

The Foundational Status of Qualitative Research: A Philosophical Approach

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Aristotle's seminal account of the distinction of quality and quantity treats them as complementary. It privileges qualities in defining knowledge of species and of kinds or types, quantity in individuating specimens or tokens of material types. In privileging the qualitative nature of those types, and our concepts of them, as intentional, psychological terms and states, it implies that some of the most important terms and relations necessary for describing the referents and meanings or senses of concepts, cannot be explicated in quantitative terms alone. For example, the meaning and truth of "A trusts B with \$5000," cannot be directly assessed in quantitative terms, and only imperfectly even in terms of qualitative universals. Only the number of self-avowed instances of such states, can be counted, by being given a stipulated definition, e.g. how many people say they believe B is trustworthy regarding Z. But even Aristotelians can underplay psychological indeterminacy and uniqueness. Intimate relations of the sort Buber calls "I-Thou" relations are particularly elusive. Neo-Aristotelians should not only hold qualitative research to be in some ways foundational with respect to quantitative, not vice versa, but from Existentialism learn to prize uniqueness more highly.

Field of Research: Business System, Business Law and Business Ethics:
Business Research Process and Research methods

1. Introduction

Some people have a generalised presumptive preference for quantitative research over qualitative on the ground that the former is more rigorous, scientific, and objective. Editorial boards of some journals in Psychology and Sociology tend to reject reports of qualitative research.ⁱ Research results they say must be replicable and generalisable, not anecdotal. Observable and measurable results mean physical and quantifiable results. Only what is measured can be managed.

On the other hand, some claim that at least in social sciences, laws about human beliefs, attitudes, and behaviour are harder to come by than self-avowal-based data, and quantitative approaches must be tested against individual cases, involving persons; and the qualities and relations between individuals. Persons in this context are "that for the sake of which" all quantitative studies are ultimately undertaken. The late Roderick Chisholm, a world-renowned Western philosopher, took the view that only qualitative properties, in a technical sense of his own, are true of thinking subjectsⁱⁱ.

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Quantitative accounts are indeed sometimes not very illuminating in social science, except as surveys of stated beliefs and attitudes, grounding probable predictions of preferences. Some protagonists of quantification are plausibly accused of trying to dress up conceptual truisms as empirical discoveries in Psychology or Sociology; or on the other hand, of just stipulating meanings for the variables in their psychological and sociological or economic “laws” on the one hand, and ignoring criteria for the corresponding ordinary concepts.ⁱⁱⁱ On the other hand, we do need verifiable quantitative data and interpretation and information for sound personal, economic, and social policy making.

Though complementary, there is a sense in which the qualitative/quantitative approaches are indeed in tension. The meanings or senses of concepts, especially those of indeterminate properties, of entities in stories, and of psychological phenomena, do not always easily lend themselves to quantitative description. Where both methods are relevant, they are complementary. But quantitative concepts cannot themselves be quantified. Some research areas need understanding, not measurement, and personal uniqueness and relations can elude quantitative determination. In that sense qualitative study and research takes precedence over quantitative research. Substantial psychological, philosophical and theological assumptions underpin this claim. They partly explain the overt claims of researchers for decisions on the procedural matter of using quantitative or qualitative research methods.

To begin the argument for this, some initial intuitions about the meaning of quantitative and qualitative research follow. They are potentially distinguishable as respectively focused on or seeking:

- how many items exist or have a property or have it when another property is present, versus what its existence, meaning or social significance in a context is for persons;
- nomological/explanatory, generalised universal laws, categorical or probabilistic (statistical), about whole populations, as opposed to anecdotes describing specific or particular, context-bound cases;
- studies of relations between entities with determinate magnitude, versus those with indeterminate ones;
- study of relations appropriate to extensional properties and contexts versus intentional ones;
- methods focussed on truth (denotation) and reference as opposed to sense and meaning (sense/connotation), or the self-interpretation of persons.

The suggested distinctions above cut across each other. Something can be indeterminate in its meaning (intension or connotation) yet subject to true universal generalization. Or it can have an intensive magnitude (be subject to degree) yet be the subject of natural science explanations; be a wholly extensional, true proposition, but when embedded in an intentional context, like “believes that” or “wishes that”, the resulting complex proposition is false. Already in these intuitive first passes at a definition of qualitative and quantitative, we have mention of the following five concepts: intension,

(meaning); intensive magnitude (degree), intention (of persons), intentionality (directedness on an object of psychological states) and intentional contexts (reference opaqueness, described below). Only intensive degree involves reference to quantity.

Quantitative method at least potentially involves the measuring of objects and relations and search for and use of recursive functions describing objective truth, those with definite, decidable values, while qualitative descriptions and research methods only study these relations contingently, ex post, to code and analyse qualitative data about beliefs, perhaps using software. An initial topic-based way of discriminating the two methods, which although incomplete, is a plausible start is: quantitative methods are those suitable to the theoretical study of observable natural, or of induced experimental events involving objects of natural sciences including brain events and/or mass social behavioural preference trends; qualitative methods are suitable to the study of individual or group practical reasoning, involving intentionality, by voluntary agents in social contexts (i.e. by persons with intentions and beliefs).

Residual confusion resulting from the above cross-cutting distinctions can be explained partly by their Aristotelian ancestry. Aristotle moves between natural science and philosophical anthropology, ethics and politics; meaning and metaphysics; theory and practice. Aristotle sketched the first systematic ontology –the theory of being, or of what exists; the first logic; biology; physics; metaphysics; psychology; ethics; politics; and theory of meaning (sense) and truth (reference). He builds the last theory around what we mean when we say of a person, e.g. Socrates, which he exists, is man, is wise, sad, snub-nosed, was friend to Plato, had a mother, etc. Because it was foundational, and I basically endorse it, I will now sketch Aristotle’s account of being, meaning and truth very summarily under eight heads. It lays down the keel of the universalist mainstream “complementary” view of quantity and quality, as I will dub it. It is basically a sound one, if modified to favour qualitative approaches to some phenomena. I will argue later that Aristotelians can and should co-opt some insights of their historical critics, especially existentialists. Aristotle had a seminal view on the following eight topics:

2. What sort of thing exists

For Aristotle, what exists is a set of independent, unitary, “primary” substances or various kinds, each with a characteristic set of capacities, or nature, and their causal conditions. If anything is an existent, we humans, such as the historic individual Socrates, are existents, although for Aristotle we are not the only or highest beings. Individual human beings are however taken to be paradigmatic, exemplary existing prime substances, along with living things like animals and plants, and the highest being, the Unmoved Mover, or as theists would now say, God. Their acts bring about change. The elements making up material things also exist, as their material causes^{iv} (see Ross 1926; Owens 1961 and below point 5). Aristotle believes we can ask of an entity: of what sort is it-its form; what is it made of –its matter; where is it from – its efficient cause; and its end or purpose-finality. The form-matter distinction is now associated with the term “hylomorphism”.

3. Predication in categories: kinds of predicables

According to Aristotle, the things we say of any prime existent can be grouped into *categories*. The attributes which are predicable of a subject are of 8 types:

1. Substance “- is a human”.
2. Quality “is snub-nosed”, “wise”, “hoping for rain”.
3. Quantity “is 5ft 5 inches high, 70 kilos”.
4. Relation “is husband of Xanthippe”.
5. Time “on Monday in March in 350 B.C.”
6. Place “in Athens”
7. Action “is running”, “thinking about rain”.
8. Passion “is carried to bed” “succumbs to hemlock”.

As point 1 indicated, the historical Socrates is an individual prime substance. His humanity is both real (as instanced in him individually) and exists as an abstract concept of a duplicable “secondary substance”.^{iv} Quantity and quality, 2 and 3, exist in either abstract and concrete forms or senses, in different orders of consideration. The abstract properties of the type are jointly attributed, in cases of successful reference, to the concrete individual instance or token of the type, in which token the properties are concretely instantiated. Within categories 2-8 the same distinction of abstract secondary type and primary particular instance or token can be made. Note that in this ontology, quantities and qualities are different aspects of one entity. Most of these categories are distinguished even today and appear with slight alteration in Aquinas, Kant, and Searle as the Appendices show.

4. Categories, accidents, and circumstances

Substances, primary and secondary, have essential and accidental properties; the first they cannot lose and continue be the entity they are e.g. in the human case some capacity for rational consciousness; the second can be shed without loss of identity, e.g. in the human case, a particular finger or facial expression. Substances “stand” metaphorically “surrounded” by circumstances (Latin: circum-stare), elicited by the questions Who/To whom? What/of what quality/sort? Where? When? Why? and How?/How many?/How much?” These questions map loosely on to the categories listed in point 2 above, e.g. Who/To whom? maps on to substance/action and passion; when? maps on to time; where? to place; how? on to action/passion and relation; how many and how much? to quantity; and what? broadly maps on to quality and substance.

The ideas of substance and accident, subject and circumstance can be extended to acts. In the case of acts, circumstances, like accidents of substances as subjects, importantly determine their good/bad and ethical status e.g. the ‘what’ tells us the tendency of the act–type to further human wellbeing; the “why” (motive question) with regard to actions as subjects is taken to arise from our wish for wellbeing. A rule may help to determine what action-type, in a type of circumstance, is morally good or bad. “Killing a

person” (what is done) is the nuclear act embedded in murder, which is deliberate, (how) and done to an innocent person (to whom). Where, as often, there is no rule to hand, circumstances are considered by a person deciding on an action in a new particular case, using this method, later called casuistry. (See Geach 1978; Haldane 2004;Owens 1961)

5. Knowledge is ideally of the theoretic, demonstrable truth.

Theoretical knowledge is of the universal and essential, or its demonstrable syllogistic implications, ideally encapsulated in definitions. Aristotle accepts the idea that truth corresponds to, or is ideally about, what exists. It attaches to “propositions”, not single objects. In propositions, properties are attributed to individuals or classes. The Stoics develop the “propositional calculus” from Aristotle’s syllogistic. Propositions are ideally determinate, single or general, positive or negative, and knowledge is belief backed by a rational account/evidence. Determinacy means, roughly, decidability in terms of truth conditions. Aristotle recognises “simple apprehension” of a concept or individual thing, but takes over Plato’s idea that demonstrative knowledge concerns judgements of the form: that S is P and is attained when definition can be given of the relevant universal notions, and so universal laws can be stated and applied truly. Eventually formal definition of the essence may be given.

6. Analogy of attribution

“Health(y)” refers to a state of the body primarily and secondarily to medicine, exercise, urine, complexions, and diets. The latter are not literally healthy but healthy analogously, qua causes, capacities for, symptoms, signs or effects of health. So too “being” for Aristotle is attributed analogically. In 1 above being is understood to range over many kinds of being, on a supposed *scala naturae*. (Aristotle rejects the Platonic idea of a univocal Form of Being, exemplified in or participated by all contingent beings.) The chain of being runs from God to the elements via incorporeal substances, humans, animals, and plants, minerals, etc. As an analogical term it is attributed to and refers primarily to the highest beings, God and rational entities, and analogically to these other entities. The theory of analogy of attribution means that ‘being’ is predicable in all the categories. All entities in categories mentioned in section 2 and 3 above exist in some sense. (Metaphysics 1003a, 32-1003b24; Nicomachan Ethics 1096a,10-30).

7. Intentional existence and mental existence

As point 1 above suggested, the primary referent of “exists” is an existent substance like Socrates, with a nature or essence, “human”, defined by its characteristic qualities/properties-rational animal. But the concepts of types of thing and instances, “Socrates” and “man”, can have intentional or mental existence in the minds of the human personal substances who are the users of these concepts.

Intentional states are directed at, of or about some thing, property or relation in the real non-mental world in various ways-assertion, command, question etc. by reference to mental entities. For example, knowledge is of an object or proposition, true only if it “fits” the real world when asserted i.e in the case: “Socrates is a man” if Socrates is a man; fear is fear of a perceived danger and believe is belief in some truth. In Appendix III, Searle’s update on this idea is presented.

Besides our DNA and physical idiosyncrasies, our idiosyncratic constellation of psychological and intentional states-beliefs, memories, and desires, habits, and our cultural, contextual histories also play a part in our personal identity.^v

8. Assumed background practices and practical applications of reason

In Aristotle all existing prime substances and even theoretical law-like assertion about them have a background context of assumed natural order. In any set of circumstances, there are assumed background conditions of normality, explicit or implicit. In science, there is some ideal of natural order not requiring explanation. Some of Aristotle’s tacit and explicit assumptions were in key ways different from Newton’s and Einstein’s (e.g. regarding natural motion) but many are the same e.g. we assume our chairs will not turn into butter. Even natural sciences seeking specific laws of the form All Fs are G or If F then G or Fs tend to G have the implicit *ceteris paribus* clauses like “under normal conditions” “unless interferences in the range R occur”. In the social sciences, which study practical reasoning applications, the laws are much more easily “defeasible”, because reasoning is informal. The travel agent’s prudent plan for our trip can depend on the published schedule and scientific fact but be upset by changes in our desire or in the weather. The use of the method of casuistry applied to circumstances in point 3 above is required.

9. Formal and Final causes as architectonic in one respect, (finality) and mutually dependent in another

Aristotle often asks of an entity: what is the form (type, kind, sort) and the end of this sort of entity? What is it for? If E is “that for the sake of which” M exists, then E is architectonic in respect of M- its organising principle. For example, organic parts are “for” the relevant whole’s form, or E will depend on M in some respect, yet govern it as ultimate end. Horse riding governs bride making, but depends on it; architecture governs bricklaying, conversation governs speech acts but depends on them. Grammar is for the sake of sense making and speech, but conversations depend on it. In states and organisations, subordinate roles and incumbents are for the sake of the work to be done by the whole, but indispensable to it. Architectonic relations (point 8) link the highest goods and ethics; ethics and politics; politics and organisations. We eat to live, know, and love, but eat we must.

Where does all this leave the quantity/qualitative distinction, and associated research methods? In Aristotle, both have their place, but qualities signify forms, and when complex, define substances, which paradigmatically are embodied forms and final ends, and/or have ends. Qualities are seen as more central in several ways. As point 2-5 above suggest, quantities, outside of abstract mathematics, are most often potential or actual *quantities of some real substance, describable by a quality or relational property*. Things which really exist in the world, including individualized properties, like quantities of qualities, are the reference or denotation of the substantival terms (count nouns) standing for “secondary substances” with qualities, such as “gold”. These are the ultimate references of the meanings of the predicables in the categories. Their essences can be defined, and laws linking them create knowledge.

Intentional existence of these same phenomena, and the content of belief and desire involving them, is recognised as being different from their physical existence and extensional assertions about them. Concepts, definition, propositions, and universals on the one hand and denotation, reference, and truth on the other are implicitly distinguished within a correspondence theory of truth. Concept-meanings precede definitions of essences, which refine and define them, but are not themselves quantifiable entities.

For example, gold has both physical existence, and also intentional existence, as the idea of “gold”, and persons have intentional qualitative properties, like beliefs, in another sense. Two individualised qualitative and relational properties in Socrates’ life, which appear in his biography, are the fact that he was Plato’s teacher and friend, because in fact “being the teacher/friend of Plato” is historically true of Socrates. Loosely quantifiable qualities like snub-nosed-ness, or other face shapes, finger prints, height, blood cells, and what we now know to be DNA, all help to individuate persons, like Socrates’ snub nose; but not to the exclusion of intentional psychological ones (point 6). The identification and description depends most heavily on the latter, against background contexts of assumed normality and finality/mutual dependency (point 8). This broad picture has survived pretty well to the present, but has been shaken in several ways, which partly lead to the claim that quantitative methods are useless, or at the other extreme should displace qualitative in a number of ways which I will explain.

The first set of countervailing views can be loosely characterised as mystical theological fundamentalism and monism; supernatural individualism, and theological voluntarism; the second set as metaphysical scepticism, behaviourism and materialistic monism. The first set of views downplay the place of quantitative study. They ridiculed quantitative physical explanations (Zeno) or treated them as about transient appearances; or they emphasised the total individual transcendence of individuals; or they downgraded science to opinionating about contingencies subject to the changeable will of God (Al Gazzali). The second set –anti-metaphysics, behaviourism and materialism, are an overreaction to the excesses of the first. I cover the 2500 years of intervening history of this at speed, by putting the detail in these Appendices.

I rely on Searle's expansion of Aristotle to include speech acts and speaker meaning (See Appendix III) to reject both these extremes but place those arguments in Appendices I-II.

I will first say what in the above account of Aristotle seems correct and then raise a problem in the account. The things I endorse are:

1. Human understanding from a phenomenological viewpoint is still not experienced or successfully described as a physical process or as having physical qualities with observable and measurable quanta. We do not observe and quantify thoughts and reasons as we do the colour or temperature of tea. The number of degrees on a thermometer can be observed, but not the numbers signified.
2. As Searle well shows, in a successful cognitive act, say a true spoken assertion, there is a systematic relation between a. a well formed piece of language, meeting various criteria of meaningfulness; b. it is uttered about the state of the world; c. the speaker imposes or invokes some standard conditions of fit or satisfaction for the utterance, while d. being in some intentional or attitudinal state which settles the onus of match. Neither the terms in this relation, nor the relation itself are physical.(Searle 1984; 1992; 1997;2001)
3. The act takes place at many levels-sound emission, phonemes, grammar and syntax, semantics, the state of the world, the pragmatic goals in the context and these form a hierarchy in which the lower levels are for the sake of the higher and As phonetics alone cannot explain sense or reference, physicalism cannot reductively explain psychology. The higher entities rule the lower, yet depend on them.(Polanyi 1968)
4. Some things which are imaginable (seem conceivable) are not conceivable. Breaking the rules at any of these levels is pragmatically self-defeating. For example, one cannot both say that S is P and Not (S is P) at the same time, and hope to be understood. Having said S is P one cannot not have said it, or unsay it. (Weinberg, 1964)

It appears that materialist monists believe that mind will be explained away as an epiphenomenon of matter, the brain and nervous system. They hold that explanations in terms of physical quantities alone will survive the successful imminent completion of the materialist theory of mind. This may explain a preference for quantitative research methods on principle. There is considerable ambiguity about the term physical quality. Paint is physical (an extended, inherent property of an object and measurable) in a way the raw feel or sense datum of its colour is not. But if mind and psychological phenomena were like colour in being a modality of paint, that would be a model that would sustain a robust materialism. Psychological entities would be physiological/bio-chemical and quantitatively comprehensible.

I claim that the four points above strongly undermine reductive materialism of the mind, and therewith the presumed absolute universal superiority of quantitative method point. I disagree with Aristotle on these points:

1. He seems to say that the law of excluded middle – either P or Not P is a universal truth. But there can be more than one reading of the connective (or); and the two truth values true and false are not exhaustive. He may have meant that all predications in propositions *should be* determinate, true or false. But vague, fictional, or humorous attributions, even some mathematical ones, can be left indeterminate (assigned no truth value). Some terms are quantitatively indeterminate, some usages humorous, metaphorical, fictional, or there is not an experimental, physical or observable decision procedure for establishing if P is true. Psychological properties of persons are often quantitatively indeterminate. This poses problems for physicalist reductionism.
2. Individual persons are not merely accidental aggregates of properties, describable as instances of the type human. They are absolutely idiosyncratic unique, unified, self–interpreting and self–changing agents, of unconditional value.

To see why these two points are relevant let me recap where we have been. I have been suggesting that in the mainstream account, typified by major philosophies of Aristotle, Aquinas, Frege and Searle (and for the most part Kant and Hegel, see Appendices) there is no serious disconnection of quantitative and qualitative method or reduction of quality to quantity. Quality is however accorded a decided edge, and special domains, through appeal to the meaning /denotation distinction; the whole phenomenon of intentionality, and the role of the background as Searle calls it. (See also “tacit knowing” in Polanyi (Polanyi 1968).

The problems arising for science and quantification from mystical monism descended from Parmenides and Plotinus, and from extreme theological voluntarism regarding divine omnipotence are of a different order and can partly be handled in the ways suggested by Aquinas. (See Appendices I -II.) But there is still an unsolved problem raised by the existentialist counter traditions for the mainstream. For both non-theists and many theists there is a problem of personal identity or individuality, going back to Aristotle’s notion of essential substance and scientific demonstration, but aggravated by Neo-Platonic theology especially the Judeo-Christian-Islamic creation ex nihilo variants. It is at the heart of Scotus, and later Kierkegaard’s Existentialism. As the existentialist-theist Buber puts it, the world is twofold for man: we live in two worlds at once, the I–It and I-Thou. The differences are suggested in the chart below:

I-IT	I-THOU
Individual seen as accidentally unique instance of cluster of recurrent "universal" or type/properties.	Individual seen as unique individual with own essence and/or needs.
Impersonal/objective e.g. people submit to being "used" in a role or follow a rule.	Personal/subjective: here people are "ends in themselves".
Functional/task oriented/structuralist.	Expressive/emotive/people oriented/dramatic.
Public orientation: domain of justice/ fairness.	Intimate/private/home/family/kinship/ domain of <i>agape</i> .
Rational/recursive functions/definite descriptions appropriate.	A-rational/informal/discursive evocations appropriate.
Instrumental/manipulative.	For their own sake/playful.
Conditional commitment/contractual/ "tit for tat".	Unconditional (absolute) commitment/ fidelity/generosity.
One-many e.g. one bus driver serves many passengers.	One-to-one e.g. personal friendship or many as one (culture).
<i>Quid pro quo</i> /arms-length.	Loving/giving even to the unlovely.
Temporary/fleeting/speed is a virtue.	Life-long relationship possible/slow is beautiful.
Routine/normal/predictable.	Unique/creative/unpredictable.
Disinterested/even-handed.	Naturally perfective of the other/needs of the other focal.
Clarity and definiteness considered to be possible and valuable; good structure essential.	Indefinite/infinite/indeterminate; symbols/stories/myths needed.
Based on realistic assessment of object/prudent (political).	Creative expectation of value in the object/trusting-hopeful.
Law as descriptive of the nature of things; (ETIC) e.g. technology.	Law as custom/culture; (EMIC).
Open to Experimental Testing (Hypothetico-Deductive): Critical	Intuitive/Contemplative.
Open to financial transaction.	Not for sale.
Quantitative/material.	Qualitative/concentration on form.
Temporal; acceptance of plurality.	Transcendent/"e-ternal"; focus on ultimate unity of being, good and truth.
Explicit.	Implicit/ineffable.
Object replacement/interchangeable.	Irreplaceable.
No need to be centered or ecstatic.	"Centered", "connected" or "ecstatic".

Table1:I-It and I-Thou Relations

If Buber is right this chart suggests that there may indeed be a sense in which existentialism has a decisive point against the mainstream universalist tradition. Quantification belongs with studies of phenomena on the left side of the ledger i.e. with the study of objective I –IT relations, but is less helpful for the more important and final or ultimate, subjective I-Thou relationships. Perhaps quantitative research has the left side of the chart as its proper domain, and the left hand domain is indispensably necessary for the welfare of the right hand domain, but the latter is its final end. (Recall Aristotle on architectonic relations, point 8).

On this account, quantitative method cannot and should not be relied on to research the more important matters on the right. There are realities (e.g. God, the Soul) and relations (justice, love etc) which go beyond the compass of quantity (and quantification) as a category. On this view qualitative research comes out as preferable in finality terms, yet dependent on quantitative research in the way Aristotle's point 8 above suggested. The two are still complementary, but qualitative method has greater scope and an edge. It

allows for freedom to adopt the *caritas* ideal of Augustine's City of God. If Buber is accepted, qualitative analysis will emerge as the most important.

Turning back to the Materialist Theory of Mind, why does Skinner and the preference for qualitative reduction have such lasting influence, and why do his contemporary counterparts in cognitive science and artificial intelligence, continue to enjoy such influence? I believe the answer to be that a great many philosophers and scientists are today still positivists, strong materialists, and theological sceptics or agnostics with regard to the mind-body debate. They are still unresponsive to European phenomenology, denying the agent self, and holding on to the identity thesis in some stronger determinist form than Taylor or Searle. The qualitative/quantitative research method debate is a proxy for a philosophical one about material theories of mind.

10. Conclusion

As a Neo-Aristotelian, with a nod to Kierkegaard and Buber, and following a "hylomorphic" approach as in Aristotelian points 1, 5 and 6, I reject eliminative or reductive analysis of soul to body, form to matter, mental to physical or vice versa. The above "quantitative only" position is rejected, and certain forms of hard determinism and atheism. The Materialist Theory of Mind is now be thought by some to permit reducing quality to quantity. This idea is rejected by Searle and Taylor (1964), Chisholm (1991) and analytic Thomists like Geach (1978) and Haldane (2004); and before them by Aristotle, Hegel, Husserl (1970), Austin (1958).^v Unless you are a theological voluntarist, or mystic of a sceptical hue on the one hand, or, on the other hand a materialist with a hard determinist psychology, and so prepared to consign our current mainstream and allied moral and legal accounts of the responsible self to the flames, there is a strong case for primacy of the qualitative. This is despite the need for the quantitative in most things, especially the study of I-It Relations. Conceptual, "intensional" and intentional issues are not quantitatively determinable, even for quantitative concepts, and some psychological concepts and relations are unquantifiable.

The main theoretical reasons given for favouring purely quantitative approaches in the social sciences, where in fact they least apply, or for totally rejecting them, are based on some (usually undisclosed) contentious philosophical claims of the behaviourist and materialist theories of mind on the one hand, or voluntarist fundamentalist theology at the other extreme. Neither theological realism nor non-reductive philosophical anthropology in the Aristotelian tradition need accept either extreme, but Aristotelians have something to learn from existentialism.

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Appendix I: Classical, Medieval, and Modern Counters to Aristotle.

Challenges from theological immaterialism

In the Pre-Socratic pre-Aristotelian era and late Middle Ages, three developments contradict Aristotle's picture: 1. the Pre-Socratic idea that all beings are essentially one (or the result of the acts of "the One"), and pluralism gives rise to knowledge but the One is beyond being and knowledge; 2. the medieval expansion of the idea of God's omnipotence to the point where it threatens human knowledge altogether. 3. the existentialist claim that there is a threat to human individuality if persons are only intelligible as accidental clusters of instantiated properties. These problems are discussed and explicated further in Appendix I and II below but the problems can be put shortly as follows:

- If the origin of all beings and especially the highest goods is known to be immaterial, but as such known to be ineffable, all contingent beings are ultimately unknowable and natural science ultimately fallible or of secondary importance.
- If an omnipotent creative God makes the law of non-contradiction and logic to be true, and to apply to the understanding of our cosmos, He can transcend or contradict it. Perhaps he can deceive humans with impunity, create other worlds, and change the natural and moral laws of this one too.
- If knowledge is of the essence of a thing, defined in universal terms, are individual persons, as idiosyncratic entities either merely accidental aggregates of instantiated properties, buffeted by chance, or unknowable?

Before Aristotle there were Greek sceptics about science, knowledge and truth, the latter delighting in paradoxes about motion, like Cratylus and Zeno, and many irresolvable without Aristotle's notion of potentiality/capacity. They were often self-styled mystics. Radical doubt was aired about the capacity of either quantitative or qualitative scientific generalization to capture our intuitions about ourselves, or about "higher powers," beginning with Parmenides' mystical monism. It received a boost from the Christian era in early Christian Neo-Platonic writing from 200-800 A. D. In Plotinus' writing, taken over and developed by St. Augustine, (5th century), a sharp distinction re-emerges from Plato, between a univocal sense of contingent being, and the mystical, monistic, idea of transcendent, ineffable, immaterial, necessary Being—the One, participated by other contingent entities. This is the doctrine Aristotle rejected at 4 and 5 in the 8 point summary of Aristotle in the text above.

Augustine, following Plato, further thinks that human persons, qua simple immaterial substances, using their bodies, with immortal immaterial minds or souls, and capable of grasping ideas of infinity, and eternal abstract necessary universal truths of geometry, are not temporal but eternal beings also, images of God. They can conceive and imagine infinite kinds of states of

affairs, and are destined for individual judgment after death. We live now in the City of Man, which requires state-monopolised violence. But we are destined for the City of God, and can get there through God-given grace to forgive and practice *caritas* (charity). This then gets pushed further with the suggestion of “Negative Theologians” like Pseudo-Dionysius and Eruigena that God is to be exalted as an entity “Beyond Being” and beyond descriptive knowledge. God, as cause of causes of all types, and of there being any types, does not exist (as a mere specimen of a type), or have (merely discursive) knowledge. Thus paradoxically, in this sense, God does not exist and knows nothing! Creative, transcendent, necessary being becomes almost a separate category from other beings. Being outside time space and matter, qua their cause, the God, or the One, is immaterial, removed from quantitative categorisation- God is “that than which a greater cannot be conceived”(Anselm in the 11th century).

Divine omnipotence

God’s geo-creative power is extended by some theologians reflecting on the story of Job to being able to possibly create any non-contradictory world, and as this creative transcendent God becomes more omnipotent. Human individual power, reason and autonomy, which had spurred the enquiry, diminishes after Scotus. Ockham’s followers like Nicholas of Autrecourt challenge the adequacy of the Aristotelian ideal of demonstrative knowledge as only of the essential and universal, and of law-like universal propositions about essential beings, (point 4 above) for explaining both creation ex nihilo and individuation. A long sceptical period followed, initiated by Ockham’s logic-driven theological voluntarism, (God qua omnipotent could change all physical and moral laws tomorrow and still be a good God, bounded only by the law of non-contradiction).

The Muslim writer Al Ghazzali had earlier written *The Destruction of Philosophy*, with a similar sceptical tenor regarding secular science, in the service of faith. He says that the existence of any natural object can be denied without contradiction, notably the entities posited in axioms of physics. They are not necessary beings. One can deny the axioms of science without self-contradiction, and ask: why is there any such thing? Why is there anything at all? But the underpinning “maxim of admissibility” which was:“ Whatever is imaginable is possible,” had strange and even dire implications for divine omnipotence. Perhaps time is anisotropic and could go backwards? Peter Damiani had asserted that God could make a raped woman to be a virgin, the past not to have been. As they interpret them, the stories of Abraham and Isaac and of Job seemed to voluntarists to show a God “arationally” going beyond our humanist Aristotelian ideas of right and wrong.

Individual idiosyncrasy

After Thomas Aquinas, (13th century) who we will describe presently, medieval Christian philosophers, like Scotus, while affirming a transcendent God, start to worry about whether, given the Aristotelian account of demonstrative knowledge as being of the universal, we humans are just accidental

complexes of individualised properties. Are we mere instances of the human essence, denoted by the count noun “human,” rather than unique, idiosyncratic, unified wholes, of absolute value in God’s order? Are humans to be graded aristocratically? What about divinely required, and if requested given, *caritas*? Scotus says we are autonomous souls, directly created by God with our own “thisness” (*haecceitas*) and one of a kind “special species” (*species specialissima*). He is followed later by Christians like Kierkegaard, Dostoevski, G.M. Hopkins (inscape), and Marcel, and Jewish philosophers like Buber (I-and Thou). Even when God is not featured, the worry persists, as in Nietzsche, Sartre, C.S. Pierce, and others influenced by them. In the human case, once you have seen one you have most emphatically NOT seen the lot! And for the theists mentioned, God creates law rather falling under it or being explained by it. Explanation ends with the will of a personal necessary being, God, explaining law, not a law or set of laws purportedly explaining God.

(b) Replies of the Aristotelian tradition

The replies by Aristotelians, like Aquinas, were briefly as follows: they are set out in Appendix II. Aquinas, (13th century), as a fellow Christian, but as an Aristotelian, must incorporate some of his transcendental talk about God as creator, supreme necessary being, and our immaterial souls. As a creationist, he builds on analogy of attribution, which we noted in the text under point 5. As a creationist, he adds that God is Good qua cause of the goodness we know. He adds to persons a cosmic yet individual human *actus essendi* or act of being which he thinks reflects the contingency of all finite being on God as creative, transcendent, necessary Being: the One, Good, True, Beautiful, Simple Being. The particular *actus essendi* bestowed on each person’s soul, and the infinity of some intellectual acts, allows for the uniqueness and potential immortality of the individual soul at least after the Resurrection of the Body, and the capacity to see God. Thus the doctrine of *actus essendi* is offered as a way of recognising “being” as the gift of a transcendent God-being, the perfect exemplar, and as part of a possible solution to the problem of human individuation and survival of death (Gilson, Kretzmann). Aristotle’s analogy of attribution allows talk about God as necessary cause of Being and Good. Revelation discloses the need for grace to live the divine ideal of *caritas*-including love of enemies, the wicked and strangers. His replies to the omnipotence and individuation challenges are explained further in Appendix I and II, this enquiry unfolded over 1500 years, and was temporarily halted with Descartes in the 1640s. The whole story began again 100 years on with Hume, and Kant’s attempted reply (See Appendix II).

In reply to theological voluntarism Realists held that to be worthy of worship, our idea of God’s “nature” and goodness must be consistent with that of a good human being, not just any omnipotent doer. God cannot just do anything and remain the same worship-worthy entity. Most theological realists sought refuge either in the idea of God’s de re inability coherently and consistently to retract his own ordained de facto providence, given his inferred de dicto description as a good and wise creating person, derived from analogy of

attribution arguments. Thomists e.g. held that God is Himself both perfect exemplar of Good, creator of a good world, and the ordainer of human moral providence. Human existence is, however imperfect, as such, good for humans.

Another realist tactic was to claim an infallible “intuitive cognition of the individual as individual”, (ICII) whereby an individual could be known as such, existing as a particular, with *de re* necessity. ICII was contrasted with a fallible abstract intuition of the particular (ACI). Even God could not pervert the former with a deceptive look-alike or simulacrum. This sort of hyperbolic doubt (Could God appear to you and order you to do wrong without you realizing it?) which the ICII/ACI distinction was meant to quell, was shut off for a while by Descartes’ *cogito ergo sum*. But not to Hume’s satisfaction.

Creational theists of transcendent being and predication do have a problem posed by their need to find a coherent means to acknowledge yet restrict the power of transcendent creators *ex nihilo*. Having *carte blanche* to create, some of them, like Gazzali think they can arguably extend omnipotence to have God ordain imaginable quantity / quality and otherwise causally ordered “possible worlds,” some of which (e.g. anisotropic ones) seem so bizarre as to overwhelm the categories of human reason which restrain the mainstream thinkers. In some of such possible worlds, quality, cause, quantity, time, and the rest of the categories, can all collapse. The mainstream rightly rejects the maxim of admissibility above. Realists hold that we can be proved mistaken about the intelligibility and conceivability of the imaginable. For centuries people tried to and imagined tri-secting the angle with ruler and compass alone till it was proved impossible. Gregory of Rimini had said that Anselm could not move from the idea of God as perfect to God’s existence without proof that the idea of God was free from contradiction. The realist basically agrees, and argues that the idea of God as that of the cause of the world is not self-contradictory. If we can somehow show he must have freely created it, then He has in fact created Nature. He need not have, and can destroy it. But He cannot now, having created it, not have created it. As creator, including of our nature, He wills we can know nature’s forms though science, and through consistent use of reason, and we can imperfectly attain our good /wellbeing. Therefore, though infinite, God can be known by attribution of analogy of attribution to be Good as our cause, and seems be well disposed to us. C.S. Pierce later suggests that the “law” of contradiction is not inexorable, and is not a law that could bind God’s intellect. But he suggested that the principle is the foundation of “the ethics of the intellect”. So an ethically good personal being must abide by it, even God.

Appendix II: From Hume and Kant to Materialism

The arguments of Al Ghazzali against philosophy, using the principle of admissibility: (what is imaginable is possible), was unknowingly recycled by Hume, this time in the service not of faith, but of theological and indeed total metaphysical agnosticism. It had for Hume self-confessedly puzzling psychological implications about continuous self-identity also. (“I dine, I play

backgammon etc but in the study" ...) The self becomes a bundle of perceptions, which can pop in and out of existence.

Space dictates not covering the next 300 years of philosophy in which attempts were made to address these issues, beginning with Descartes. The replaying of answers to these challenges in the modern era, and responses to them, from Kant to Sartre, is covered in Appendix III. Briefly summarising it, Hume recycles Gazzali's maxim of admissibility to doubt knowledge of God and the self's existence. Kant to respond takes the science of appearances to be knowledge, and cognition of the noumenon or really real to be the object of faith.

In his attempted reply to Hume's scepticism, now in the service of disbelief, Kant's in making his "Copernican turn" notoriously begins his epistemology by ceding to natural science the knowledge of appearances, or 'phenomena'. Knowledge of ultimate reality, noumena, is reserved for belief or faith. Kant "answers" Hume by appeal to the reality of freedom and reason itself, in saying all science is limited to appearances, structured by perception and the categories. His list of categories is as follows:

Quantity-judgements of the universal/particular/singular judgement; unity, plurality, totality; of extensive magnitudes.

Quality-judgements which are affirmative, negative, infinite judgement; reality, negation, limitation; of intensive magnitudes.

Relation-categorical, hypothetical and disjunctive judgements; substance and accident;

Causality-and-dependence: community and interaction.

Modality-problematic, assertoric, apodictic judgements; possibility/impossibility; existence/non-existence, necessity-contingency.(

Source: F.Copleston History of Philosophy

Note the recurrence of Aristotle's language with subtle shifts in sense. In one sense a judgement of quality for Kant now means something closer to attributing a property susceptible to degree or having intensive magnitude; so as in Aristotle, we still have no real incompatibility or clash being posed between quality and quantity. Likert scales are presumably qualitative tools on this account. In the assertion; "this cat is on the green mat," the assertoric modality is expressed; quantity is expressed by "this" and "the"; and the quality by "green". The noumena such as God are beyond both qualitative and quantitative analysis and knowledge.

Space and time (where or when) are not categories as in Aristotle but built into our perception /sensory apparatus. But the individuation problem raised by Scotus is not successfully addressed by Kant. Hume's "bundle of impressions" self, is now to be thought of according to Kant **as if** it were one. This simply makes the problem worse. The problem of describing transcendent being is still there, and indeed sharper than in Aristotle. Sceptics

follow Hume in questioning Kant's certainty with regard to the nature of the transcendent continuous rational Self. Now, qua noumenon, it is an allegedly unknown object of faith. Even in ethics, personal particularity (captured by answering the question about the circumstance Who?) is treated by Kant as unimportant in the categorical imperative: "Do as you could will others in like circumstances should do," there is to be no special pleading of any particular personal idiosyncratic features or unique circumstances which cannot be universally generalised. Consequently ethical particularism, and casuistry is discarded

Hegel: Universalism as Rational Realism

Reacting to Kant's bad bargain with Hume, Hegel goes back to a more realistic, Aristotelian, common sense view and rejects the bargain according to which knowledge and natural science deals with appearances, and belief in the sense of faith, deals with noumena. Hegel sees science as a practice revealing God's will in nature. If I experience an object as a permanent possibility of sensations which remains stable under specific conditions which can be spelled out, and if we do not also reduce those conditions to subjective impressions, then what more do I need to know? Scepticism cannot even be stated coherently without use of common language. There is no need to posit any unknowable noumenon. The real is the rational. This preserves the ideal of access to the noumenon. God is like the Mind of the world. "Geist" is becoming manifest through the dialectical movement of history and science and human communal accomplishments, like common laws and the State. *Ars longa, via brevis*. Science, and Community are immortal, individuals come and go. In the nineteenth century, the main stream of post-Hegelians become interested in the idea of the Self, the collective a-temporal self, and especially the will, and in language, abstract meanings and truths; their communal and cultural origins; and in the theory/praxis dialectic. Herder, Meinong, and Brentano all contribute to this quest for a science of language. Husserl with Brentano founds phenomenology on the need to accept the data of consciousness and intentionality as an *explanandum*, properly restoring the Aristotelian idea of intentional existence. Hegel reconnects knowledge and the real, but his solution of making God immanent in our self-consciousness triggers the existentialist Kierkegaard's sceptical individualist response; and Marx damns the idea that the real is the rational. By the late nineteenth century, the always fragile Hegelian consensus was also being challenged by British empiricism, even though embraced by Bradley and T.H. Green.

Two opposite reactions to Rational Social Orders: Existentialism and Marxism

Hegel correctly predicted he would be attacked in two opposite ways. His rationalism and communalism does not do enough to challenge Aristotelian or Kantian Universalism and the neglect of individuality as merely the accidental conglomeration of attributes. This upsets the existentialist Kierkegaard who asserts that the individual is the only category! For him, faith is indeed necessary for true knowledge of the noumenon, including our own individual selves' transcendent relation to our own bodies. In deep self-knowledge and self-giving alone will we find God. Dostoevsky's character in *Notes from*

Underground also makes a parallel neurotic individual protest against Hegel's Rational Social Order, and Dostoevsi winds up a qualified defender of the Russian Orthodox Church which at least takes individual responsibility for personal freedom and takes salvation seriously. One of his characters says: "If God is dead, everything is permitted". Nietzsche, always the loner, affirms creative individuality but denounces both Hegel's 'common morality' and even more vehemently Kierkegaard's extolling of self-surrender as 'slave morality'.

The other, and in some ways opposite strand of reaction to rational universalism, stemming from Rousseau's humanism, and predicted by Hegel, is based on more secular moral and social justice grounds. Feuerbach's *Essence of Christianity* suggests we worship the best in ourselves in worshipping God as an ideal of reason. Marx denies the existence God as of the object of this ideal. He holds that the real is for most people irrational and immiserating, a misery masked by capitalists using the opiate of religion. He wants us to "Make the real rational" and bring Feuerbach's God down to earth. The abolition of alienating private ownership and control of community means of production must be effected.

Modern Materialism

Sartre combines the two protests in the Marxist-existentialism of *Critique of Dialectic Reason*. So we have existentialist and Marxist attacks fused. Bertrand Russell, in caricaturing the excesses of idealism, does not fairly represent Hegel. Hume's psychology and epistemology have been widely rejected, and A. J. Ayer's verificationist principle has long been shown to be unverifiable itself on its own terms. Heidegger, Wittgenstein and the pragmatists see Science as an important but limited human practice, not a fount of eternal truth. The realist European tradition of Hegel, Husserl and Frege is being revitalised through the work of Austin, Chisholm, Searle, McIntyre, Taylor and others, questioning A.J. Ayer's positivism and verificationism, and some of the "hard determinist" and other kinds of "mind-body identity" stories on offer. Without necessarily adopting dualism (as Chisholm does), the Anglo-EU dialogue has resumed. Frege's systematic contribution to assimilating philosophy to mathematics and logic; and his theory of meaning and reference incorporating the work of Husserl and Brentano has been featured by J. L. Austin, Dreyfus, Geach, and Searle.

For the anti-Hegelian, Marxist, and Marxist-existentialism counter-tradition, the use of descriptions of "reality," even those of science, are always going to be cultural: class-driven, ideological, and persuasive. Reliance on both the qualitative categories and technical quantitative tools of rationality alone, for study of actual social arrangements, will be deeply suspect. Measuring value through monetary quantification and complex universal generalisations/equations about the market's "action" admirably suit the capitalist economics. But it all is part of the "fetishism of commodities," masking and legitimating an inequitable, deeply repugnant and qualitatively alienating, ethically irrational social order.

Even if this is partly true, the alleged problems may not be with scientific method but its abuse. The further problem for Marx and Sartre is that although their questions about economic inequality are good ones, their answers are not. Dialectical Materialism's central predictions have proved at least partly false. Many 20th Century philosophers, under the influence of Hume's associationalist psychology, Russel's scientific empiricism and A.J. Ayer's logical positivism, (the meaning of a proposition is its method of verification) rejected Aristotle, Kant's and Hegel's metaphysics and theology, if not metaphysics as such. They dismissed the transcendental God, the transcendent self, and free choice. The individuation problem is allegedly solved by DNA. The positing of an agent intellect in a judging soul and/or a transcendental self, which applies the categories, are jettisoned. This opens the way for the Materialist theory of Mind, of Armstrong and Dennett, that minds just are brains, and brains are organics computers emitting "behaviours". All being is univocally and essentially physical, and quality is reducible to quantity. Humans are organic machines. If everything is material, explicable in terms of physical events, can everything be quantified? If so, all qualitative description and act descriptions involving a rational choosing self, can be replaced albeit with great tedium, with quantitative descriptions about behavioural dispositions. Qualitative description belongs to a bygone era, and will eventually be recognised as a replaceable, intervening variable. This position is not without its critics. An example is Searle.

Appendix III: Contemporary Speech Act Theory of Searle

An interesting contemporary view in the spirit of Aristotle is that of Searle's metaphysically minimal "Speech Act Theory" (SAT). It is summarised in the diagram below.

Searle's speech act theory

Searle's speech act theory and theory of rationality in action represents a continuation and extension of a broadly Aristotelian account.(see Appendix IV). He has set these views out in *Intentionality, The Rediscovery of Mind, The Mystery of Consciousness, Rationality in Action* and elsewhere over 25 years. Speech Act Theory's sophisticated account of intentionality adds 'speaker meaning' to an account of speech acts. He vindicates the idea that the some account similar to Aristotle's categories, the theory of meaning, reference, and metaphysics are indispensable for self-understanding. Mind-body "identity" in some form is not denied, but the form of the laws linking mind to body is not obvious. Searle adopts a sophisticated, what might be dubbed a 'promissory note" form of materialism, which says that eventually 'vertical' bottom up physical accounts of human action and top-down voluntary psychological accounts will meet together and match up, without wiping out freedom or consciousness of the self, probably depending on an expansive account of "matter" currently unavailable. (See also C. Taylor's *The Explanation of Behaviour*).

The prospects of reductive analysis of psychological phenomena like intentions to behaviours or description capable of extensional analysis is

impeded by the doctrines of the background and of finality in Aristotle (point 7 and 8) and Searle's highlighting of the tacit background. Dreyfus has also offered some serious objections to AI version of the materialist-reductivist project. Referential opaqueness of intentionality is still a problem. Plausible solutions are indeed offered in great numbers and depth, (Davidson, Dretske) and this difficulty will not deter serious physicalists. The rise of reductive materialism, especially the materialist theory of mind, cognitive science, and AI, has apparently given some new impetus and warrant to the idea of reduction. But the matter is not yet settled.

Note that Searle explicitly finds it necessary to recognise a self, (Searle says "reluctantly") and necessary to distinguish all the same notions and categories which we have canvassed above- notions such necessity, the causality relation, quality, and quantity. Notions such as that of an agent self and the idea of the truth, what we say about the world, and the world itself are distinguished as before. SAT assumes that causality and time exist and are anisotropic, (one way); and it distinguishes logically claims about one, many, and none. Some of these notions cannot be explained purely in quantitative terms. Necessity requires some postulates to be laid down about possibility; number requires discussion of the ancestor/successor relation, causality of transitivity. Speech act Theory distinguishes the "conditions of satisfaction" of various speech acts imperatives, assertions, questions, promises, exclamations etc and what Searle calls their "imposition" by the agent self, as illustrated below. In some cases the imposition causes action. He uses the same notions of a correspondence relation, causal direction, and modality that Aristotle began with. There is a doctrine of "direction of fit between world and word", and of agent causality through imposition of imperative demands.

For example: take the utterance "It is the case that: the cat is on the mat". For this assertion to be true the world being a certain way as specified in the propositional content, (e.g. the cat being on the mat), determines the truth here. The direction of fit is word to world, and world sets the standard or "decides". In the case of "Put: the cat on the mat!" this asks an agent to cause the cat to be on the mat. The command maker's will and the propositional content or phrastic determines how the world is to be if the command is obeyed. The direction of fit is world to word and the commander's word sets the standard. Other speech acts than assertion and command, each with its own directions of causality and fit, might contain the sentences:

- Is: the cat on the mat? (interrogative)
- I wish: the cat were on the mat or put the cat on the mat (imperative)
- I hereby place; the cat on the mat (performative)
- I promise to put: the cat on the mat (commissive)
- Necessarily/possibly/probably: the cat is on the mat
- Wow! The cat is on the mat! (expressive)

The core idea of "the cat being on the mat" is called the phrastic; the preceding phrases are operators indicating the conditions of satisfaction of the relevant speech act. Quantification will always be over some individuals with properties or relations within the phrastic, determinate or not. Here again there

is nothing in Speech Act theory to warrant a divide between quality and quantity, or to dispense with the non-quantitative. Both would be equally part of the content of the phrastic with the same conditions of satisfaction capable of being imposed by the speaker. Searle's Model of "Direction of fit"; Imposition of conditions of Satisfaction, and Direction of Causation.

World to Word Fit and Causality in Speech Act Theory

WORLD		WORD		
What (the World) is e.g. Stars/dark matter Brains/minds/speech acts* Atoms Nanos The natural order	D I R E C T I O N	Meaning/sense What we can signify with or what has (meaning) e.g. English language	Speech Acts What we can say in language (Indicated by Operator) (conditions of satisfaction set out in language)	Further acts: What we in particular do with words (in speaking) e.g. saying "I do" in context can be marrying
Substances, properties , and accidents Actions Time Relations Circumstances	O F F I T A N D C A U S A L I T Y	<ul style="list-style-type: none"> • Concepts – dictionary or encyclopaedia • 'Propositional contents' or • 'phrastic'/'properties' of the form "that S is P" • Operators/quantifiers e.g. It is the case that (all) S is P. Make it to be the case that S is P 	It is the case that ... Make it the case ... that Is it the case that? Wow! I heard ... I promise ... Truth conditions for (successfully reference) direction of fit/causality Assertion (truth reference) Command satisfaction/satisfied Question Exclaim/Declare Promise	Impose 'Speaker' meaning (intention) on pre-conditions of satisfaction of the sentence in a further context (set of circumstances)

The ideas of direction of fit, imposing conditions of satisfaction, and direction of causality (e.g. in an assertion "fit" is "word to world"; causal direction is "world to word"), do much of the work of 'Categories' of the sort Aristotle, Kant and Hegel discuss e.g. substance causality, number, quality, relation. In short, in Speech Act Theory we have a sophisticated metaphysics in the form of a theory of reference and semantics. (Searle *Rationality in Action*). There is a doctrine of causality according to which in perception and memory, the world causes states of the subject; in imperatives, the mental state causes changes in the world. Free-choice is real even if it will have a materialist explanation eventually.

Appendix IV: Schools of Thought as to the Relation of Quality and Quality

Theism	Non-transcendent	Parmenides	Plato	Plotinus			Spinoza	Hegel?		
	Creationist	Augustine	Augustine	Erigena	Al Gazzali Damian i/Autrecourt	Aquinas	Kant	Hegel?	Gilson	Geach Haldane Taylor
Mainstream	Aristotle	Stoics	Augustine			Aquinas Leibnitz	Kant	Hegel	Russell Frege	Searle
Existentialism	Christian					Scotus	Ockam	Kierkegaard	Dostoevsky	Marcel
	Non-Christian									Sartre Buber
Marxism						Marx	Sartre			
Materialism	Democritus							Russell A.J. Ayer	Armstrong	Dretske Dennett

END NOTES

- i Much of this division dates back at least to 1950's heyday of Behaviourism associated with B. F. Skinner. This school favoured the rejection of the idea of an inner agent-self, and of introspection or phenomenology as an investigative method, in favour of measurable observable "behavioural events." Many writers who do not agree with behaviourism nevertheless think that only law-like statements of the quantitative type permit probabilistic scientific explanation of individuals and cases. One weakness was that the same observed behaviour could be exhibited for different reasons e.g. the same basic arm motion could be the nucleus for many intentional actions; not going near or apparently avoiding heights could be emitted for different and opposite reasons, lack of climbing resources or fear.
- ii In his own technical terms, qualitative properties are "non-compositive, non-divisible, open, repeatable, and internal." I will not expound or defend the view here but it represents a strong pro-qualitative stance and a viable dualism. For details see Chisholm 1991.
- iii To take a trivial example of how stipulated quantity can distort qualitative judgement or reflect it, what if a "strike" is defined as a two hour "down tools", or a down tools of two days? Ten days? Stipulate the former and Australia might be "more subject to industrial unrest" than Sweden, even if the actual hours "off the job" were the same. Marxists point out that such plasticity, driven by distaste for Swedish socialism and egalitarianism makes a mockery of much "objective" libertarian inspired comparative quantitative economic analyses of "productivity." To take another case, if "trust" is conceptually a five place predicative relation, always trust (1) by A (2) of B in respect to (3) C, where A must be (4) in characteristic intentional trusting related states I(1-n), and (5) situated within a specific domain, D, (such as the family, civic, organisational domain), then it is a waste of time looking quasi-scientifically for "the nature and causes of trust". Study of trust focused on correlating two of the five variables only - say the A-B relation alone- is a category mistake, and no amount of number crunching will help.
- iv So probably Aristotle would now have added dark matter, gravitational forces, sub-atomic particles, ultra-sound, X-Rays etc. and anything we can now talk about, identify and re-identify. Anything having an identifiable, complex internal structure or powers he would certainly have counted as a being, at least in a transferred or analogous sense which will be explained presently.
- iv Today we can distinguish (1) an individual, which if it exists can have a potential proper name, and exemplifies some type of attribute, like humanity; (2) the predicative "is" which attaches to the attribute in e.g. "is a man" and can be ascribed to the individual as in "Socrates is a man," which would be symbolically written "Ms"; (3) an existential claim about the individual, as in "Socrates exists," which could be symbolised by E!s; or s=s; and (4) the existential quantifier to express the idea: "Someone is a man" would be written: (Ex)Mx .
- v In later development by Aristotelians and Phenomenology: "directedness on an object", and "referential opacity" mental existence and directedness on an object are cited by later Aristotelians and Phenomenologists as marks of the psychological. Psychological properties, like "being a friend" or "friendship", are often also intentional in the technical sense of having "referential opacity". This means that if a term is embedded in an intentional context like "A believes that S is P" or "A wishes that S is not P", then the inference rules applicable in extensional contexts regarding the embedded "S is P" will not apply to the whole sentence. But such beliefs and intentions still have assignable truth conditions. One either does or does not believe that S is P. The physical properties of persons are more determinate and measurable, capable of entering into extensional contexts and inferences. But these are in some ways less interesting and important than our intentions, beliefs and desires, e.g. for identification and ethical purposes.
- vi For my part I am in the latter camp. I can co-exist with "aspirational" searches for successful essentialism and existentialism. In some form I am a theist who thinks the success of science is a miracle, and a qualified or soft non-materialist, in the sense of an upholder of free choice at a "horizontal" level as indispensable to human self-understanding, even if it has a physical substrate at the "vertical" level. (On this see Searle 1992). The options are summarised in Appendix III