Keynesian Logical and Probabilistic Notation

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Keynes uses notation for logical and probabilistic expressions that will be foreign to most modern readers. The following table contains some expressions from Keynes's text, along with our modern equivalent:

Keynesian Notation	Modern Meaning and Notation
$\phi(x)$, $f(x)$	Open monadic predicate-logical atoms. We'll use Fx, Gx, *etc.*, instead.
$\phi(a_1)$, $f(a_2)$	Closed monadic predicate-logical atoms. We'll use Fa, Gb, *etc.*, instead.
$g(\phi, f)$	Simple monadic universal claim. We'll use $(\forall x)(Fx \supset Gx)$, *etc.*, instead.
$g(\phi_1\phi_2, f)$	Universal claim with conjunctive antecedent. $(\forall x)[(F_1x \,\&\, F_2x) \supset Gx]$.
$g(\phi, f_1f_2)$	Universal claim with conjunctive consequent. $(\forall x)[Fx \supset (G_1x \,\&\, G_2x)]$.
$\underset{a_1,\ldots,a_n}{\mathrm{A}}(\phi)$	Conjunction of n closed monadic atoms. We'll use $Fa_1 \,\&\, \cdots \,\&\, Fa_n$, instead.
$\underset{a_1,\ldots,a_n}{\overline{\mathrm{A}}}(\phi)$	Assertion that, among n objects, at least one of them has F and at least one of them lacks F. We will use: $(Fa_1 \vee \cdots \vee Fa_n) \,\&\, (\sim Fa_1 \vee \cdots \vee \sim Fa_n)$.
$p.q$ (or pq)	Conjunction of two sentences p and q. We'll use $p \,\&\, q$, instead.
$\overline{p}$	Negation of a sentence p. We'll use $\sim p$, instead.
p/qr	$\Pr(p \mid q \,\&\, r)$, where p, q, and r are closed sentences.

For next week, the technical part of our discussion will focus on what Keynes says about the contribution of various sorts of instantial evidence to the "*a priori*" probability of a universal generalization. In his notation, we'll be focusing on probabilities like: $g(\phi, f)/\phi(a).f(a)$, $g(\phi, f)/\overline{\phi(a)}.f(a)$, and $g(\phi, f)/\overline{\phi(a)}.\overline{f(a)}$. Of course, $g(\phi, f)/\phi(a).\overline{f(a)} = 0$, since $\phi(a).\overline{f(a)}$ *entails* $\overline{g(\phi, f)}$. In our notation, these probabilities are:

$$\Pr[(\forall x)(Fx \supset Gx) \mid Fa \,\&\, Ga]$$
$$\Pr[(\forall x)(Fx \supset Gx) \mid \sim Fa \,\&\, Ga]$$
$$\Pr[(\forall x)(Fx \supset Gx) \mid \sim Fa \,\&\, \sim Ga]$$

Keynes is interested, mainly, in probabilistic *relevance*. As such, he's interested in *comparing* the sorts of conditional probabilities, above, with their unconditional values (or values conditional on some "*a priori*" corpus $K_\top$). This anticipates much of the subsequent literature on confirmation theory.

Before we get into the technical material in the Keynes readings, I will say a few things about (1) Keynes's remarks on the history of induction (chapter 23), (2) Keynes's discussion of "causes" (Notes on Part III, pages 275–277), and (3) Keynes's response to Humean-style "circularity" charges (chapter 22, esp. pages 259–260).