P(\phi \to \psi) \to (K^P\phi \to \Diamond K\psi)$.

The example of α serves as a useful reminder of how problematic (!?) is. Replacing ψ with $\alpha \wedge \phi$ in (!?), we get:

(!??) $\quad K^P(\phi \to (\alpha \wedge \phi)) \to (K^P\phi \to \Diamond K(\alpha \wedge \phi))$.

There are two main ways to generate counterexamples to (!??). First, insofar as we are willing to countenance any unknown logical truths at all, we should accept that there are cases in which one is in a position to know $\phi \to (\alpha \wedge \phi)$ as well as ϕ but one does not know either $\phi \to (\alpha \wedge \phi)$ or $\alpha \wedge \phi$. The details can be filled in in a variety of plausible ways. Perhaps ϕ is some humdrum truth (such as 'John and Juhani had lunch at Scott's Seafood Restaurant in Mayfair on December 7th, 2019') that one knows, and therefore is in a position to know, but, although one is in a position to know $\phi \to (\alpha \wedge \phi)$, one has never considered the issue, and for that reason one knows neither $\phi \to (\alpha \wedge \phi)$ nor $\alpha \wedge \phi$. Second, and perhaps even more decisively, consider someone who knows, and so is in a position to know, the logical truth $\phi \to (\alpha \wedge \phi)$ but is merely in a position to know ϕ, knowing neither ϕ nor $\alpha \wedge \phi$. Both kinds of case are counterexamples to (!??): by (!??), if one is in a position to know both ϕ and $\phi \to (\alpha \wedge \phi)$, it is possible for one to know $\alpha \wedge \phi$, which in turn entails that one does know $\alpha \wedge \phi$.[9]

[9] The formal result that underwrites these remarks is this:

$$K^P(\phi \to (\alpha \wedge \phi)) \to (K^P\phi \to K(\alpha \wedge \phi)) \in L + K_K^P.$$

4. Alternatives

We have seen that the principles that knowledge entails being in a position to know ($K\phi \rightarrow K^P\phi$) and that being in a position to know entails possibly knowing ($K^P\phi \rightarrow \Diamond K\phi$) produce disastrous results when combined with either component of a normal logic for being in a position to know along with a minimal logic of necessity and actuality. We see two main lines of retreat.

First, while it is natural enough to think that being a position to know entails the possibility of knowing, perhaps that is a mistake. Here is one natural way to develop this thought: Perhaps talk of what one is in a position to know tracks what a somewhat idealized version of the subject knows even though the idealized version of the subject is metaphysically impossible.[10] This way of thinking may have some precedent in natural and social science. The idealization of frictionless surfaces may have an explanatory point even if frictionless surfaces are metaphysically impossible. And perhaps the idealization to market economies that are free of certain 'noise' has a point even if such economies are metaphysically impossible. Similarly, for example, someone who does not know a logical truth containing α may have an idealized version of him or herself that does know that logical truth even though there is no metaphysically possible version of that person who knows every logical truth. Drop the assumption that being in a position to know entails the possibility of knowing, and our results are blocked. The reader should not underestimate the difficulties here however. Even if an idealized version of one knows ϕ, one may in fact know that one does not know ϕ. Assuming that one is a position to know what one in fact knows, it is hard to see how what one is in a position to know corresponds to what an idealized version of one does know, since an idealized version of one does not lack the knowledge one knows oneself to lack. The appeal to idealization thus arguably requires the additional radical step of rejecting the entailment from knowing to being in a position to know—but that would produce a notion so alien to the literature as to be prone to do more harm than good.

Here is a second and perhaps more promising option: we accept that being in a position to know entails the possibility of knowing and learn to live with an extremely

[10] Another way to develop the thought is to go for something along the following lines: Being in a position to know that *p* does not entail possibly knowing that *p* but rather possibly knowing some proposition suitably similar to the proposition that *p*. But this strategy seems even less promising. It is very much out of step with how the concept of being in a position to know is used it the literature, and we have no good idea of how to develop this thought in a systematic and satisfying way.

Yet another strategy borrows an idea from the literature on Fitch's paradox: being in a position to know ϕ entails possibly knowing $@\phi$ (see Edgington 1985 and Schlesinger 1985: 103-6). Our concerns about this idea very much mirror Williamson's concerns about the Edgington/Schlesinger proposal (see Williamson 2000: 292-5). One concern is that, on a fine-grained conception of propositions it is extremely difficult to know $@\phi$ in a counterfactual situation, because, while @ is a convenient guise for singling out the actual world in the actual world, there is no convenient guise for singling out the actual world in counterfactual situations. Of course, on a coarse-grained conception of propositions (according to which necessarily equivalent propositions are identical) this problem doesn't arise, but then $@\phi$, if true, will be identical to every necessary truth (there being only one), and the new principle would be a terrible surrogate for the old one, since it will only tell us that being in a position to know a fact requires knowing some necessary truth.

weak logic for being in a position to know. Both components of normality will have to be relinquished, although for all we have said some restricted version of GEN_K^P may be acceptable—such as that one is in a position to know all truth-functional tautologies, in which case it is equivalent to the axiom schema:

$K^P\phi$, for all tautologies ϕ.

Here it's worth noting that the restriction of GEN_K^P that may seem *prima facie* most attractive is not available at all: namely, GEN_K^P restricted to *necessary* logical truths. The problem is that the notion of a necessary logical truth is not a formal notion. For example,

G1: Gold is an element ↔ @(gold is an element)

is a necessary logical truth, while

G2: Gold is a commodity ↔ @(gold is a commodity)

is a contingent logical truth. The imagined restriction would have to be able to discriminate between G1 and G2, but a restriction to a rule of inference or an axiom schema can only discriminate by syntax, and there is no syntactic difference between G1 and G2. A restriction to GEN_K^P that avoids the problems we have surveyed will inevitably be a blunt instrument that excludes many instances of unrestricted GEN_K^P that those who were initially sympathetic towards the idea of a normal logic for being in a position to know would likely regard as unproblematic.

A further concern that applies to both the first and second options is this: it's far from clear that one can just pick out some relation in which agents stand to propositions by stipulating that 'is in a position to know that' obeys or does not obey some structural principle that can be articulated in a formal language like the one used in this paper, and thereby make 'is in a position to know that'—even as it is used in specialized technical contexts—express that relation. We would like to remind the reader that that construction is part of ordinary English, as illustrated by quotation from Albert Speer's *Inside the Third Reich* that is the epigraph to this paper. It is not an idiom: 'in a position to' combines with any non-auxiliary verb to form a meaningful predicate 'is in a position to V'. It seems to us unlikely that 'in a position to' has some meaning different from its ordinary meaning when a philosopher combines it with 'know', and, if it doesn't, then conjectures about it that correspond to, for example, restrictions on GEN_K^P or $K^P\phi \rightarrow \Diamond K\phi$ seem especially risky. Perhaps, in line with certain recent metaphilosophical trends, one might think that it is nevertheless possible for a philosopher to 'engineer' a 'concept' for which his or her favorite restrictions on GEN_K^P or $K^P\phi \rightarrow \Diamond K\phi$ are guaranteed to hold, but we are skeptical. We suspect that philosophers who wish to depart from ordinary English are more likely to succeed if they do it the old-fashioned way: introduce a new theoretical term 'is-in-a-position-to-know-that' by pointing to some paradigms, write down a logic for it, and hope that in doing so you have captured a meaning that obeys that logic and introduced a term that can do some useful theoretical work.

We have no decisive objection to the second option, whether taken in the spirit of theorizing with an ordinary English construction or of introducing a new theoretical term. However, anyone who chooses that option it must be extremely careful when reasoning with ‘in a position to know’, as it is all too easy to take normality for granted without noticing.

Appendix: Proofs of the main results

We begin with

(3) $K^P\phi \leftrightarrow K\phi \in L + K_K{}^P + GEN_K{}^P + DIST_K$.

Proof. Below is an abbreviated derivation of $K^P\phi \leftrightarrow K\phi$ in $L + K_K{}^P + GEN_K{}^P + DIST_K$, where ‘**K**’ (boldface) indicates provability in the weakest normal modal logic for $\Box$, with $GEN_\Box$ restricted as in L.

1.	$\phi \to \Box @\phi$	$RIG_@$
2.	$\phi \to \Box(\forall p(p \leftrightarrow @p) \to (\phi \leftrightarrow @\phi))$	UI, $GEN_\Box$
3.	$\phi \to \Box((\phi \leftrightarrow @\phi) \leftrightarrow \phi)$	1, **K**
4.	$\phi \to \Box(\forall p(p \leftrightarrow @p) \to \chi)$	2, 3, **K**
5.	$\phi \to \Box(\alpha \to \phi)$	4 abbreviated
6.	$\phi \to \Box((\alpha \wedge \phi) \to \phi)$	5, **K**
7.	$\neg K(\alpha \wedge \phi) \to \Box((\alpha \wedge \phi) \to \neg K(\alpha \wedge \phi))$	6 unabbreviated
8.	$\Box(K(\alpha \wedge \phi) \to (\alpha \wedge \phi))$	T_K, $GEN_\Box$
9.	$\neg K(\alpha \wedge \phi) \to \Box(K(\alpha \wedge \phi) \to ((\alpha \wedge \phi) \wedge \neg(\alpha \wedge \phi))$	8, 7, **K**
10.	$\neg K(\alpha \wedge \phi) \to \neg\Diamond K(\alpha \wedge \phi)$	9, **K**
11.	$\Diamond K(\alpha \wedge \phi) \to K(\alpha \wedge \phi)$	10
12.	$\Diamond K(\alpha \wedge \phi) \to K\phi$	11, $DIST_K$
13.	$\psi \leftrightarrow @\psi$	$T_\Box$, $T_@$, $RIG_@$
14.	$\forall p(p \leftrightarrow @p)$	13, UG
15.	$K^P(\phi \to (\alpha \wedge \phi))$	14, $GEN_K{}^P$
16.	$K^P\phi \to K^P(\phi \to (\alpha \wedge \phi))$	15
17.	$K^P\phi \to K^P(\alpha \wedge \phi)$	16, $K_K{}^P$
18.	$K^P\phi \to \Diamond K(\alpha \wedge \phi)$	11, 17, $K^P/_\Diamond$
19.	$K^P\phi \to K\phi$	12, 18
20.	$K^P\phi \leftrightarrow K\phi$	19, $K/_K{}^P$

(1) $K^P\phi \leftrightarrow K\hat{}\phi \in L + K_K{}^P + GEN_K{}^P$.

Proof. Replace line 12 in the above with $K(\alpha \wedge \phi) \to \exists p K(p \wedge \phi)$ (which is equivalent to an instance of UI), and proceed in the obvious way.

(2) The K^-sublogic of $L + K_K{}^P + GEN_K{}^P$ is normal.

Proof. Immediate from (1).

(4) The K-sublogic of $L + K_K^P + GEN_K^P + DIST_K$ is normal.

Proof. Immediate from (3).

(5) $L + GEN_K^P$ is closed under $GEN_K^{\wedge}$.

Proof. Let $\phi \in L + GEN_K^P$ and replace line 12 in the proof of (3) with $K(\alpha \wedge \phi) \rightarrow \exists p K(p \wedge \phi)$ to get $\exists p K(p \wedge \phi)$.

(6) $L + GEN_K^P + DIST_K$ is closed under GEN_K.

Proof. Immediate from the proof of (5).

(7) $K^P(\phi \rightarrow \psi) \rightarrow (K^P\phi \rightarrow \Diamond K\psi) \in L + K_K^P$.

Proof. Immediate from axiom $K^P/_\Diamond$.

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