Innovation and Conceptual Innovation in Ancient Greece

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Abstract

The study of political thought and the history of political ideas are concerned with concepts such as sovereignty, liberty, virtue, republic, democracy, constitution, state and revolution. "Innovation" is not part of this vocabulary. Yet, innovation is a political concept, first of all in the sense that it is a preoccupation of statesmen for centuries: innovation is regulated by Kings, forbidden by law and punished. Advice books and books of courtier support this understanding and include instructions to the Prince not to innovate. At the same time, political writers and pamphleteers from the Reformation onward use innovation as a linguistic weapon against their enemy.

This paper studies the emergence of innovation as a political and contested concept. It documents the origin of the idea of innovation in Ancient Greece. Greek philosophers and historians coined various words for innovation – one of which, *kainotomia*, has a long run usage and is still use in Greece –, filled them with a specific meaning (political change of a revolutionary kind), and used them for a derogatory purpose, thus giving rise to a concept that has remained within our vocabulary since then.

The Athenians are addicted to innovation, and their designs are characterized by swiftness alike in conception and execution (Thucydides, *The Peloponnesian War*, I, 70, 2).

Innovation and Conceptual Innovation in Ancient Greece [1]

Introduction

When the Greek physician Galen (129-199 AD), in *On the Natural Faculties*, attributed to Prodicus an "innovation" in nomenclature for having changed *phlegma* to *blenna* (mucus), he was without doubt one of the few ancient writers using innovation in a positive sense. To be sure, novelty was everywhere and was defended by several authors in Greece and Rome. Novelty in pleasure (arts) and knowledge (science) is accepted, because or if it does not change the divine or natural order of things, so it is presumed. However, innovation is not accepted under any circumstances. It is considered subversive.

Things have changed considerably over the intervening two thousand years. In his book *The Idea of Progress in Antiquity*, Ludwig Edelstein suggests that "ideas themselves, once they are formulated, have a life of their own" (Edelstein, 1967: xxvii). This is certainly true of innovation. Today innovation has become a buzzword, particularly in economics (technology) and policy matters. To paraphrase John Pocock on revolution: "the term [innovation] may soon cease to be current, emptied of all meaning by constant overuse" (Pocock, 1971: 3).

This has not always been the case. For centuries innovation was a concept with a very specific meaning. To be sure, innovation remained rarely used as a concept and not theorized about until the twentieth century. But it did carry a definite and quite pejorative meaning. When the concept acquired some popularity after the Reformation, it was still used in a pejorative sense. The positive meaning, together with the overuse of the

[1] I owe a considerable debt to Pierre Lucier (Chaire Fernand Dumont sur la culture, INRS). Without Pierre's knowledge of the Greek language – and much more – I could not have written this paper. Special thanks to Gerald Barnett, Joseph Lane, Manfred Moldaschl and Apostolos Spanos for commenting on a first draft of this paper.

concept, is a very recent phenomenon, dating mainly from the last sixty years (Godin, 2012a).

The concept of innovation is of Greek origin (καινοτομία; kainotomia), from the fifth century BC. The word is derived from *καινός* (kainos; new). Initially, καινοτομία had nothing to do with our current or dominant meaning of innovation as commercialized technical invention. Innovation meant "cutting fresh into". It was used in the context of abstract thinking ("making new") as well as concrete thinking ("opening new mines"). Innovation acquired its current meaning as a metaphorical use of this word. In the hands of ancient philosophers and writers on political constitutions, innovation is "introducing change to the established order". What is in this original meaning of the word that may have contributed to the contested meaning which has persisted until recently?

This paper is a study on the origins of thoughts on innovation. It looks at where the word innovation comes from and what the concept meant to the Ancients. The paper is concerned with Greek writers – a second paper will look at the Romans. Four Greek authors are studied: Xenophon, Plato, Aristotle and Polybius (see Appendix), for it is they who produced early uses of innovation as a concept. As conceptual innovators, these authors coined various words for innovation – one of which, καινοτομία, has a long run usage and is still used in Greece –, filled them with specific meanings, and used them for a derogatory purpose, thus giving rise to a concept that has remained within our vocabulary since then.

The paper is organized as follows. It starts by documenting the first full-length discussion of innovation, that of Xenophon. Xenophon's use of innovation is literal and the philosopher talks of innovation in a positive way. Yet, among later Greek writers, innovation is used in a metaphorical sense and the meaning is essentially pejorative. To document the case, the use of innovation in Plato, Aristotle and Polybius and the contribution each made to the concept is studied. The paper concludes with thoughts on these authors as (conceptual) innovators: coining new words, changing the

meanings of words and using words in new ways in different contexts: political economy, culture, politics and history.

A note on issues of translation. There is often 'language inflation' in translated works. One Greek author may have made no use of innovation, yet translators use the word nevertheless. This is often the case in seventeenth century England (for Greek as well as Roman writers). A translator may deliberately aim to stress innovation (in a pejorative way), because of the context of his time. On the other hand, and far more frequently, in the twentieth century innovation is also translated into English using other words, like revolution, or is not translated or used at all. In fact, a translator has no interest in innovation *per se*. He does not feel it necessary to keep and translate the word literally. He rather works with the context of the text and uses whatever word seems appropriate to him. In conducting intellectual history, one then has to start with the Greek edition. Second, he needs to check translations against each other. I have used both old (e.g. Loeb Classical Library) and more recent translations, and I have cited the texts which translate the word literally, if they exist at all or, if not, I have translated the Greek word as innovation myself (and placed the translator's word in brackets).

Xenophon: Innovation and Political Economy

Philosopher and historian Xenophon (430-355 BC) is known mainly for his works on the history of his times. By contrast, *Ways and Means*, his last work, is a work on 'political economy' addressed to Athens' Council of Five Hundred and intended to raise revenues for the city. Athens had just emerged from war in a disastrous financial situation. Xenophon's plan is to raise capital with an income tax to be expended on erecting facilities for merchants and visitors (accommodations and hotels) and on a fleet of state-owned merchant vessels.

Xenophon's many works have attracted philosophers writing on political constitutions, including Aristotle and Polybius (but not Plato). Yet, it is difficult to trace the real impact of a writer at the time. *Ways and Means* is considered by today's philosophers a "minor"

work in Xenophon's output. Such a work is studied rarely today, if ever. However, for the purpose of this paper it is an important work, for it contains the earliest step in the genealogy of innovation as a concept. In a chapter on mines, Xenophon uses innovation in a sense totally foreign to us. It is a metaphoric usage of this word that one finds among later Greek philosophers.

To Xenophon, Athens had ample resources. The city was a commercial center and had land, sea and, above all, resident aliens, "one of the best sources of revenue" (II, 1). Merchants and ship owners came and went to Athens. They rendered many services and paid taxes. Xenophon suggests that foreigners be offered some advantages in order that they "look on us as friends and hasten to visit us" (III, 4): seats in theatres, lodging and places of exchange (markets). Such facilities would contribute to expanding imports and exports, sales and rents. They "would be an ornament to the State and at the same time the source of considerable revenue" (III, 14). Xenophon goes as far as to suggest that Athens acquire a fleet of public merchant vessels and lease them, like other public property.

Next, Xenophon turns to silver mines and how, if properly managed, they could be a source of revenue too. Here, Xenophon claims to offer something entirely new. To Xenophon, there are few mining projects because the country is short of labour (IV, 5). Yet silver is in strong demand for arms, household implements and jewelry. Xenophon's proposal, the one and only innovation as he takes care to add – he does not use the word innovation to this end (**"**were my proposals adopted, the only novelty [καινόν*:* kainon], would be that …**"**) – Xenophon's proposal is that the State possess public slaves, as private individuals do, and make them available for hire to entrepreneurs in the mines (IV, 17). This would raise revenues for the State and contribute to developing business. At IV, 27-30 Xenophon develops the rationale for his innovation as follows:

> Why, it may be asked, are fewer new cuttings [mine galleries] made nowadays than formerly? Simply because those interested in the mines are poorer … A man who makes a new cutting incurs a serious risk ... [and] people nowadays are very chary of taking such a risk.

> However, I think I can meet this difficulty too, and suggest something good [a plan] that will make the opening of new cuttings a perfectly safe undertaking.

Xenophon thinks here of private individuals combining and pooling their fortunes in order to diminish risks (IV, 31) and, as said above, involving the State in such affairs.

All in all, to Xenophon the "scheme" would provide abundant revenue and make the city strong, with people happy and more physically trained, more obedient, better disciplined and more efficient (IV, 49-52). "We shall be regarded with more affection by the Greeks, shall live in greater security, and be more glorious", and "we may come to see our city secure and prosperous" (VI, 1).

Where is innovation in this argument? To Xenophon, innovation (καινοτομία) is "making new cuttings". The word is a combination of *καινός* (new) and the radical τομ (cut; cutting). [2] In Xenophon's case, it means opening new galleries. To others writers, as we will see below: opening new avenues, particularly new political dispositions. At one place Xenophon uses καινοτομία metaphorically, but still within a 'concrete' (physical) connotation: "opening new veins" (IV, 27).

Xenophon is one of the (very few) writers to use καινοτομία before Plato and Aristotle – at least according to ancient texts we possess that document the case. Before him, Aristophanes used the word too, in a metaphorical sense, in two comedies. [3] In *Wasps* (875), a person addresses a prayer to God, which he says he is doing for the first time:

> Oh! Powerful god, Apollo Aguieus, who watchest at the door of my entrance hall, accept this **innovation** [fresh sacrifice]; I offer it that you may deign to soften my father's excessive severity; he is as hard as iron, his heart is like sour wine; do thou pour into it a little honey. Let him become gentle toward other men, let him take more interest in the accused than in the accusers, may he allow himself to be softened by entreaties; calm his acrid humour and deprive his irritable mind of all sting.

[2] "Cutting one's way forward" (προκοπή), a word from the Hellenistic period, became "progress" in Latinized form (Edelstein, 1967: 146).

[3] A third comedy (*Clouds*) is concerned with the issue of Old versus New underlying conflicts in philosophy (and culture). But Aristophanes does not use the word innovation in this comedy.

In *Ecclesiazusae* (583), Blepyrus responds to Praxagora's fear that the participants in trials may be afraid of a new way of administering justice. Blepyrus replies that innovation is better than any other principle:

> Praxagora: I believe my ideas are good, but what I fear is that the public will cling to the old customs and refuse to accept my **innovations** [reforms].
>
> Blepyrus: Have no fear about that. Love of **innovation** [novelty] and disdain for traditions, these are the dominating principles among us.

What distinguishes Xenophon from Aristophanes is an entire discourse on innovation and a consciousness of innovating. Three characteristics of Xenophon's representation of innovation deserve mention. First, Xenophon's "making new cuttings" refers to the new literally. Nothing peculiar here. Second, and here is the main point, this newness concerns the State. Xenophon's proposal is a "scheme" or "project" (a plan of action) as he calls it – κατασκευή (kataskeue) – and his scheme is political. Such a scheme is, considering the context of the time, dangerous or risky as Xenophon put it: κίνδυνος (kindunos). The 'political economist' proposes that the State itself take risks. In fact, to counter the opposition to or fear of the risky proposal, among other things, Xenophon explicitly suggests gradualism: the introduction of the proposal should "proceed gradually [rather] than to do everything at once" (IV, 36), a *motto* regularly echoed in Plato and Aristotle too, and many others thereafter.

Xenophon's representation would be picked up by later writers, and would define innovation for centuries to come. Political change (risky) and (revolutionary) schemes became key connotations to or meanings of innovation. From then on, innovation shifted to take on a pejorative meaning: 'introducing change to the established order'. New ideas and altering laws are "very risky" and may lead to "constitutional upheavals", claimed Aristotle in *Politics* (II, viii, 1268b). While both Xenophon and Aristophanes use καινοτομία in a positive sense, the word becomes pejorative among later philosophers. Xenophon's καινοτομία as 'revolutionary' in the sense of radically different is changed to revolutionary in the sense of subversive.

A word of caution is necessary here. As the texts analyzed in the following sections show, innovation (as well as change) is often translated as revolution. In fact, the context may dictate such a meaning, but in general innovation means political change (with a 'revolutionary' connotation perhaps) but not revolution. The word revolution did not exist at the time (it is of Latin origin). Instead, the words commonly used were troubles, tumult, revolt, rebellion and sedition (Koselleck, 1969; Richter, 1995: 42-43). Be that as it may, the obsession with 'revolutionary' change was discussed using many different words at the time, including καινοτομία: change (μεταβολή: metabole), sedition (Στάσις: stasis), overthrow and the like (Λύειν: luein; Φθείρειν: phtheirein; Κινεῖν: kinein). Such was Plato's and Aristotle's vocabulary.

Plato: Innovation and Culture

In *The Republic*, Plato accepts only one slight change to constitutions: that philosophers become King (and Kings become philosophers) and rule the state. The fault in constitutions of existing states is that no philosophers rule (V, 473d):

> There will be no end to the troubles of states, or indeed, my dear Glaucon, of humanity itself, till philosophers become kings in this world, or till those we now call kings and rulers really and truly become philosophers, and political power and philosophy thus come into the same hands.

Book VIII is entirely concerned with the process of change or degeneration ("all created things must decay", VIII, 546a), from Plato's ideal state (discussed at length in chapter VII) to imperfect states. Plato describes each political state or constitution one after another, with the character of the ruler and the causes of decline:

Timarchy → Oligarchy → Democracy → Tyranny

One has to turn to a later work to document the use of καινοτομία in Plato. In *Laws*, Plato discusses καινοτομία, using the word as such. He has only one good word for innovation: chances and accidents (calamities, diseases and wars), not men, make laws and "often

force on **innovations**" [revolutions] (IV, 709a). At that very moment, men use their "skills" to "seize any favorable opportunity" (IV, 709c).

Plato even denies innovating himself – or minimizes his innovation (IV, 715c-715d):

> Those who are termed 'magistrates' I have now called them 'ministers' of the laws, not for the sake of **innovating** ["coining a new phrase"] but in the belief that salvation, or ruin, for a State hangs upon nothing so much as this. For wherever in a State the law is subservient and impotent, over that State I see ruin impending; but wherever the law is lord over the magistrates, and the magistrates are servants to the law, there I descry salvation and all the blessings that the gods bestow on States.

Plato's discussion of innovation is related to 'culture' (education, customs). [4] He refuses innovation in education, for it gives rise to social instability, that is, demands for new institutions and laws (VII, 796c-800a). In contrast, "When the programme of games is prescribed and secures that the same children always play the same games and delight in the same toys in the same way and under the same conditions, it allows the real and serious laws also to remain undisturbed; but when these games vary and suffer **innovations** … [children] have no fixed and acknowledged standard of propriety and impropriety" (VII, 797b).

Plato's argument is threefold. First, people love innovation. Children "hold in special honour he who is always **innovating** or introducing some novel device". But "the biggest menace that can ever afflict a state" is changing "quietly the character of the young by making them despise old things and value novelty". Change "except in something evil [or humorous amusements like comedy] is extremely dangerous" (VII, 797b).

Second, innovation leads to political instability. "If children **innovate** [νεωτερίζειν] [5] in their games, they'll inevitably turn out to be quite different people from the previous

[4] To the Greeks, παιδεία (paideia) is culture through education (the shaping of physical and intellectual character) (Jaeger, 1939). Here I use the word in its anthropological sense and including customs too.
[5] More on this word later.

generation; being different, they'll demand a different kind of life, and that will then make them want new institutions and laws" (VII, 798c).

Third, there is need to contain or control innovation (VII, 798b):

> When the laws under which people are brought up have by some heaven-sent good fortune remained unchanged over a very long period, so that no one remembers or has heard of things ever being any different, the soul is filled with such respect for tradition that it shrinks from meddling with it in any way. Somehow or other the legislator must find a method of bringing about this situation in the state.

What holds for games holds for music and dance too. "We must do everything we possibly can to distract the younger generation from wanting to try their hand at presenting new subjects, either in dance or song". Plato argues for laws on "natural correctness" to counter "the tendency of pleasure and pain to indulge constantly in fresh music" (II, 657b). To Plato, the Egyptians have developed good laws to this end: drawing a calendar of festivals and authorizing certain songs and dances (VII, 799a-b; II, 656c-57b). The Egyptians have also "forbidden to painters and all other producers of postures and representations to introduce any **innovation** … over and above the traditional forms" (II, 656e). Plato recommends that "no one shall sing a note, or perform any dance-movement, other than those in the canon of public songs, sacred music, and the general body of chorus performances of the young – any more than he would violate any other 'norm' or law … If he disobeys, the Guardians of the Laws and the priests and priestesses must punish him" (VII, 800a).

Together with games and music, a third area in need of control is foreign customs. "The intermixture of States with States naturally results in a blending of characters of every kind, as strangers import among strangers **innovations**" [novel customs] (XII, 950a). Strangers are most welcomed, unless they bring in innovations in the city: magistrates "shall have a care lest any such strangers introduce any **innovation**" (νεωτερίζειν) (XII, 953a).

Aristotle: Innovation and Politics

According to Aristotle, no one had innovated more than Plato on communism. In *Politics* Aristotle writes: "nobody else has introduced the **innovation** of community of children and women, nor that of public meals for the women" (II, iv, 1266a). To Aristotle, communal property brings disputes because of the unequal contribution of each individual. The present system of property (private, with common use) is better, if properly regulated. It is a matter of habit and it is controlled by sound laws (II, v, 1263a).

To Aristotle, another innovator criticized by name is the architect Hippodamus because of his view, among others, that "honour ought to be awarded to those who invent" or discover some advantages to the country (II, viii, 1268b). To Aristotle, "It is [always] possible for people to bring in proposals for abrogating the laws or the constitution on the ground that such proposals are for the public good" (II, viii, 1268b). However, only ambition drives Hippodamus: "always to be different from other people". To Aristotle, the lesson is clear: "Since men introduce **innovations** [νεωτερίζειν] for reasons connected with their private lives [modes of living], an authority ought to be set up to exercise supervision over those whose activities are not in keeping with the interests of the constitution" (V, viii, 1308b).

Aristotle's concern with innovation is political change. While Plato discusses innovation in its relation to culture, Aristotle focuses on politics. To be sure, Plato is concerned with cultural change because politics governs everything, including culture. However, Aristotle explicitly looks at political change. As is well-known, to this philosopher there are three "right" constitutions (kingship, aristocracy, and polity) and three "deviations" (παρέκβασις*;* parekbasis) (tyranny, oligarchy and democracy). Aristotle is interested in studying which processes "destroy constitutions, and which are those that keep them stable" (μένειν*;* menein) (IV, ii, 1289b). The source of variety is the diversity of social and economic conditions or wealth (property) and freedom of the people. As a consequence, Aristotle's polity is a mixture of oligarchy and democracy. This mixture is the best because it is stable. It is free of factions like rich and poor (V, xi).

Large parts of *Politics* are concerned with regulating political change. [6] To be sure, some change in societies is desirable. Immediately following the discussion of Hippodamus' idea, Aristotle suggests, "A case could be made out in favour of change. At any rate if we look at the other sciences, it has definitely been beneficial – witness the changes in traditional methods of medicine and physical training, and generally in every skill and faculty" (II, viii, 1268b). By contrast, in politics most good changes have already been made: "All possible forms of organization have now been discovered. If another form of organization was really good it would have been discovered already" (II, v, 1264a). [7] More change would only be for the worse (II, viii, 1269a):

> There are some occasions that call for change and there are some laws which need to be changed. But looking at it in another way we must say that there will be need of the very greatest caution. In a particular case we may have to weigh a very small improvement against the danger of getting accustomed to casual abrogation of the laws (…). There is a difference between altering a craft and altering a law (…). [It] takes a long time [for a law] to become effective. Hence easy change from established laws to new laws means weakening the power of the law.

Book V discusses changes in constitutions and contains Aristotle's thoughts on the "causes that give rise to 'revolution' in the constitutions of states and to party factions". Aristotle makes an important distinction that would persist for centuries to come: radical change (revolution) *versus* gradual change, and the dialectics between the two. He stresses the fact that, like time, 'revolution' develops slowly, little by little. Change grows imperceptibly over a long period of time – a *motto* found in many others of Aristotle's writings, and used regularly as an argument against innovation from the Reformation until the nineteenth century. 'Revolution' or faction (στάσις; stasis) arises from "small matters": "the false step is at the beginning, but well begun is half done, as the proverb

[6] "What is needed is the introduction of a system which the people involved will be easily persuaded to accept, and will easily be able to bring in, starting from the system they already have. It is no less difficult task to put a constitution back on its feet than to create one from the start" (*Politics*, IV, I, 1288b).

[7] Aristotle makes a similar statement later in the work: institutions "have been in the course of all ages discovered many times over, or rather infinitely often (…). Thus we ought to make full use of what has already been discovered while endeavouring to find what has not" (*Politics*, VII, x, 1329b)

says, so that a small error at the start is equivalent in the same proportion to those of the later stages" (V, iv, 1303b). It has an effect on the whole state: "A change so gradual as to be imperceptible (…). It very often happens that a considerable change in a country's customs takes place imperceptibly, each little change slipping by unnoticed" (V, iii, 1303a). Aristotle repeats the description elsewhere as follows: "The change occurring either quickly or gradually and little by little, without being realized" (V, vii, 1306b).

Aristotle bases his argument on gradualism on two analogies. One is to nature (time), as seen above. Francis Bacon offered this same analogy in his essay *Of Innovation* in the early seventeenth century. The other analogy is to men's expenditures (V, viii, 1307b):

> It is essential in particular to guard against the insignificant breach. Illegality creeps in unobserved; it is like small items of expenditure which when oft repeated make away with a man's possessions. The spending goes unnoticed because the money is not spent all at once, and this is just what leads the mind astray (…). One precaution to be taken, then, is in regard to the beginning.

Aristotle applies the analogy to leaders in oligarchies whose extravagant mode of living "bring[s] about **innovation**" [new state of affairs] (V, vi, 1305b) – the same leaders also "stir up **innovations**" because they lose their wealth (V, xii, 1316b). The lesson is clear:

> Even a small thing may cause changes. If for example people abandon some small feature of their constitution, next time they will with an easier mind tamper with some other and slightly more important feature, until in the end they tamper with the whole structure (…). The whole set up of the constitution [is] altered and it passed into the hands of the power-group that had started the process of **innovation**" (νεωτερίζειν).

How may constitutions be preserved then? Stability is the answer: nothing should be done contrary to the laws and changes should be gradual, as time is. To counter innovation, among others, Aristotle offers some advice (V, viii-ix), among them:

- Avoid extremes (principle of the middle way).
- Do not "augment the power [honour] of any one man out of proportion", that is "That no person becomes pre-eminent" (V, viii, 1308b).

- "Exceptional prosperity in one section of the state is to be guarded against" (V, viii, 1308b).
- "Ensure that the number of those who wish the constitution to be maintained is greater than that of those who do not" (V, ix, 1309b).
- "Treat each other in a democratic spirit, that it to say, on an equal footing" (V, viii, 1308a).
- Set up an authority for control (V, viii, 1308b).

Καινοτομία is a word little used among Greek writers, including Aristotle. In fact, it shares the place in the vocabulary with another, more widespread word: νεωτερισμός (neoterismos). [8] Today we have many words to talk about innovation: change, mutation, revolution, etc. Similarly, καινοτομία is one and only one of the words the ancient Greeks had to talk about innovation. Νεωτερισμός was another.

What distinguishes νεωτερισμός from καινοτομία? In the beginning καινοτομία may have been used to stress the subversive aspect of innovation, but νεωτερισμός does so too. Both words are used in a political context, or used by writers on politics (philosophy and history). [9] I have mentioned already that Plato made no use of καινοτομία (and καινοτομέω) in *The Republic*. Yet, he does use the verb νεωτερίζειν (neoterizein), once on education [10] using an argument for gradualism, [11] and another time on democratic leaders. [12] Similarly, in *Laws*, Plato uses this word twice, on education and on foreign customs (see p. 12 and 13 above).

[8] Most writers who use νεωτερισμός do not make use of καινοτομία.
[9] Καινοτομία is not used in 'scientific' works. For example, Aristotle praises novelty in fields which give pleasure (like literature) and in science and arts, but he does not use καινοτομία for this purpose.
[10] "The overseers of our state must cleave and be watchful … against **innovations** in music and gymnastics counter to the established order". New songs are allowed but not "new way of song". "A change to a new type of music is something to beware of as a hazard of all our fortunes". "The modes of music are never disturbed without unsettling of the most fundamental political and social conventions" (*The Republic*, IV.424b).
[11] Such a kind of "lawlessness that easily insinuates itself unobserved …By gradual infiltration it softly overflows upon the characters and pursuits of men … and proceeds against the laws and the constitution … till finally it overthrows all things public and private". "In the beginning, our youth must join in a more law-abiding play, since, if play grows lawless and the children likewise, it is impossible that they should grow up to be men of serious temper and lawful spirit" (*The Republic*, IV.424b).
[12] The heads of the people (particularly the farmers) in a democratic assembly would be frequently accused by others of "plotting against the people", although "having no **innovation** in mind" [revolutionary design], because they are acting like oligarchs (pursuing wealth and becoming rich: "keep the lion's share for themselves") (*The Republic*, VIII.565b).

And in both *The Republic* and *Laws*, Plato also uses νεωτερισμός. [13] Aristotle's *Politics* too uses νεωτερίζειν (twice as often as καινοτομέω) concerning changes in oligarchies (see p. 13 and 16 above). He makes four other uses of the word, again with a pejorative connotation: two (opposite views) on communism, [14] another on the caste system [15] and still another on the democratic participation of the people in government. [16]

There seems to be no real difference between the two words. [17] Innovation, whatever the name, is pejorative. Both καινοτομία and νεωτερισμός have a political and revolutionary connotation. Early uses of νεωτερισμός are found among Attic orators like Aristides (530-468 BC) and Isocrates (436-338 BC) and historian Thucydides (460-c.395 BC). Yet, the word became widespread mainly after the time of Christ, above all among historians: Flavius Josephus (37-100 AD) used it frequently in *Antiquitates Judaicae* and *De bello Judaico*, as did the Roman historian Cassius Dio (150-235 AD) in his Greek writing *Historiae Romanae*.

Whatever the word used, history certainly contributed to giving innovation a definite political connotation. Together with thoughts on politics and political philosophy, history (of politics mainly) makes use of καινοτομία and, more frequently, νεωτερισμός. Polybius is a perfect example of such a history.

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[13] "The manifold **innovations**" occurring constantly in States (Laws, VI.758c); wealth and poverty bringing "luxury, idleness and **innovation**" (*The Republic*, IV.422a); the citizens "eager for **innovation**" [revolution] (*The Republic*, VIII.555d).

[14] "When regulating the amount of property legislators ought also to regulate the size of family; for if the number of children becomes too large for the total property, the law is quite sure to be repealed, and apart from the repeal it is a bad thing that citizens who were rich should become poor, for it is difficult for such men not to be advocates of **innovation** [new order] (*Politics*, II, iv, 1266b). Plato's communism is a good thing in the subject classes, particularly farmers, because it makes them "submissive to authority and not making **innovation**" [revolution] (*Politics*, II.1262b).

[15] Those who cultivate the soil should be slaves and not "of a spirited character (for thus they would be both serviceable and safe to abstain from **innovation**)" [insurrection] (*Politics*, VII.1330a).

[16] The people should share in government for "all people throughout the country are ranged on the side of the subject class in wishing for **innovation**" [a revolution] (*Politics*, VII.1332b).

[17] From a study of Byzantine lexica, Apostolos Spanos suggests a distinction between καινοτομία and νεωτερισμός as that between making and doing (Spanos, 2013). I have found no such distinction in Ancient Greece. Up to a point, καινοτομία is used to talk about someone innovating, while νεωτερισμός puts the emphasis on a state of mind (a spirit of innovation). This is certainly in line with the etymology of νεωτερισμός (youth): the young are greedy for innovation. However, the distinction is not clear-cut (see for example Thucydides on νεωτερισμός), and by Polybius' time it is no longer valid.

Polybius: Innovation and History

According to the students of political thought, the Greek historian Polybius is considered an influential classical writer on politics, together with Plato, Aristotle and later Roman writers. For my purpose, Polybius deserves a few paragraphs for his use of καινοτομία, two centuries after Plato and Aristotle. Has something changed in meaning?

Polybius (200-118 BC) is the author of *The Histories of Rome* in thirty volumes; the final edition had forty books. However, only the first five books remain intact, as well as a long portion of book six. The rest is composed of fragments. The *Histories* documents how Rome came to dominate the Hellenistic world in the third century BC.

One expects today that historians will be 'objective' and make use of their concepts in a neutral way. A historian tells stories about the past, and uses the concepts as they were used then. Together with Thucydides, Polybius is in fact considered the father of 'objective' history. He interviewed the participants in many events, visiting places himself to clarify some details of events, and was given access to 'archival' material. Polybius stresses that he had spoken to "eye-witness of some of the events" rather than using reports of "second or third-hand" (*Histories*, 4.2) and "arrange every event as it happens according to fixed rules, as it were, of scientific classification" (*Histories*, 9.2). However, this did not prevent him from developing biases, for example against the Aetolians, the Carthaginians and the Cretans.

Polybius' use of καινοτομία (or rather the verb καινοτομέω) continues the tradition. The concept remains revolutionary, but the historian does not, as Aristotle does, forbid innovation. Polybius is writing history. He talks *about* innovation not *of* innovation. Polybius uses the concept nine times, all but two [18] in a political context of 'revolution' or tumults (people revolting; *Histories*, 1.79; 1.9; 3.70; 15.30; 22.4; 35.2) and changes in constitution (the Aetolians "given to **innovation**", namely constitutional change;

[18] One concerns new machines (weapons) (*Histories*, 1.23), the other new exploits (fresh blows) (*Histories*, 1.55).

Histories, 13.1). Νεωτερίζειν too is used in a political context for a *coup d'état* or violation of existing treaties (*Histories*, 5.29; 7.3).

Yet, Polybius innovates when he introduces καινοποιεῖν (kainopoein), the meaning of which is, again, "making new" or renewing. [19] There are now three words used for innovation: καινοτομία, νεωτερισμός and καινοποιία. Over time (during the Hellenistic period at least), νεωτερισμός was far more used than καινοτομία. In contrast, καινοποιία (and καινοποιεῖν) remains relatively absent among Greek writers. One finds no occurrence of it in Xenophon, Plato or Aristotle. It is Polybius' linguistic innovation and has remained his, with only a few uses among later writers.

Since the *Histories* is entirely concerned with politics, καινοποιεῖν is first used in a political context, in that case a military context. References to war, warfare (new weapons) and alliances (treaties) contribute to the connotation: Hannibal supplying his army with "new weapons" (*Histories*, 3.49); King Philip's rejection of a treaty as a "fresh cause of anger with the Aetolians" (*Histories*, 21.10); wars "gathering fresh strength", an idea reminiscent of Plato's and Aristotle's gradualism (*Histories*, 11.4):

> For as when a man has once set a fire alight, the result is no longer dependent upon his choice, but it spreads in whatever direction change may direct, guided for the most part by the wind and the combustible nature of the material, and frequently attacks the first author of the conflagration himself; so too, war, when once it has been kindled by a nation, sometimes devours the first those who kindled it; and soon rushes along destroying everything that falls in its way, continually gathering fresh strength.

But the connotations are more diverse than just political, and the word may have been coined precisely to avoid an exclusively negative connotation. Occurrences of καινοποιεῖν in a positive and neutral sense are also frequent: new weapons (*Histories*, 3.49); need of new projects or exploits to keep one's allies' enthusiasm alive (*Histories*, 3.70); keeping or renewing the memory of great men with eulogies (*Histories*, 6.54).

[19] The verb ποιεῖν (poiein: make) gave poetry (ποίησις) and poet (ποίησις), a maker or 'creator'.

One use deserves mention. As a historian, Polybius applies the concept to himself. Polybius renews the practice of history. He undertakes or invents a new kind of history. "No writer of our time has undertaken a general [world] history", says Polybius, as compared to the limited histories concerned with isolated wars. These histories "contribute exceedingly little to the familiar knowledge and secure grasp of universal history" (*Histories*, 1.4).

Polybius stresses his innovation two more times, using καινοποιεῖν for the purpose. First, he explains that his *Histories* starts at 220 BC (Rome becoming dominant over the whole Hellenistic world) because it is at this period that "the history of the whole world entered a new phase": "every government therefore being changed about this time, there seemed every likelihood of a new departure in policy" (*Histories*, 4.2). Second, Polybius claims that he writes "a history of actions, because they are continually new and require new narrative". To Polybius, previous writers have concentrated too much on "genealogies, myths and colonizations, as well as the foundations of cities and consanguinity of peoples" (*Histories*, 9.2), namely on emotional and sensational history, as tragedy does. Polybius innovates with a kind of history exempt from dramatization, so he suggests.

Conceptual Innovation

The above authors account for almost all uses of καινοτομία, including those in the Hellenistic period (the three centuries before Christ). An enigma remains – a philological one. If one believes historians' dating of Ancient texts, Aristophanes' use of καινοτομία precedes Xenophon's. However, in Aristophanes one finds no explicit or concrete reference to τομ (cut; cutting) in the use of the concept. The meaning is entirely metaphorical. What is the purpose of using such a word then, rather than other or already existing words, like νεωτερισμός? There exist too few occurrences of the word to settle the issue. But it indicates perhaps that Xenophon's use of the word is not an innovation of his own, but in fact preceded him. By the time Xenophon wrote *Ways and Means*, καινοτομία may have already had many different uses, including the metaphorical.

Xenophon chooses to use the word with a concrete meaning to serve his own specific purpose.

Be that as it may, with νεωτερισμός and καινοποιία, innovation definitely liberated itself from its mining origin. The first step was the use of καινοτομία in a metaphorical sense. The next was multiplying the number of words used to talk of innovation. This demonstrates the fact that innovation had definitely entered the vocabulary and was among people's concerns (worries or fears).

In writing on innovation in philosophy, politics and history, our authors are above all conceptual innovators, a fact already documented with regard to political theorists (Skinner, 1979; 1988; 1991; 1994; 1996; 2002a; 2002b; Pocock, 1985; Farr, 1988; 1989). Writers invent new words or change the meaning of existing concepts to support an argument and persuade an audience. One finds the very early uses of innovation in Aristophanes' comedies. These uses are made in a positive sense mainly. Xenophon follows and uses the word in a positive way too. However, as compared to Aristophanes, Xenophon innovates. He stresses the 'revolutionary' character of innovation (originality). Then, both Plato and Aristotle innovated again and turned the concept into a pejorative one, because it is seen as revolutionary in a negative sense. Innovation is revolutionary in the sense that it changes the order of things and leads to revolution. Polybius too uses καινοτομία (or rather the verb form) in a political context, but adds a new word for his own purpose (war issues), often in a positive sense (new machines) and applies it to himself as a historian (new kind of history).

Table.

Uses of Innovation *

(Frequency)

	καινοτομία	καινοτομέω	καινοτόμον	νεωτερισμός	νεωτερίζειν	καινοποιεῖν
Aristophanes		3				
Xenophon		5				
Plato	2	4		2	4	
Aristotle		3	1		6	
Polybius	3	9			2	14
Plutarch	16	10		24	22	2

* The frequencies concern the works studied in this paper.

The real preoccupation of the writers on innovation is the innovator, the one who innovates. Hence the verb form. In fact, innovation (whatever the word used) is more often than not referred to using a verb (καινοτομέω) rather than a substantive (καινοτομία) – νεωτερίζειν and καινοποιεῖν are verbs too. Innovation as a substantive is rare – Plato is the only one to use the substantive. [20] The objective of using the verb form is to put emphasis on action (doing) and the innovator. But there is no reference to originality or creativity (making), above all on the part of the innovator himself. Plato denies innovating (coining a new word) simply for the sake of innovating; Xenophon minimizes his innovation (see p. 8 above); Aristophanes does not use the word innovation to talk of his originality and novelty (*Clouds*, 537ff). Innovation as creativity is a modern representation. To the Greeks, people "given to innovation" are not creative but are rather guilty of something. Innovators are transgressors of the law.

[20] Neither is the substantive καινοποιία (kainopoiia) used even once by Polybius.

Who are the innovators? According to Aristotle, the innovators are Plato on communism (sharing of children and wives) and Hippodamus with his changes in laws (giving too much honour). Aristotle also includes among innovators those who look for private gain (V, viii, 1308b); extravagant leaders: "Men of this sort seek to bring about **innovation**" [a new state of affairs] (*Politics*, V, vi, 1305b); and legislators (Phaleas, unknown) (II, iv, 1266a). Aristotle's innovators also share certain characteristics, not dissimilar to those theorized in the first half of twentieth century – the have-nots: the youngs "initiating the **innovation**" leading to tyranny (V, vii, 1307a), the poors "both more willing and better able to introduce **innovations**" (νεωτερίζειν) (V, ix, 1310a) or "advocate of **innovation**" [new order] (II, iv, 1266b), and those who lose their wealth: "when the leaders have lost their properties they stir up **innovations**" (V, xii, 1316b).

Everyone is an innovator then, from the philosopher to the statesman to the ordinary citizen and the children, if he changes the political order. To the Greeks the emblematic example of innovation is political change in constitutions. However, there is no definition of innovation among the Ancients. Defining what innovation is is not a concern of philosophers. Political change provides only a set of elements for an argument against innovation, or vice-versa. There is no study of innovation either, above all how innovation is distinct, if ever, from other types of changes. To be sure, thoughts are offered on how change occurs (suddenly or step by step) and its effects (destruction of the old), but Xenophon is the only writer presenting a full-length discussion of innovation, the first ever yet in a sense totally different from ours. Finally, there is no theory of innovation. Innovation *per se* is not theorized about. To the Greeks, innovation is a mere word, a derogatory label. It is used mainly in verb form to stress deviance. It is change to the established order. It is subversive and revolutionary. It is forbidden.

Yet with time, one writer innovated again. Two hundred years after Polybius, Plutarch (46-120 AD) made regular use of innovation, both as a substantive and a verb. In his *Lives*, a biography of famous Greeks and Romans, Plutarch does not refrain from using καινοτομία – as well as νεωτερισμός and καινοποιεῖν. In contrast to previous writers, Plutarch uses the concept in a positive sense, with superlatives: the Roman dictator

Sulla's "great **innovations** and changes in the government of the city" (*Sulla*, 74); Themistocles' "many novel enterprises … and great **innovations**" (*Themistocles*, 3); the "great magnificence, [but also] boldness and ostentation" of the artist Stasicrates' "**innovations**", such as giving mountains "the form and shape of a man" (making a statue of King Alexander) (*Alexander*, 72). Nevertheless, such new (and very rare) uses have not altered the pejorative connotation of innovation over time. [21] Plutarch himself uses the verb form in a negative sense, [22] and the above uses remain somewhat ambivalent, and not purely positive, given the political context in which Plutarch discusses them.

Conclusion

Claiming, as I do, that the writers studied here invented or coined the word καινοτομία depends entirely on the sources available to document the case. In fact, the word may have existed previously. However, previous writers, like poets (e.g. Homer and Hesiod) and pre-Socratic philosophers, made no use of it – because their writings were not concerned with the political constitution. Be that as it may, it remains true that our four writers are innovators, at least in the sense that they are the first (known) users of the word.

Καινοτομία put the emphasis on the pejorative, or rather the use of the word does. To be sure, Aristophanes and Xenophon use the concept in a positive sense, the first literally and the second concurrently with negative or ambivalent senses (Blepyrus is positive, Praxagora is not sure, and the public will probably dislike Praxagora's innovation). But such uses shift from Plato onward. To Greek philosophers, innovation means two things. First, introducing novelty (of any kind). This is Plato's "coining a new term" and new forms in games, music and customs. It is Aristotle on Plato's communism and Hippodamus' honour. All these uses are pejorative, because of their political effects.

[21] Before Plutarch, Aristotle made use of καινοτόμον (kainotomon) ("the new"), the neutral form of the adjective καινοτόμος, in such sense, but only once. Before criticizing Socrates vehemently on the form of constitutions, Aristotle says "It is true that all the discourses of Socrates possess brilliance, cleverness, innovation [originality] and keenness of inquiry" (*Politics*, II, 1265a).

[22] Caesar's "**innovations**" to "make the people docile" (*Caesar*, 6); Cicero opposing the "**innovators**" [the tribunes] of the law *(Cicero*, 12); Demosthenes "introducing all sorts of **innovations** [corrections and changes of expression] into the speeches made by others against himself" (*Demosthenes*, 8).

Second, innovation is introducing political or constitutional change. This is Aristotle's main meaning. Most of the time, political change has a revolutionary connotation.

There exist two theses about change in antiquity. One suggests that change is not accepted among Greeks (Popper, 1945). The other is that it is. To Robert Nisbet, the Greeks were "fascinated" by change. To be sure, to the Greeks change is limited. It is cyclical, and the only political change accepted is mixed constitutions. But change is discussed everywhere: science, history, politics (Nisbet, 1969; 1980; Edelstein, 1967).

Καινοτομία may offer a solution to the dichotomy: change (*metabole*), yes – with careful consideration and conscious acceptance –; innovation (*kainotomia*), no. Change is divine or natural. It is slow, gradual and continuous (step by step). In contrast, innovation is man's. It is change to the established order and is not accepted. Such a representation of innovation continued in the Hellenistic period.

This representation has been very influential. It continued in Byzantium (the period from the fourth to fifteenth century) (Spanos, 2010; 2013). Then, from the Reformation onward, people made much use of innovation in England and elsewhere (Godin, 2012a). To be sure, few references to or citations of ancient thoughts exist on innovation specifically – although writers of histories of ancient Greece do not hesitate to use the word when discussing political change. Yet, the pejorative and revolutionary connotation continues, in religion, politics, and social matters. Innovation turns positive only in the twentieth century. It comes to be defined as revolutionary (i.e.: major), as the ancients defined it, but in a positive sense. Minor or incremental innovations get neglected in analysis. Their impact on the economy is said to be negligible (or difficult to measure). Even those who argue for evolutionism focus in the end on revolutionary innovation.

The rehabilitation of innovation over the centuries has been a slow process. Researchers generally attribute to Josef A. Schumpeter the origins of thoughts on innovation – in this paper I have gone back centuries before Schumpeter. Yet, Schumpeter himself was reluctant to use innovation at first. The first edition of *Theory of Economic Development*

(1911) does not use the word innovation once. The revised edition, published in 1926, introduces the word, but as a subsidiary concept only. The main concept is that of "combination". It is only with *Business Cycle* (1939) that innovation gets a short theoretical discussion (ten pages), with four different meanings. One had to wait until the 1960s-70s for a definitive rehabilitation, first in policy matters, then among academics as consultants to governments. Both governments and academics have acted as "innovative ideologists", to use Quentin Skinner's expression (Skinner, 2002a), giving innovation an economic (technology) but still contested meaning (Godin, 2012b).

This paper has focused on the Greeks. One must turn to the Romans to trace the further history of the concept in antiquity, particularly historians like Livy and Sallust and moralists like Juvenal, Seneca, Cicero and Tacitus, as key authors on political thought (Skinner, 1988: 412). History is certainly the field where the concept innovation is most used, as in Livy. The words used are *novare*, *novitas* and *res nova*. Livy's thoughts come to fruition in the works of Machiavelli in the sixteenth century. Machiavelli turns innovation into an instrument of the Prince, a positive use, but one received negatively. This is the subject of Part II of this paper.

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Appendix.

Greek Writers on Innovation

(Approximate dates)

Aristophanes (446-386 BC)	
Wasps	422 BC
Ecclesiazusae	392 BC
Xenophon (430-355 BC)	
Ways and means	355 BC
Plato (427-347 BC)	
The Republic	380-370 BC
Laws	350-340 BC
Aristotle (384-322 BC)	
Politics	350 BC
Polybius (200-118 BC)	
The History of Rome	200-118 BC