

John Buridan on the Acquisition of Simple Substantial Concepts

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Summary: The main aim of this paper is to identify the philosophical principles that allow Buridan's Aristotelian empiricism to avoid the sort of "medieval Humeanism" from which he took great pains to distinguish his own nominalism. The paper argues that once two crucial principles endorsed by Buridan against contemporary skeptics are acknowledged (dubbed *the principle of the activity of the intellect* and *the principle of the substantial content of sensory information*, respectively), any empiricist should be able to provide a plausible account of our ability to acquire *genuine* substantial concepts from sensory information, which is all that is required for rebutting the relevant skeptical arguments concerning the scientific knowability of sensible substances.

1. The Problem for Empiricists

Scientific knowledge of physical reality, at least in the strict, traditional sense, has to be based on necessary, universal generalizations. Such generalizations, in turn, are impossible without universal, substantial concepts of extramental objects. For if none of our concepts represents substantial characteristics of extramental objects, then our concepts can only represent contingent features of their objects, and so they cannot provide us with universal, necessary knowledge of these objects. It is therefore crucial to any epistemology upholding the possibility of scientific knowledge in this sense to account for the human mind's ability to acquire substantial concepts of things in extramental reality.¹

Such an account, however, is particularly problematic for empiricists, who, for the purposes of this paper, will broadly be characterized as philosophers holding that the human mind begins its existence in this life without any definite mental contents about extramental reality, in short, without any categorematic concepts,² but has to acquire its concepts in a natural process from experience.

To be sure, this is a somewhat broad characterization, which will turn out to comprise philosophers whom we usually would not subsume under the label 'empiricist' without reservation.³ Nevertheless, this characterization certainly distinguishes a number of medieval Aristotelians from Platonists, Augustinians, and Cartesians, who would hold that the human mind begins its existence in this life in possession of at least some categorematic concepts, which therefore it does not acquire in this life from experience. Consequently, for these philosophers the acquisition of these concepts in this life is not a problem at all. They rather have trouble with accounting for the apparent lack of these concepts in children and mentally impaired adults, as well as the apparently mysterious match between these prenatal or innate concepts and

¹ To be sure, our ability to acquire such concepts will still not guarantee that we know *which* of our concepts are the essential ones. That is the task of empirical research to find out. But we can know *a priori* that if we *cannot* have such concepts, then we *cannot* have scientific knowledge in the specified sense. For more on this issue see Klima 2002.

² Obviously, syncategorematic concepts, such as the concepts of the Boolean operations of negation, conjunction, etc., may consistently be treated even by empiricists as innate operations of the mind, not carrying any information about extramental reality, but simply operating on categorematic concepts which do carry such information.

³ For a discussion of the issue of 'empiricism' in late medieval philosophy, see Zupko 1997.

the objects of empirical reality, and, in general, the supernatural dependency of what appears to be a natural operation of the human mind, namely, understanding.⁴

By contrast, the acquisition of substantial concepts in this life is a problem for empiricists, for they have to be able to show that these concepts can somehow be derived from the natural input the mind receives in this life, namely, sensory experience. However, sensory experience apparently can only provide the mind with information about sensible qualities of objects of experience, which are all accidental, non-substantial features of these objects. To be sure, if substantial concepts can be derived as various sorts of combinations of the concepts of these sensible qualities, then the problem may seem to be solved, in the way proposed by the British empiricists, Locke, Berkeley, and Hume. However, as John Buridan's argumentation in q. 4 of bk. 1 of his *Questions on Aristotle's Physics* had shown centuries before the British empiricist approach emerged, such a derivation is impossible.

In this paper, I will first argue, rather anachronistically, that Buridan's discussion in this question amounts to a principled refutation of the British empiricists' conception of our substantial concepts as "collections of simple ideas of sensible qualities".⁵

After identifying the principles that allow this refutation, I will show that on the basis of two further Aristotelian principles Buridan can successfully defend the possibility of scientific knowledge of physical reality, while staying within the bounds of the broadly interpreted empiricism characterized above.

In conclusion, I will argue that it was precisely Buridan's insistence on these Aristotelian principles that allowed him to be a thoroughgoing empiricist without slipping into the sort of "medieval Humeanism" from which he took great pains to distinguish his own nominalism, namely, the skepticism of Nicholas of Autrecourt and his ilk (i.e. whomever else Buridan is opposing in this question).⁶

⁴ As Matthew of Aquasparta (*Quaestiones Disputatae*, pp. 94-96) remarks in connection with the doctrine of divine illumination: "... if that light were the *entire* and *sole* reason for cognition, then the cognition of things in the Word would not differ from their cognition in their proper kind, neither would the cognition of reason differ from the cognition of revelation, nor philosophical cognition from prophetic cognition, nor cognition by nature from cognition by grace." – "... si lux illa esset ratio cognoscendi *tota* et *sola*, non differret cognitio rerum in Verbo a cognitione in proprio genere, nec cognitio rationis a cognitione revelationis, nec cognitio philosophica a cognitione prophetica, nec cognitio per naturam a cognitione per gratiam."

⁵ John Locke: *An Essay Concerning Human Understanding* (hereafter: *Essay*), bk. II, c. 23, §14, p. 305, ll. 2-13: "I say *our* *specifick* Ideas of Substances are nothing else but a Collection of a certain number of simple Ideas, considered as united in one thing. These Ideas of Substances, though they are commonly called simple Apprehensions, and the Names of them simple Terms; yet in effect, are complex and compounded. Thus the *Idea* which an *English*-man signifies by the Name *Swan* is white Colour, long Neck, red Beak, black Legs, and whole Feet, and all these of a certain size, with a power of swimming in the Water, and making a certain kind of Noise, and, perhaps, to a Man who has long observed those kind of Birds, some other Properties, which all terminate in sensible simple *Ideas*, all united in one common subject."

⁶ See Rashdall 1907, and Scott 1971. In Thijssen 1987, Hans Thijssen has plausibly argued that since some of the theses and arguments Buridan opposes here do not reflect Nicholas' doctrine as we know it, Buridan may well have had other opponents in mind. On the other hand, since the theses and arguments in question are at least not incompatible with Autrecourt's known doctrines, it is still possible that Buridan had in mind some further works or even just oral presentations of Autrecourt's that we simply do not know of from other sources. Indeed, this latter alternative has the advantage of explaining the phenomena *per pauciora*. In any case, my subsequent argument is not dependent on the identity of Buridan's actual target of criticism in this question.

2. Buridan's "Refutation of British Empiricism"

In his question-commentary on Aristotle's *Physics*, Buridan raises the question "whether in every science the knowledge and understanding of things arises from the preexisting cognition of their causes, principles, and elements".⁷

After advancing a number of arguments supporting the negative reply, Buridan begins his discussion by expounding an opinion on the issue, which he will then go on to refute:

This question and the arguments brought up in connection with it raise several difficulties. One such difficulty is whether from the cognition (*notitia*) of one thing one can obtain the cognition of another; for there are two sorts of cognition, namely, complex and incomplex. About the incomplex sort some people say that no incomplex cognition can be obtained from another, since no cognition can be obtained from another except by means of a consequence; but a consequence can only lead from a complex [cognition] to a complex one; therefore, etc. In the second place, they infer as a corollary that we have no cognition of any substance in terms of incomplex cognition, for we can arrive at the cognition of substances only by means of the cognition of accidents; and so by means of some consequence, which can only obtain between complex [cognitions]. But I do not agree with this opinion, and I posit two conclusions against it.⁸

Buridan's first conclusion directly attacks the first claim of this opinion, namely that no simple cognition can be obtained from a simple cognition. He points out that the claim is self-defeating insofar as the simple intellectual cognitions it involves had to come from some simple sensory cognitions, in line with the common assumption of the broadly understood empiricism described above; and so, some *simple intellectual cognition* had to come from some *simple sensory cognition*, whence some simple cognition had to be obtained from some simple cognition, contrary to the original claim. As he writes:

The first [conclusion] is that some incomplex cognition can be obtained by means of another. For there are incomplex intellectual cognitions, and all intellectual cognitions are obtained by means of another [act of cognition]; therefore, some incomplex cognition is obtained by means of another [act of cognition]. The major premise has to be accepted, for if a caviller were to deny it, then [by virtue of this denial] he would have to concede at least the existence of some complex intellectual cognition; but the complex [cognition] would have to be composed of simple ones, for it is not divided to infinity as the continuum would be, and an intellectual cognition is not composed of sensory cognitions; therefore, it is composed of simple intellectual ones. But the minor of the principal argument is also clear, for at least the first intellectual cognition has to be obtained from a sensory one, and, in general, every intellectual cognition must be obtained from sensory cognition either directly or indirectly, since one who understands has to attend to [speculari] the phantasms, as is stated in book 3 of *On the Soul*; and for this reason it is also claimed in book 1 of the *Posterior Analytics* that if we lose one of our senses, we also lose the knowledge of the proper object of that sense.⁹

⁷ Buridan: *Quaestiones super Octo Libros Physicorum Aristotelis* (hereafter: QiP), lib. I, q. 4.

⁸ Ibid., f. 5ra: "Ista quaestio et rationes ad eam adductae implicant in se plures difficultates. Una difficultas est utrum ex notitia unius potest fieri notitia alterius, cum sit duplex notitia, scilicet complexa et incomplexa. Quidam de incomplexa dicunt quod nulla notitia incomplexa fit per aliam, quia non fit una notitia per alteram, nisi virtute consequentiae; sed consequentia non est nisi complexi ad complexum; igitur, etc. Secundo illi inferunt correlarie quod nullam substantiam cognoscimus notitia incomplexa quia non venimus in notitiam substantiarum nisi per notitiam accidentium, igitur in virtute alicuius consequentiae, quae non est, nisi complexorum. Sed huic opinioni non assentio; ideo pono contra eam duas conclusiones."

⁹ Ibid., f. 5ra: "Prima est quod aliqua notitia incomplexa potest fieri per aliam. Quia aliqua est notitia intellectiva incomplexa, et omnis notitia intellectiva fit per aliam; igitur aliqua notitia incomplexa fit per aliam. Maior concedenda est, quia si cavillator vellet eam negare, saltem ipse concederet noticiam intellectivam complexam, et oportet complexam esse compositam ex simplicibus, non enim dividitur in infinitum, sicut divideretur continuum. Et notitia intellectiva non est composita ex sensitiva; igitur est composita ex intellectivis simplicibus. Sed etiam minor principalis rationis manifesta est, quia saltem prima notitia intellectualis oportet fieri ex sensitiva, et universaliter omnem noticiam intellectivalem ex sensitiva oportet fieri vel mediate vel immediate, cum intelligentem quemcumque necesse sit phantasmata speculari, ut habetur tertio De Anima, propter quod etiam dictum est primo Posteriorum quod deficiente nobis aliquo sensu deficit nobis scientia de obiecto illius sensus."

So, simple intellectual cognition must somehow come from simple sensory cognition. But how is this possible? And even if we can provide an explanation of the derivation of simple intellectual cognition from simple sensory cognition in general, how do we know that we have such a simple cognition of *substance* obtainable from sense experience? Indeed, why would the intellectual cognition of substance have to be simple? After all, if the British empiricists are right, then the only way we can *make sense* of our substantial terms is to conceive of them as being associated with relatively stable collections of sensory ideas. The reason for this is that these terms certainly cannot be associated with anything over and above the sensory ideas we can gain from experience, whence they have to be associated with those relatively stable bundles of these ideas that the mind usually perceives together, and so associates them with substantive names, for practical reference.¹⁰ Buridan's second conclusion addresses this issue as follows:

The second conclusion is that we have simple concepts of substances, for the concept of man from which we take the substantial term 'man' is a concept of substance, if man is a substance. And that concept supposit only for a substance, for if it supposit for an accident or for something composed from substance and accident, then it would not be true that man is a substance, for neither an accident nor something composed from substance and accident is a substance; but precisely a substance is a substance, and that concept, while it supposit for a substance, does not even connote an accident other than that substance, for then it would not belong to the category of substance, but to that of an accident, as do the terms 'white' or 'big' or 'small', etc. For these terms supposit for substance and not for anything else, just as the term 'man' does, but they leave the category of substance because of their connotation; therefore, a concept from which a term in the category of substance is taken is not a concept of any accident or of something composed from substance and accident, but only of a substance or substances.

And if anyone were to say that they are complex, then the complex ones are combined from simple ones, for in the analysis of concepts one cannot go to infinity; and then those simple ones and the ones composed from them are only of substances; therefore, there are simple concepts of substances.¹¹

The first important thing to note about Buridan's argumentation here is his insistence on the Aristotelian distinction between substance and accident, and his combination of this Aristotelian doctrine with his own semantic analysis of the terms and the corresponding concepts belonging to the Aristotelian categories. The point of the argument is that even if substances had complex concepts, those complex concepts would have to be made of simple concepts. But those simple concepts cannot be concepts of accidents, so those simple concepts would have to be simple substantial concepts, so we would still have to have some simple substantial concepts, which was the point to be proved. On the other hand, the claim that complex

¹⁰ See Locke, *Essay*, bk. II. cc. 22-23 and bk. III. cc. 5-6; George Berkeley, *A Treatise Concerning the Principles of Human Knowledge* (hereafter: *Principles*), nn. 1, 24, 54; David Hume, *A Treatise of Human Nature* (hereafter: *Treatise*), bk. I, sect. VI.

¹¹ QiP, lib. I, q. 4, f. 5ra: "Secunda conclusio est ista quod de substantia habemus conceptum simplicem, quia conceptus hominis a quo sumitur iste terminus substantialis 'homo' est conceptus substantiae, si homo est substantia; et ille conceptus non supponit nisi pro substantia, quia si supponeret pro accidente vel pro composito ex substantia et accidente, tunc non esset verum quod homo est substantia, quia nec accidens est substantia, nec compositum ex substantia et accidens est substantia, sed praecise substantia est substantia. Et ille conceptus etiam supponendo pro substantia non connotat aliquod accidens aliud ab ipsa substantia, qui tunc non esset de praedicamento substantiae, sed accidentis, sicut ille terminus 'albus', vel 'magnus', vel 'parvus', etc. Illi enim termini ita supponunt pro substantia et non pro alio sicut iste terminus 'homo', sed exeunt a praedicamento substantiae propter connotationem; igitur talis conceptus substantialis a quibus sumitur terminus de praedicamento substantiae nec est conceptus aliquorum accidentium, nec compositorum ex substantiis et accidentibus, sed solum substantiae vel substantiarum. Et si quis dicat quod sint complexi, tunc complexi sunt compositi ex simplicibus, cum in resolutione conceptuum non sit processus in infinitum; et tunc illi simplices et compositi ex eis non erunt nisi substantiarum; igitur substantiarum sunt conceptus simplices."

substantial concepts cannot be made up from accidental concepts (contrary to the British empiricists' conception of collections of sensory ideas) is proved here with reference to Buridan's doctrine of the semantics of substantial vs. accidental terms and concepts, as being absolute vs. connotative terms and concepts.

For Buridan, concrete substantial terms are distinguished from concrete accidental terms by their different modes of signification due to the different sorts of concepts to which they are subordinated, yielding their different modes of predication. Concrete substantial terms are subordinated to *absolute concepts*, whence they signify their *significata* absolutely, without relating them to anything else. Concrete accidental terms, on the other hand, are subordinated to *connotative concepts*,¹² whence they signify their *significata* in relation to their *connotata*, which are also called their *appellata* when they obliquely refer to these *connotata* in the context of a proposition. It is a consequence of this difference that substantial terms are predicated of their *significata* essentially or quidditatively, whereas the accidental terms are predicated of their *significata* non-essentially, or denominatively.¹³ Accordingly, absolute terms, in particular substantial terms, function in Buridan's semantics as what we nowadays would call "rigid designators". For these terms are true of their *significata* in a proposition as long as they supposit for them. But since the *supposita* of an absolute term are nothing but its *significata* that exist at the time connoted by the copula of the proposition in which the term is predicated, absolute terms always and necessarily supposit for their *significata* as long as these *significata* exist at the time connoted by the copula of the proposition in which they are predicated of these *significata*. So, these terms may never become false of these *significata* as long as these *significata* exist. Therefore, absolute terms are always predicated of their *significata* essentially, or quidditatively, and thus designate them "rigidly". On the other hand, concrete accidental terms supposit for their *significata* only when their *appellata* belong to their *significata* in the way they are signified to belong to their *significata*. So, if the *appellata* cease to exist or cease to belong to the *significata* in the way demanded by the signification of the term, then these terms cease to supposit for their *significata*, whence they become false of their *significata*, even though these *significata* continue to exist. Therefore, the essential vs. non-essential predication of concrete substantial vs. accidental terms is a direct consequence of their mode of signification, which in turn, is determined by the sorts of concepts to which they are subordinated.

What Buridan's argument shows is that the assumption that substantial concepts are collections of connotative concepts, which is precisely the implication of the British empiricist conception, would lead

¹² John Buridan: *Summulae de Dialectica* (hereafter: *Summulae*), pp. 147, 173, 639, 642, 644-46, 729, 735.

¹³ *Summulae*, pp. 106, 123, 126-28, 131, 135, 138, 147-49, 147n9, 155, 155n20, 156-58, 163, 169, 169n38, 175, 183, 202, 629, 640, 653, 668, 732, 787, 885, 886.

to the absurd conclusion that a substantial term would not be a substantial term, for then it would be subordinated to a non-substantial concept. As he writes further on:

Again, if the substantial concept of man were complex, then let us posit that it consists of three simple ones, namely, a, b, and c. Then, if no concept of substance is simple, a can only be a concept of accident, and the same goes for b and c; therefore, the whole combined from them would also be only a concept of accident, and not one of substance, for a whole is nothing over and above its parts. But this is absurd, namely, that the substantial concept of man should be nothing but a concept of accidents; therefore, etc.¹⁴

To be sure, the British empiricists, who provided precisely this sort of analysis for substantial terms, happily embraced this conclusion, and did not regard it as absurd at all. But Buridan's previous argument, combined with his semantic considerations, also shows that this conclusion directly entails the impossibility of the essential predication of these "phony" substantial terms. This, however, entails further that they cannot serve as the basis for valid scientific generalizations: an implication that was to be worked out in the fullest detail by David Hume. But then, unless Humean skepticism is the inevitable consequence of empiricism in general, an empiricist who wants to save the possibility of scientific knowledge in the traditional sense has to be able to find an alternative way to account for the derivation of our substantial concepts from experience, without turning the terms associated with these concepts into non-essential predicates of their *significata*.

This is precisely what Buridan offers in his subsequent considerations, moderating his "empiricist nominalism" with "Aristotelian naturalism", abandoned by his contemporary opponents, especially Nicholas of Autrecourt.

3. Buridan's Balancing Act: Empiricist Nominalism Combined with Aristotelian Naturalism

In response to the arguments supporting the opinion he rejects, Buridan offers four different ways in which one may account for obtaining some simple cognition from another without any inference. As he writes:

Then, [I respond] to the arguments supporting this opinion. To the first, we have to reply that some cognition is obtained from another without inferring one proposition from another or others in four ways. First, objectively. For if there is some cognition in an external sense, then it is related to the cognition of the common sense as its object, and also any sensory cognition is related to intellectual cognition as its object.¹⁵

¹⁴ QiP, lib. I, q. 4, f. 5rb: "Item si conceptus substantialis hominis sit complexus, ponamus quod hoc sit ex tribus conceptibus simplicibus, scilicet a, b, et c. Tunc si nullus conceptus substantiae est simplex, a non esset nisi conceptus accidentis, et similiter nec b, nec c. Igitur totum complexum ex eis non esset conceptus, nisi accidentium et non substantiae, cum totum nihil sit praeter partes. Sed hoc est absurdum, scilicet quod conceptus substantialis hominis non sit nisi conceptus accidentium; igitur, etc."

¹⁵ QiP, lib. I, q. 4, f. 5rb: "Tunc ad rationes illius opinionis. Ad primam dicendum est quod fit una notitia ex alia sine consequentia alicuius propositionis ad aliam propositionem vel alias propositiones quadrupliciter. Primo quidem obiective. Quia si sit aliqua notitia in sensu exteriori, se habet per modum obiecti respectu notitiae sensus communis et etiam notitia sensitiva se habet per modum obiecti ad notitiam intellectivam."

In this way, the higher cognitive faculty forms some act of cognition distinct from the act of cognition of a lower cognitive faculty simply because it takes the act of the lower faculty as its object. To be sure, one has to make here the common distinction between an immediate and ultimate object: in the cognition of external objects (as opposed to the soul's reflecting on its own acts) the act of the lower faculty is only the immediate object of the act of the higher faculty, insofar as the higher faculty cognizes the object of the lower faculty *by means of* cognizing the act of the lower faculty, in the same way as when I see my face in the mirror *by means of* its reflection. In any case, this certainly is the most general way in which one simple act of cognition can give rise to another, or indeed, in general, one stage of information processing can give rise to another, as when a picture taken by a digital camera is electromagnetically stored on a computer's hard drive possibly for further processing. The important point here is that information received by one sort of encoder of that information can be actively used and further processed by another encoder, by reason of its own receptive and processing ability. In fact, in this way, the second encoder may even add information not contained in the first, as when a computer tags the picture files on its hard drive with time and date stamps. This is precisely the point Buridan makes concerning the second way in which a simple act of cognition may give rise to another:

Second, [a simple act of cognition may give rise to another] elicitively, as Avicenna says that the estimative power from a sensed intention, namely of color or shape or motion, elicits an intention not sensed, namely that of attraction or repulsion [*amicitiae vel inimicitiae*]. This is why sheep fear and flee the wolf, and follow the shepherd. And this is not a miracle. Since the soul is much nobler than fire, yet fire in generating heat is able by that heat also to generate lightness and rarity, so it is reasonable that the soul, by means of one act of cognition is able to generate another one, naturally following upon the former.¹⁶

This is indeed plausible; however, when he specifically addresses the issue of how simple substantial concepts may be derived from sensory cognition, Buridan warns us that this way of accounting for this specific process of concept acquisition may contain a false assumption. In his questions on Aristotle's *On the Soul*, he analyzes the issue in the following way:

... there is one way, in the first place, in which the cognition of accidents leads us to the cognition of substance. And this assumes *first* that the intellect is moved by phantasms, the imagination by the senses, and the senses by external objects. It assumes in the *second* place that the senses and the imagination are only of accidents. It assumes in the *third* place that the estimative power is superior to and more excellent than the external sensitive power; and so it is able to elicit from the sensed intentions some intentions not sensed. Thus also the intellect is superior to any sensitive power, whether external or internal; therefore, it is able from the intentions of accidents, which fell into (*cadebant*) the imagination, to elicit intentions of substances, which did not fall into (*cadebant*) the imagination. And so, by means of the cognition of accidents, we can arrive at the cognition of substances.

Briefly, this way [of addressing the issue] is defective in its second assumption, which was that the senses are only of accidents. For this goes against Aristotle, who in bk. 2 of this work [namely, *On the Soul*] asserts that the son of Diarus is sensed;

¹⁶ Ibid., f. 5rb: "Secundo etiam elicitive, sicut dicit Avicenna quod virtus aestimativa ex intentione sensata, scilicet coloris, aut figurae, aut motus, elicit intentionem non sensatam, puta amicitiae vel inimicitiae. Ideo ovis timet et fugit a lupo, et sequitur pastorem. Et hoc non est mirum; cum enim anima sit multo nobilior virtus quam ignis, et tamen ignis generando calorem potest consequenter mediante illo calore generare levitatem et raritatem, rationabile est quod anima mediante una notitia potest consequenter generare aliam naturaliter consequentem ad priorem."

although it is true that this is not *per se*, but *per accidens*. Indeed, we do not perceive substances **by means of the senses** under substantial concepts, but we do perceive them under accidental and connotative ones, and not under purely absolute ones.¹⁷

So, even though the intellect may have the power to elicit intentions not contained in the senses, in the formation of substantial concepts it is simply not true that these would have to be “cooked up” by the intellect alone, for the sensory data provided by the senses about accidents does carry information about the substances to which these accidents belong. This is the idea that Buridan elaborates in the continuation of this passage, listing three further ways in which one can account for the intellect’s ability to form substantial concepts from sensory data, by extracting the information this sensory data carries about substances:

The second way is that the senses first perceive both substance and accident in a confused manner, and afterwards the intellect, which is a superior power, differentiates between substance and accident. Therefore, if I see someone now to be white and later I see him to be black, and at the same time I perceive that he remains the same, I arrive at the cognition by which I notice that **he** is other than whiteness and likewise other than blackness. And thus, although **substance and accident at first** are apprehended by means of the senses in a confused manner, **nevertheless given such sensitive cognition** the intellect, which is a superior power, can arrive at the cognition of substance itself.

The third way is possible because things are cognized by means of their similitudes. For it is stated in bk. 3 of this work that “a stone is not in the soul, but the species of the stone is”. Since, therefore, it is the case that any effect bears the similitude of its cause, and an accident is an effect of a substance, it follows that an accident also bears a similitude of a substance, and consequently the intellect is able to arrive at the cognition of substance by means of the accident.

The fourth way can be this: prime matter, before a substantial form is educed from its potentiality, needs accidental dispositions preparing it for receiving such a form; the same can be imagined of the potential intellect, namely that before there would be the similitude of substance in it, there have to be in it the species and similitudes of accidents. Once these are in the potential intellect, the agent intellect is able to extract from them the natural similitude of that substance to which those accidents belonged whose similitudes and intentions were in the potential intellect.¹⁸

¹⁷ J. Buridan, *Quaestiones in De Anima* (prima lectura) (hereafter: QDA), lib. I, q. 5 (in idem, *Le traité de l'âme de Jean Buridan* (*De Prima Lectura*), pp. 206-207): “Quantum ad tertium sciendum est quod est unus modus primo quo cognitio accidentis ducit nos in cognitionem substantiae. Et supponit primo quod intellectus movetur a phantasmate, phantasia vero a sensu, sensus vero ab obiecto exteriore. Secundo supponit quod sensus et phantasia non sunt nisi accident<ium>. Tertio supponit quod virtus aestimativa est superior et excelsior quam sit virtus sensitiva exterior; et ergo ex intentionibus sensatis potest elicere intentiones non sensatas. Sic etiam intellectus est virtus superior quam quaecumque virtus sensitiva sive interior sive exterior; et ergo potest ex intentionibus accidentium quae cadebant in phantasia elicere intentiones substantiarum quae non cadebant in phantasia. Et sic mediante cognitione accidentium possumus devenire in cognitionem substantiarum. Breviter. Iste modus deficit in secunda suppositione quae erat quod sensus non est nisi accidentium. Hoc enim est contra Aristotelem in *IP huius*, ubi dicit quod *Diari filius* sentitur; verum est tamen quod hoc non est per se sed per accidens. Unde substantias non percipimus mediante sensu sub conceptibus substantialibus, sed bene sub conceptibus accidentalibus et connotativis, et non mere absolutis.” This passage is in perfect agreement with the doctrine found in the corresponding passage of the commentary on the *Physics* (and the other authentic passages referred to in it; see n. 19 below). Because of this doctrinal agreement, I take this passage to be a reliable report of Buridan’s ideas (whether by himself or someone else), despite doubts concerning the text’s authenticity. Cf. Berkeley, *Treatise*, Part I, n. 148, p. 88: “Hence it is plain we do not see a man – if by man is meant that which lives, moves, perceives, and thinks as we do – but only such a certain collection of ideas as directs us to think there is a distinct principle of thought and motion, like to ourselves, accompanying and represented by it.”

¹⁸ QDA (prima lectura), lib. I, q. 5, pp. 207-208: “Secundus modus est quod sensus primo percipit simul confuse substantiam et accidens, sed postea intellectus, qui est virtus superior, ponit differentiam inter substantiam et accidens. Unde, si video aliquem nunc esse album et postea eundem video esse nigrum, et cum hoc percipio quod ipse manet idem, ego venio in cognitionem qua cognosco hoc esse aliud ab albedine et similiter aliud a nigredine. Et sic, quamvis primo apprehendantur mediante sensu substantia et accidens confuse, tamen tali cognitione sensitiva praecedente, intellectus, qui est virtus superior, potest venire in cognitionem determinatam ipsius substantiae. Tertius modus potest esse, nam res aliquae cognoscuntur per suas similitudines. Dicitur enim in *III^o huius*: ‘lapis non est in anima, sed species lapidis’; cum ergo ita sit quod quilibet effectus gerit in se similitudinem suae causae, et cum accidens sit effectus substantiae, sequitur etiam ipsum accidens gerere in se similitudinem substantiae, et per consequens <per> ipsum accidens intellectus potest devenire in cognitionem substantiae. Quartus modus potest esse iste: nam sicut materia prima, antequam de eius potentia educatur forma substantialis, indiget dispositionibus accidentalibus disponentibus materiam ad recipiendum talem formam, sic etiam potest imaginari de intellectu possibili: antequam in eo sit similitudo substantiae, oportet quod primo in eo <sint> species et similitudines accidentium. Quibus existentibus in intellectu

Basically the same point is made in the continuation of the previously discussed passage from the *Physics*-commentary.¹⁹

Conclusion

In view of these passages, we can summarize the Aristotelian principles allowing Buridan to maintain his empiricist nominalism without slipping into skepticism in the following way.

1. The intellect is not just a passive receiver of sensory information, but a cognitive faculty actively processing this information, extracting from it content that is not so extractible from it by the senses.
2. The sensory information received by the senses, besides its primary, *per se* content concerning the sensible qualities of sensory objects, also carries some further content about the substances bearing these sensible qualities.

Once these two principles, which may be dubbed *the principle of the activity of the intellect*, and *the principle of the substantial content of sensory information*, respectively, are acknowledged, any empiricist should be able to provide a plausible account of our ability to acquire *genuine* substantial concepts from sensory information.²⁰ For in view of the first principle, the intellect is obviously able to extract content from sensory information which the senses could not so extract even though they may carry it, in the way, for instance, light received by a telescope carries not only visible information about the stars, but also information about their material constitution, which, however, is extractible only by means of spectral analysis. But in view of the second principle, the information about sensible accidents also carries such extractible information about the substances to which these accidents belong. Therefore, the intellect should be able to form genuine substantial concepts from this sensory information. But then, these genuine substantial concepts will be denoted by essential predicates of the things conceived by means of

possibili, intellectus agens potest extrahere ex illis similitudinem illius substantiae naturalem, cuius substantiae sunt illa accidentia quorum similitudines et intentiones erant in intellectu possibili.”

¹⁹ QiP, lib. I, q. 4, f. 5rb-va: “Tertio modo, abstractively; ut quia habeo primo conceptum confuse et simul repraesentantem et substantiam et accidens, ut cum percipio album – non enim solam albedinem video, sed album. Et si postea percipio idem moveri et mutari de albo in nigrum, iudico hoc esse aliud ab albedine, et tunc intellectus naturaliter habet virtutem dividendi illam confusionem, et intelligendi substantiam abstractively ab accidente, et accidens abstractively a substantia, et potest utriusque formare simplicem conceptum, et sic etiam abstrahendo fit conceptus universalis ex conceptu singulari, sicut debet videri in tertio De Anima, et septimo Metaphysicae.” – “In the third way, abstractively; as when I first have a concept that represents substance and accident together in a confused manner, for example, when I perceive something white, for I see not only whiteness, but something that is white, and then if I perceive the same thing to move and change from white to black, then I judge that this is something distinct from whiteness, and then the intellect naturally has the power to analyze that confusion, and to understand substance abstractively from accident, and accident abstractively from substance, and it can form a simple concept of each, and it is in the same way, by abstraction, that a universal concept is formed from a singular one, as one should see in bk. 3 of *On the Soul*, and bk. 7 of the *Metaphysics*.” Cf. QiP, lib. I, q. 7, ff. 7vb-10ra; Buridan, *Questiones in De Anima* (tertia lectura), lib. III, q. 8, pp. 64-89, esp. pp. 74-75, pp. 79-80; idem, *Quaestiones in Aristotelis Metaphysicam*, lib. VII, qq. 15-20, ff. 50rb-54va; idem, *Quaestiones in Porphyrii Isagogen*, esp. pp. 172-73.

²⁰ To be sure, one might still raise the question whether Buridan is “entitled” to these Aristotelian principles in his solution, given his *semantic* ideas concerning the natural signification of absolute concepts. But this question is beyond the scope of the present paper. Cf. King 2001.

these concepts, which will always necessarily apply to these things as long as these things exist. And so, these predicates will be scientifically knowable characteristics of these things.

All in all, even if, perhaps, Nicholas of Autrecourt was “the medieval Hume”, it did not take a “medieval Kant”²¹ to refute his skepticism. For Buridan’s version of an essentialist nominalism was sufficient to show that one can be a nominalist and a thoroughgoing empiricist without having to fall prey to any serious form of skepticism. In this way, Buridan’s essentialist nominalism could, in principle, have shown a way out of the dilemma of empiricism vs. rationalism of early modern philosophy. Indeed, the dilemma may not even have emerged in its original form, if the Aristotelian empiricism of the scholastics, including Buridan’s, had not been abandoned earlier, partly for extrinsic reasons, by the new intelligentsia of a new era.

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²¹ It may be interesting to note here that from a medieval perspective Kant’s solution to “Hume’s problem” may be characterized as simply shifting the categorical status of some fundamental metaphysical concepts, such as ‘substance’, ‘accident’, ‘cause’, ‘effect’, ‘existence’, etc. Instead of treating them as (whether innate, infused, or empirically acquired) categorematic concepts, he treats them as “logical functions”, i.e., syncategorematic concepts. But then it is no wonder that in the conceptual framework of post-Kantian positivist philosophy a number of traditional metaphysical problems will turn out to be not only radically undecidable, but even meaningless, containing “category mistakes”. At the Copenhagen meeting, Stephen Read also called my attention to Thomas Reid’s very different, “common sense” criticism of Hume’s philosophy, as bearing some remarkable resemblances to Buridan’s approach to the issue. In fact, there may even be some actual historical connection between their ideas, given the lasting influence of Buridan’s thought in Scotland through the circle of John Major. Cf. Haldane 1989.

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