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Abstract. This essay offers an interpretation of Aristotle's remarks on the commensurability of goods in Book V of the *Nicomachean Ethics*. It explores the term 'by hypothesis' (ἐξ Ὑποθέσεως) which Aristotle uses to describe the institution of currency through which commensurability is established. The term implies that Aristotle conceives the origins of currency to lie in a conscious act of stipulation rather than through a spontaneous process in which currency is established via the unintended consequences of individual action. In conclusion, contemporary theories of money are considered and it is asked with which Aristotle's conception of money aligns most closely.

Keywords: Aristotle, commensurability, money, exchange, *Nicomachean Ethics*

Introduction

This essay offers an interpretation of an aspect of Aristotle's remarks on commensurability in the *Nicomachean Ethics* (*Nic. Eth.*). It attends to a term that has received much scholarly attention in the context of Aristotle's logical works but not in the context of *Nic. Eth.* The term, 'by hypothesis' (ἐξ

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Ὑποθέσεως), is used by Aristotle to describe the way in which currency, *qua* unit for measuring the value of goods, is established (1133b21). After considering Aristotle's analysis of commensurability, the term *by hypothesis* is examined along with its cognate noun, *hypothesis* (*Ὑπόθεσις*), as they are used in Aristotle's *Prior and Posterior Analytics*. Aristotle's usage of the term in the *Analytics* sheds light on his discussion of commensurability in *Nic. Eth.* Many interpreters use 'by convention' or a close synonym to translate *ἐξ Ὑποθέσεως* in *Nic. Eth.* The many meanings of 'convention', however, engender ambiguity which can mislead. The ambiguity is captured in definition 9a of the *Oxford English Dictionary* in which 'convention' is defined as 'gleneral agreement or consent, *deliberate or implicit*, as constituting the origin and foundation of any custom, institution, opinion, etc.'.[1] The 'deliberate/implicit' opposition makes for ambiguity, for a convention, custom, institution, etc. can be established deliberately – according to a plan or as a result of explicit agreement – but conventions can also arise implicitly – without design and therefore not as a result of explicit agreement. We think of natural languages and many of their rules when we think of conventions arising in this second, 'implicit', sense. The 'invisible hand' processes through which such conventions come into being are named after Adam Smith's adage about the promotion of the general good via individuals' intentions to promote only their own gain (Smith, 1976/1776, IV.ii.9). This understanding of convention is popular amongst economists in their attempts to explain the emergence of social institutions. A canonical example brings us close to the topic of this essay, for it concerns the origin of money (Menger, 1871). The 'implicit' conception of convention is not an appropriate way to approach to Aristotle's account of the origins of currency. For Aristotle, if something is established *by hypothesis*, it follows from a formal agreement, explicitly laid down. The subject is the term *kata sunthēkēn* (*κατὰ συνθήκην*), with which Aristotle describes the way in which currency comes to serve as a representative of need (*Nic. Eth.* 1133a29). The term *kata sunthēkēn*, like *ἐξ Ὑποθέσεως*, is often rendered by Aristotle's translators as 'by convention'. The term should, however, like *ἐξ Ὑποθέσεως*, be interpreted as a formal agreement rather than as an implicitly arising convention. The essay concludes with reflections on Aristotle and modern theories of money. In this section, what Aristotle means by the terms commonly translated as 'exchange' are subject

to scrutiny, whereby it is argued that his terms for exchange are far more encompassing than the modern understanding of market exchange suggests. It is argued that Aristotle's discussion of 'justice in exchange' in *Nic. Eth.* addresses types of exchange which go beyond the scope of market exchange.

Commensurability and justice in exchange

For Aristotle, commensurability is the foundation of the community: a community or association cannot exist without exchange, for its individuals are not self-sufficient. If exchange is to be just, the items exchanged must be equalized, for which there must be a measure according to which goods are valued. Of this measure Aristotle (*Nic. Eth.*, 1133a19-20) writes:

> All items for exchange must be comparable in some way. Currency has come along to do exactly this, and in this way it becomes an intermediate, since it measures everything, and so measures excess and deficiency – how many shoes are equal to a house.[2]

He adds (*Nic. Eth.*, 1133a26-31):

> In reality, this measure is need, which holds everything together.... And currency has become a sort of pledge of need (*chreia*), *kata sunthēkēn*; in fact it has its name (*nomisma*) because it is not by nature, but by the current law (*nomos*), and it is within our power to alter it and to make it useless
>
> Though things so different cannot become commensurate in reality, they can become commensurate enough in relation to our needs. Hence there must be some single unit fixed *ἐξ ὑποθέσεως*. This is why it is called currency; for this makes everything commensurate, since everything is measured by currency (*Nic. Eth.*, 1133b18-23).

For the time being, two phrases – *kata sunthēkēn* and *ἐξ ὑποθέσεως* – will be left untranslated. Both phrases have been translated as 'by convention', though,

other translations exist. In the second of the three passages quoted above, Aristotle tells us that need is the measure, whereas, in the third, it is currency.[3] Neither 'solution' to the problem of commensurability is free of philosophical difficulty (Gallagher, 2012; Meikle, 1995), though many scholars, Meikle (1995) being a notable exception, see the need solution as Aristotle's final word on the matter of establishing commensurability (Finley, 1970; Judson, 1997; Will, 1954). Aristotle does not explain how currency becomes a 'representative' or 'pledge' (*hupallagma*) of need, but he does make clear that it is currency which does the measuring, even if currency is subordinate to need (*Nic. Eth.*, 1119b26-27):

> We call wealth (*chrēmata*) anything whose worth is measured by money.
>
> Money is supplied as a common measure; everything is related to this and measured by it (*Nic. Eth.*, 1164a1-2).

Currency, for Aristotle, is a human invention, its purpose to measure the value of different goods in exchange. While pronouncing on the function of currency as a measure (and as a store of value which allows for deferred payment (*Nic. Eth.*, 1133b10-13)), Aristotle does not examine its historical origin. The verbs he uses with currency (*nomisma*) draw attention to currency's existence: *nomisma*, he writes, 'came along' (*elēluthe*) (*Nic. Eth.*, 1133a20) in order to make all goods comparable (*sumblēta*); currency must 'exist' (*einai*) (1133b19), lest exchangeable goods be incommensurable (*summetra*) and exchange thus unjust (*Nic. Eth.*, 1133b16); currency is 'provided' (*peporistai*) (*Nic. Eth.*, 1164a2) as a measure. These verbs remain vague about a historical act of establishing currency.

Aristotle states that it is impossible 'in reality' (*alētheia*) (*Nic. Eth.*, 1133b19) for diverse goods to become commensurable. If commensurability exists, its source lies outside the nature of the goods exchanged; goods, that is, can only be commensurable ἐξ Ὑποθέσεως – 'by hypothesis'. My purpose, in the two sections which follow, is to explore the terms left untranslated when citing Aristotle above. The first, ἐξ Ὑποθέσεως, will be the focus of the section following two

subsections, whilst the second, *κατὰ συνθήκην*, which Aristotle uses in his discussion of need, is the subject of a subsequent section.

ἐξ ὑποθέσεως (*'by hypothesis'*)

Let us start with the noun, *hypothesis* (*ὑπόθεσις*), the literal meaning of which is 'something laid down (under)', Its many meanings in Aristotle will be reviewed later, [4] but here, we examine the technical approach to *hypothesis* as an element of logical argument in the *Posterior Analytics* (*Post. An.*). It should be noted that, when the term is transliterated into a Romanised form – *hypothesis* – the word will be italicized to alert the reader to the danger of misconceiving the Greek term if one associates with the English word 'hypothesis'. As we will see, that there is, for Aristotle, nothing necessarily 'hypothetical' about a *hypothesis*.

Aristotle defines a *hypothesis* as a type of 'posit' (*thesis*) that assumes one or other part of a statement (*apophansis*). That is, we have a *hypothesis* if we assume either that 'X is (exists)' or 'X is not' (*Post. An.*, 72a9-24). [5] Aristotle alludes to a learning situation in which a statement is a *hypothesis* for the pupil if she assumes the statement to be true and provable without either proving it herself or having it proven to her. Such a *hypothesis* has validity relative to the learner (*Post. An.*, 76b23-34). If the learner holds no opinion about the truth of the statement concerned, or if she opposes it, the statement is not a *hypothesis* but a 'postulate' (*aitēma*). Because it is provable, a *hypothesis* is not 'merely hypothetical', in the modern English sense, that is, something conjectural or of uncertain validity (Wallace, 1981, p. 52; Wolfsdorf, 2008, p. 44). And because it is provable, a *hypothesis* differs from a 'fundamental principle' (*archē*), for a fundamental principle is 'immediate' and therefore not amenable to proof, that is, not derivable from something else (*Post. An.*, 72a6-8; *Metaphysics*, 1005b14) (see Upton, 1985, pp. 287-288).

In the *Prior Analytics* (*Pr. An.*, I. 23, 29, 44), the term *by hypothesis* appears in Aristotle's discussion of '*syllogisms by hypothesis*' (*συλλογισμόι ἐξ ὑποθέσεως*). These syllogisms proceed when one's interlocutor, *I*, agrees to accept a proposition, *q*, on the condition that another proposition, *p*, be proven to her. 'If

p then *q*' is the *hypothesis* here, and once *p* is deduced, *I* must accept *q* (Lear, 1980, p. 34; Strobach, 2001, p. 251). Aristotle offers an example (*Pr. An.*, I. 44, 50a20-28) which involves two negative propositions, the first of which is deduced syllogistically, the second laid down *by hypothesis*. [6] The first proposition, ˜p, is: 'not every capacity (*dunamis*) is of contraries'. This proposition is amenable to logical demonstration. [7] The second proposition, ˜q, is: not every science (*epistēmē*) is of contraries'. The *hypothesis* upon which the protagonists agree is: ˜p → ˜q, that is, if one accepts 'not p' (or ˜p), then one must accept 'not q' (or ˜q). Once the *hypothesis*, ˜p → ˜q, is accepted, one's interlocutor is honour-bound, as it were, to accept that 'not every science is of contraries' once it has been demonstrated that not every capacity is of contraries. Whilst ˜q may, like ˜p, be amenable to logical demonstration, in the case at hand, it is not demonstrated but assumed by the *hypothesis*: ˜p → ˜q.

Other *syllogisms by hypothesis* are *reductiones ad impossibile* which involve an agreement to the *hypothesis* in advance of the demonstration to be given, as in the following example from the commentary on *Pr. An.* by Alexander of Aphrodisias (259, 20-29). If one wishes to deduce that 'no human can fly', one hypothesises the opposite, viz., 'some humans can fly'. One adds to this the generally accepted premise: 'all flying things have wings', and one deduces the conclusion (if one has postulated that 'some humans can fly'): 'therefore some humans have wings'. The obvious falsity of the conclusion leads one to reject the *hypothesis* ('some humans can fly'), and so the opposite claim – 'no human can fly' – stands accepted.

The foregoing exposition is but a schematic presentation of what Aristotle means by *hypothesis*, and it does not do justice to the complexity of Aristotle's discussion. It nevertheless serves the present purpose of showing whence the term *by hypothesis* comes. We may summarise by listing three facets of the term as follows:

i) In *syllogisms by hypothesis*, the *hypothesis* takes the form of a 'concession' (*homologia*) (*Pr. An.*, I. 23, 41a40) on the part of the disputants who agree to the *hypothesis*. One party stipulates the hypothesis to which the other must agree if the demonstration is to proceed.

ii) The agreement described is made in advance of the demonstration and is a presupposition of the latter. Taking this and the foregoing point together, we may say there is an explicit, conscious act of laying down what one is assuming in advance of the demonstration. [8]

iii) A *hypothesis* is not derived from anything prior, and although it may be susceptible to derivation, its function in *syllogisms by hypothesis* is to provide the ground for what follows.
With this in mind, we may pursue the meaning of *by hypothesis* in Aristotle's ethical and political works.

By hypothesis in the Nicomachean Ethics
The following analysis is based on the hypothesis (!) that *by hypothesis* in *Nic. Eth.* is used analogously to its use in the *Analytics*. Aristotle's use of the same term in different works is thus not coincidental, and the sense of *by hypothesis* in the *Analytics* gives us a clue to its sense in *Nic. Eth.* Aristotle does not give a detailed explanation concerning arguments *by hypothesis* in the *Analytics*, something usually attributed to his audience's familiarity with *hypotheses*, as expounded in Plato's *Meno* (86e-89c) (cf. Striker, 1979, p. 34), in which Socrates proves that excellence is a variety of knowledge with the aid of the *hypothesis* that, if excellence is knowledge, it must be teachable (89c). Socrates likens his use of hypothetical argument with regard to excellence to its use in geometry (86e). To approach Aristotle's use of *by hypothesis* in *Nic. Eth.* the following paragraphs examine his use of the term in other, related, works by Aristotle.

In the *Eudemian Ethics* (*Eud. Eth.*), Aristotle states that deliberation does not extend to the end (*telos*) of action in the productive or fabricating arts (*poiētikais*) because in these arts, one deliberates about means with an end already in sight; the end, here, is described as the foundation (*archē*) and *hypothesis* of action (*Eud. Eth.*, 1227a9-10, 1227b29-30). Aristotle does not, as he does elsewhere, distinguish here between *hypothesis* and *archē*, according to their derivability or immediateness (*Post. An.*, 72a6-24; cf. *Metaphysics* 1005b); his point is that the end is a given presupposition of action. Aristotle gives the example of a doctor, for whom it is given, like a *hypothesis*, that a patient should be made healthy; this is not a matter on which doctors deliberate, for

only the means to make a patient healthy are subject to deliberation (*Eud. Eth.*, 1227b25-6). Aristotle repeats this thought in *Nic. Eth.* (1151a15-19), when he describes the incontinent person:

> For virtue preserves the origin (*archē*), while vice corrupts it; and in action the end we act for is the origin, as the assumptions (*hypotheseis*) are the origins in mathematics. Reason does not teach the origins in either mathematics or in actions; [with actions], it is virtue, either natural or habituated, that teaches correct belief about the origin.

It is, as it were, virtue which provides the first principles of action, and hence the virtuous person does not have to deliberate about the end of action.

In the *Politics* (*Pol.*), Aristotle avails himself numerous times of the term *hypothesis*. Sometimes, *hypothesis* refers to an assumption or premise of an argument (*Pol.*, 1261a16-17, 1263b30, 1329a21). It is also used in the sense of a *principle* which stands behind a concept or institution, e.g. the principle of aristocracy, democracy or of a polity (*Pol.*, 1269a33, 1273a4, 1317a36, 40, 1328b39); here, as in *Eud. Eth.* cited in the previous paragraph, Aristotle uses *hypothesis* as synonymous with *archē* (origin). *Hypothesis* can refer, too, to the principle behind a taxonomy or the headings of a classificatory scheme (*Pol.*, 1300b14, 1314a26). In three places in the *Politics*, Aristotle uses the term *by hypothesis*. At *Pol.* 1332a8-12, he refers the reader to *Nic. Eth.* (1098a16) and its view that happiness (*eudaimonia*) is the complete realization and exercise of virtue. He is at pains to let the reader know that this fact is not 'conditional' (*by hypothesis*) but rather true without qualification (*haplōs*) or necessarily (*tanagkaia*). Aristotle also notes that children are not citizens in the same way as adults; children are only citizens *by hypothesis* (*Pol.*, 1278a5). The two latter uses of *by hypothesis* signify that something is conditional or subject to qualification. They resemble his use of *by hypothesis* in the discussion of commensurability in *Nic. Eth.* There, as we noted, goods are not commensurable in reality but are so under a certain condition, that condition being when the values of those goods are considered according to the measure of currency.

Drawing Aristotle's uses of *by hypothesis* together, then, and applying them to

his discussion of commensurability in *Nic. Eth.*, we may say that Aristotle understands the coming into being of currency *by hypothesis* as follows: currency arises through explicit *agreement*; it is *stipulated* and *agreed to* as a measure of value, and its existence is a *presupposition* of the commensurability of goods which only become commensurable conditionally, that is, relative to the *hypothesis* through which currency comes into existence. The italicised words in the foregoing give us three aspects of *by hypothesis* – agreement, stipulation and presupposition. All are to be found in translations of *by hypothesis* in *Nic. Eth.* Although some translators translate *by hypothesis* as 'by convention', the term is most often translated into English as 'agreement', though 'stipulation' is also common, and 'presupposition' less so. The fourth aspect of *by hypothesis* – the conditionality aspect – is captured in translations of the term not only as 'by stipulation', but also as 'by arbitrary usage'. The 'arbitrariness' of the *hypothesis* captures the conditionality of commensurability, for goods are not by nature commensurable but have to be made thus by some stipulation which is arbitrary relative to the nature of the goods themselves. [9]

Only if agreement is understood to be an explicit and conscious act of assent does it concur with the assent given to a *hypothesis* in *syllogisms by hypothesis* of Aristotle's *Analytics*, where the interlocutor or pupil agrees to accept a hypothesis proposed by the instructor. Let us now turn to the other term - *κατὰ συνθήκην* – which is mentioned by Aristotle in his discussion of commensurability and which, too, is often translated as 'by convention'.

Need and 'kata sunthēkēn'

Aristotle's need solution to commensurability, which was referred to, proposes that exchangeable items are made commensurable – sufficiently, at least, for the purpose of assuring justice in exchange – in relation to people's need. Currency, according to this view, arises as a 'representative' or 'pledge' (*hupallagma*) of need. Currency comes to represent need *kata sunthēkēn* (*Nic. Eth.*, 1133a29). Like the term *by* hypothesis, *kata sunthēkēn* has the sense of an agreement, though 'convention' is also offered as a translation.[10] Let us explore the connotations of *kata sunthēkēn* by looking at its use in other parts of the Aristotelian *opus*.

In the *Politics*, the noun *sunthēkē* signifies a formal compact between allies (*Pol.*, 1280a38, 1284a40). It is synonymous with *summachia* (alliance, usually military) and *sumbolon* (treaty) (*Pol.*, 1280a39-40).[11] Aristotle also avails himself of the term *sunthēkē* in the passage immediately after his discussion of commensurability in *Nic. Eth.* In discussing political justice, he observes that what is 'legal and conventional' (*nomikon kai sunthēkē*) (*Nic. Eth.*, 1134b32) changes according to the constitution of the *polis* in which law is made. 'Conventional' is a reasonable translation of *sunthēkē* here if it carries the sense of formal agreement (cf. de Ste. Croix, 2004, pp. 328-329). With regard to justice, Aristotle tells us, those things which are 'just by agreement and expediency' (*ta de kata sunthēkēn kaito sumpheron tōn dikaiōn*) (*Nic. Eth.*, 1134b35), are analogous to weights and measures, for they vary from place to place. Indeed, this is the case of political constitutions generally, for they differ from one another. The important point for our discussion is the sense of *kata sunthēkēn* as 'by agreement', for weights and measures in Greek *poleis* were '*prescribed by law*' (de Ste. Croix, 2004, p. 329). The formally stipulated and enforced weights and measures make it obvious that any institution which is 'just by agreement and expediency' must, like the norms of Greek metrology, be formally laid down and agreed.

As in the case of *by hypothesis*, then, *sunthēkē* and *kata sunthēkēn* are best understood in the sense of a formal agreement or pact (Liddel and Scott, 1996). This concurs with Aristotle's use of *sunthēkē* in the *Prior Analytics.* when he states that the premises of hypothetical syllogisms are not amenable to analysis but are 'conceded by agreement' (*alla dia sunthēkēs hōmologēmenos*) (*Pr. An.*, I. 44, 50a17-18). *Sunthēkē* here signifies the prior agreement that parties give to a particular hypothesis, usually in an explicit way. As Walter Leszl (1981, p. 316) writes, in some cases 'the term *hypothesis* is treated as synonymous with *homologia* or with *sunthēkē*, in evident allusion to the agreement that is presupposed by or reached in a dialectical debate'. We may therefore conclude that Aristotle describes the representation of need by currency *kata sunthēkēn* to indicate that this representation is based on formal agreement. The way in which the representation ensues may be deemed 'conventional' in that it might differ from *polis* to *polis*, but the explicitness of the agreement is unmistakeable.

We have therefore reached the conclusion that Aristotle's term *by hypothesis* implies a formal act of deliberate establishment. But Aristotle does not offer us further details about how the unit which denominates value is established. The following summary provides a characterization of the way in which the measure that currency provides (*Nic. Eth.*, 1133b20-1) comes into being:

> Just exchange within a community *presupposes* a measure of the value of goods. This measure is currency which exists for the purpose of providing a common unit and thus of making goods commensurable. The commensurability effected by currency is neither a consequence of the nature of goods, nor is it the product of a convention if the latter is understood in its 'implicit' sense. Currency and the ensuing commensurability are arbitrary *stipulations*. Once the members of the community have *agreed* to this stipulation, exchangers can ascertain whether the goods they proffer in exchange are of equal value to those they accept in return. There will thus be justice in exchange.

Conclusion: Aristotle, 'exchange' and modern theories of money

Prima facie, Aristotle's discussion of currency in the *Nicomachean Ethics* has, as its focus, market exchange within the political community. This, at least, is how most commentators understand the fifth book of the *Nicomachean Ethics*. If this interpretation is correct, currency thus manifests itself as a medium of exchange in Aristotle's work, yet anterior to this function of currency is its function of unit of account. Without a unit which ensures commensurability of the things exchanged, there can be no justice in exchange, and hence the unit is a presupposition of just exchange. Hence Aristotle's analysis in the *Nicomachean Ethics* aligns itself with those modern analyses of money for which the unit of account function is primary. J. M. Keynes' (1930, pp. 3-5) is one such analysis, for it states that 'MONEY-OF-ACCOUNT ... is the primary concept of a Theory of Money'. Keynes was influenced by the 'Chartalist' (or state) theory of money, developed to its highest form in the twentieth century by Georg Friedrich Knapp (1923), for whom the unit account function of money is also of prime importance to money's use as a means of payment. The Chartalist

theory has recently been revived in modern economics (see, e.g., Wray, 1998; 2012). Aristotle, as argued above, holds that the unit of measure – currency – is stipulated by agreement (*by hypothesis*).

In contrast to Aristotle's account on currency in the *Nicomanchean Ethics*, the account he offers in Book I of the *Politics* focuses on the origins of money in the context of long-distance trade. The explanation of money in the *Politics* makes no reference to justice but instead to convenience: currency overcomes the obstacles to exchange when the latter is conducted as barter. This account seems to align itself more closely to the orthodox economic position that money arises in the context of market exchange, whereby a particularly 'saleable' commodity becomes the dominant medium of exchange (cf. Menger, 1871). Aristotle might then be held to have two theories on the origin of money. One might hold these views to be mutually incompatible, but before one ascribes inconsistency to Aristotle, one should note two things. First, his analysis of currency follows a tradition in Greek thought which divides exchange *within* the political community (the subject of the *Nicomachean Ethics*) from *external* exchange or long-distance trade between different communities (the subject of the *Politics*).

In Homer's *Iliad* and *Odyssey*, long-distance trade (*emporia*) is well attested, with the Phoenicians being its main purveyors. Trade amongst Greeks who inhabit different political communities, or amongst Greeks living in the same political community, is, on the other hand, scarcely attested in Homer (Peacock, 2011). Hesiod's *Works and Days* follows a similar pattern, whereby trade within the community of Ascra is not attested, though Hesiod has much advice for the long-distance trader. The distinction between the internal and external movement of goods stretches its tentacles into the classical period in which Plato and Aristotle wrote (fourth century BCE). It is reflected in the distinction in terminology for 'retail traders' (*kapēloi*), who hawk their goods within the political community, and long-distance traders (*emporoi*) (Peacock, 2016). Aristotle can be placed into this tradition of ancient Greek thought. In the *Ethics*, Aristotle is concerned with justice in the context of intra-community exchange, for the cohesion of the community depends thereon. But justice is not a concern in the context of long-distance trade.

There is thus a decisive difference between the two types of exchange – intra-community and long-distance. One may even say that Aristotle's two discussion of money do not pertain to the same thing. To support this argument, the types of exchange to which Aristotle refers will be examined; for whereas long-distance trade (as discussed in the *Politics*) answers to the name of commerce, the exchange which forms the context for the discussion of currency in the *Nicomachean Ethics* is not so easily subsumed under the heading of commercial activity. One can provide support for this statement by considering the terminology with which Aristotle describes 'exchange'.

There are numerous terms, all used in Book V of *Nic. Eth.*, which can be (and are) translated as 'exchange': *allaktikais* (*Nic. Eth.*, 1132b32), *metadosis* (*Nic. Eth.*, 1133a2), *antidosin* (*Nic. Eth.*, 1133a6), *metadidonai* (*Nic. Eth.*, 1133a10), *allagē* (*Nic. Eth.*, 1132b13, 1133a19, 24, 28, 1133b11, 15, 17, 26). Let us investigate the connotation of these terms to descry the extension of what we ascribe to Aristotle with the term 'exchange'.

The first, *allaktikais*, refers not only to commercial exchange but also to the exchange of gifts (cf. Plato's *Sophist*, 223c). Gift exchange was both a Mycenaean and an archaic (Homeric) practice amongst the Greek élite, and there are good reasons for holding that the aim of the practice was not the making of profit at the expense of one's gift-exchanging partners. Rather, gift exchange was a method of conducting 'foreign policy' (Donlan, 1982, p. 149), whereby the leader of a wealthy estate (*oikos*) cemented friendly and peaceful relations with others who might live at some distance. This is not market exchange as understood in contemporary or ancient societies.

The second term with which Aristotle describes exchange is *metadosis*. The term is used three times in the *Politics*. In one instance it describes pre-monetary exchange (barter) between independent families or peoples (1257a24). A second instance comes in the context of a comparison between a true political community and an 'alliance' (*summachia*): people who live in proximity to one another and regulate their doings in a way that prevents wrongdoing in their exchanges (*metadoseis*) would not, Aristotle insists, constitute a political community (*Pol.*, 1280b18-24). Aristotle continues:

> Let us suppose that one man is a carpenter, another a farmer, another a shoemaker, and so on, and that their number is ten thousand: nevertheless if they have nothing in common but exchange, alliance, and the like, that would not constitute a state (*polis*).

A *polis*, Aristotle writes, does not consist merely in people sharing a common place with the purpose of avoiding mutual harm and for the sake of exchanging goods; rather a *polis* is a community of families which exists for the sake of complete and self-sufficient life (*Pol.*, 1280b30-31). The passage applies to the exchangers Aristotle describes in *Nic. Eth.* who are not mere exchangers of goods looking out only for their own interest in their transactions, for if they were, they would constitute only an alliance of people. To constitute a *polis* presupposes friendship between them and the aim of a good and happy life (*Pol.*, 1280b38-1281a1). This conception of the *polis* will occupy us again presently, but first we must attend to Aristotle's terms for exchange. *Metadosis*, in the sections of the *Politics* just cited, clearly refers to mercantile affairs. Does this imply that his use of *metadosis* at *Nic. Eth.* (1133a2) likewise refers to commercial exchange? The answer is 'no', and that for the following reasons:

i) *Metadosis* may include mercantile exchange but it is not limited to its sense of commerce. Elsewhere (*Pol.* 1321a26), Aristotle uses the term in the sense of allowing a share in something (specifically, allowing the people a share in the running of government). [12]

ii) In *Nic. Eth.* (Book V), in which *metadosis* is used, Aristotle refers to the grouping in which exchangers are held together. The group is not an 'alliance', in the sense just described, but a community (*koinonia*) or a *polis*. This implies that the sense of exchange to which he refers with the word *metadosis* stretches beyond commercial exchange, for *Nic. Eth.* is not concerned with mere alliances but with communities based on friendship which exist for the purpose of pursuing a good and happy life.

Taking (i) and (ii) together, we may hypothesise that Aristotle's use of *metadosis* in *Nic. Eth.* takes on the broad meaning of sharing rather than the narrow meaning of commercial exchange. This can be appreciated better if we consider

the context of Aristotle's use of *metadosin*.

Immediately after Aristotle uses the term *metadosis*, he adds the following comment, one of the least analysed in his remarks on exchange:

> that is why they make a temple of the Graces prominent, so that there will be a return of benefits received. For this is what is special to grace; when someone has been gracious to us, we must do a service for him in return (*Nic. Eth.* 1133a2-5).

The three Graces (*Charites*) were goddesses whose name is derived from the ancient Greek word for grace (χάρις), which designates a type of pleasure of benefit. *Charis* signifies a convention of reciprocity, whereby the receipt of a favour or benefaction is to be reciprocated (MacLachlan, 1993, chapter 1). Commentators often relate *charis* to the sort of reciprocity involved in gift exchange (MacLachlan, 1993; Wilkinson, 2013). One of few commentators to have treated this allusion to the Graces in detail and to have integrated it into the analysis of justice in exchange is Robert Gallagher (forthcoming), who offers an ingenious analysis to the equalisation involved in exchange, as Aristotle perceives it. The reader is referred to Gallagher's essay, but here it is merely noted that Gallagher's analysis coheres with that of the present essay, for Gallagher's solution to the riddle of proportionate reciprocity in exchange implies that 'Aristotle reaches outside the realm of the material to social goods to complete the transaction' (p. 13). That is, Aristotle's understanding of exchange (here, *metadosin*) is not to be understood as market exchange in the conventional modern sense. The reason for this is that exchange between members of the same community should involve reciprocity between the exchangers which is not accomplished if one considers only the value of the products they are to exchange.

Antidosin is the next term for exchange to be considered. It is used but once in *Nic. Eth.*, Book V. The term has a technical sense in Athenian law (Christ 1990), the context for which concerns the public benefactions or liturgies which the wealthiest Athenians were obliged to make for the benefit of the *polis*. Aristotle is not adverting to this sense in *Nic. Eth. Metadidonai* (1133a10) is

another term which refers to exchange. It is used not only in *Nic. Eth.*, Book V, but also during the discussion of friendship. Like *metadosis*, *metadidonai* connotes sharing. At *Nic. Eth.* 1171b, it refers to sharing of one's bad fortune with friends, whilst at 1177a8-9, it is used to convey the idea that a slave does not share (partake) in happiness. Again, a purely mercantile meaning cannot be ascribed to the term, and this counsels a look beyond what is conventionally considered to be market exchange when we interpret Aristotle.

The final term for exchange, *allagē(s)*, stems from the verb *allassō* (to change, alter) and is the word Aristotle most frequently uses for exchange in *Nic. Eth.* It refers to the exchange of goods (as in Plato's *Republic* 371b), and Aristotle uses it at *Nic. Eth.* 1132b13 to explain the concepts of loss (*zēmia*) and profit (*kerdos*). Aristotle also uses the term to describe barter in the *Politics* (1257a13,19) as well as to describe the exchanges between allies who do not live in one and the same *polis* (as described above in the elucidation of Aristotle's term *metadosis*). The verb ἀλλάσσω is the term which most closely approximates what we understand by market exchange, though, in *Nic. Eth.*, in contrast to *Politics* (Book I) and Plato's *Republic*, Aristotle avoids standard words for trade/trader (*emporia*/*emporos*), retail/retailer (*kapēlikē*/*kapēlos*), buying (*ōneomai*) and selling (*pōleō*), and 'clings to the neutral word 'exchange", thus avoiding the connotation of commercial or market exchange (Finley, 1970, p. 14). This choice of words would be that of one who aims to show that exchange is (or should be) embedded in the rules of communal justice (Finley, 1970, p. 8).

The foregoing discussion of exchange highlights the capacious understanding of exchange which Aristotle treats. Part of the difficulty in interpreting Book V of the *Ethics* arises when one assumes that 'exchange', for Aristotle, corresponds to what one commonly understands by market exchange. In particular, the analysis of his terminology reveals the non-commercial senses of the term as used in *Nic. Eth.*. Had Aristotle wished to focus on purely 'economic' exchange, a different terminology stood at Aristotle's disposal. Édouard Will (1954, p. 218) concurs with Gallagher (cited above) when he writes that exchange in *Nic. Eth.* 'is situated within a more comprehensive scheme of social ethics' than reference to commercial exchange would imply. Sitta von Reden (2003, p. 185) echoes the point when she states that Aristotle's pronouncements in *Nic. Eth.* are 'clearly

not statements on justice in the market place, but on justice in the social interaction between citizens'. Included in this social interaction is exchange in the sense of redistribution between citizens, and redistribution occurs, *inter alia*, in the realm of benefactions (liturgies) by the wealthy to communal activities and goals. Currency, as observed above, is essential in making items exchanged commensurable and hence in ensuring justice in exchange. But in light of this, it becomes clear that if a function of currency is to be singled out to be of particular import to Aristotle, it is that of a means of payment, whereby payment is to be understood far more broadly than payment in market exchange.

Endnotes

[1] 'convention, *n.* 9a', *OED* Online. June 2013 (Oxford 2013) emphasis added, ‹http://www.oed.com.ezproxy.library.yorku.ca/view/Entry/40714?redirectedFrom=convention›.

[2] I base translations of ancient Greek works on the translations given in the bibliography. Where I modify them, I have used the Greek versions available on the Perseus Digital Library: http://www.perseus.tufts.edu/hopper.

[3] Translating χρεία as 'need' rather than 'demand' is argued for particularly well by Judson (1997, pp. 158-160), though see Danzig (2000, pp. 414-415).

[4] See Wolfsdorf (2008) for further usages.

[5] Many commentators identify *hypotheses* with existential statements (McKirahan, 1992, p. 43; Gómez-Lobo, 1976-77, p. 436). Aristotle is not consistent in applying the existential definition, as McKirahan (1992, p. 47) concedes; see also Barnes (1975, pp. 103-104) and Robinson (1953, pp. 100-103).

[6] I draw on Strobach's (2001, pp. 252-253) interpretation in what follows.

[7] Alexander of Aphrodisias supplies a proof of the first proposition in his commentary on the *Prior Analytics* (386, 31-6)

[8] See Leszl (1981, p. 293). Also Robinson (1953, pp. 94-95, 105) for whom 'positing' (*τίθημι*) 'is deliberate in that it is consciously doing something which we need not do'.

[9] Uses of 'agreement' to translate *ἐξ ὑποθέσεως* include the English translations of *Nic. Eth.* by Chase (1911), Crisp (2000), Rackham (1934), Ross rev. Brown (2009), Rowe (2002), Thomson (1976) and Welldon (1927). German translations likewise prefer the 'agreement' (*Übereinkunft*) translation, e.g. Rieckher (1856), Rolfes (1911), Stahr (1897), as do some Spanish translations which use the term 'acuerdo', e.g. Bonet (1985), Araujo and Marias (1970). 'Stipulation' or 'posit' is used by Apostle (1984) and Irwin (1985), and 'presupposition' by Bartlett and Collins (2011) as well as by Gigon (1967) who uses the term *Voraussetzung*. 'By arbitrary usage' comes from Ostwald's translation.

Those who use 'convention' include the English translators Peters (1909) and Warrington (1963) and the French translators Gauthier and Jolif (1970), Tricot (1990) and Voilquin (1961). Less common are translations which use the term 'hypothesis', e.g. Bodéüs (1990) – 'fixée par hypothèse' – and Natali (1999) – 'per ipotesi'. Natali, acknowledges the awkwardness of using 'hypothesis' ('[i]ln genera si traduce *ex hupotheseos* con 'per convenzione") but defends the translation on etymological grounds.

[10] For 'convention', the reader is referred to translations by Apostle, Araujo and Marias, Bodéüs, Bonet, Crisp, Gauthier and Jolif, Irwin, Peters, Rackham, Ross, Rowe, Thomson, Voilquin and Warrington. For 'agreement', see Bartlett and Collins, Chase, Gigon, Natali, Ostwald, Rolfes and Stahr.

[11] See also *Pol.* (1275a10); [*Const. Ath.*] (LIX.6); de Ste. Croix (2004, pp. 328-329). Plato uses the term *συνθήκη* in the sense of 'collusion' (*Laws*, 879a).

[12] Xenophon (*Cyr*: 8.2.2) uses *metadosis* in this sense when he describes one of Cyrus' methods of increasing his popularity, namely, giving a share (*μετάδοσις*) of food and drink to others. Robert Gallagher (forthcoming) translates *metadosis*, as it is used in the *Nic. Eth.* as 'giving-of-a-share' in order to denote

the particular type of reciprocity which Aristotle has in mind in his discussion of justice in exchange.

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