Tradition and the Scientific Enterprise

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ABSTRACT

In relating humanities to science, some scholars have argues that tradition plays a prominent role in the humanities but not in the sciences. This, for them, explains why there is development in science more than humanities because tradition in treated a dead weight that hinders reason and freedom this paper challenges this view point as grossly inadequate as it represents only a superficial observation of the practice of science and does not recognise the role tradition plays in the progress of science. This paper attempts to show that science which is supposedly a dynamic and progressive enterprise is tradition-dependent and that membership in the scientific community requires working within the scientific tradition. It is argued that the attack of science on all kinds of tradition and authority is unjustifiable. The paper concludes by proposing the need for the critique of tradition so that it does not slip into traditionalism. The methodology this paper adopt is the conceptual analytic method.

Keyword: Tradition, Authority, Scientific community, Apprentice, Development

1. INTRODUCTION

The improper treatment of tradition has made it to be treated as a residual category in the study of social change. Tradition has been treated as product rather than process. For this reason it is treated as a passive category that in irrelevant when we are talking about progress whether in the society. Talking about tradition in relation to humanities and science, Yu (2005) rightly remarks that it is not difficult for people to understand that tradition plays a prominent role in arts, literature and even in the human science but that when it comes to the natural sciences, the
case is different. He notes that people tend to think that they are tradition-free, some even use tradition to differentiate the humanities from the natural sciences (Dilthey in Yu, 2005-2006: 41). For Gadamer, the element of traditionality is only a secondary value in science while it characteristically distinguishes the human sciences (Gadamer in Yu, 2005-2006: 41). For me, the view that science is tradition-free enterprise, which is a result of the Enlightenment conception of tradition as a dead weight of the past, is grossly inadequate.

It represents only a superficial observation of the practice of science and does not recognise the role tradition plays in the progress of science. This paper attempts to show that science which is supposedly a dynamic and progressive enterprise which requires no tradition or authority, is tradition-dependent and that membership in the scientific community requires working within the scientific tradition.

The paper is divided into three section. The first section critically examines the concept of tradition and laments that tradition is neglected because it is seen as a hindrance to reason and freedom. Traditions are not just passed down from generation to another as a product that is handed down for keep. When a generation receives a tradition, they are at liberty to extend and change it. The second section critical examined tradition within. It begins by looking at the attack of science on tradition and argues that it is unjustifiable for science to attack all tradition since the enterprise itself is tradition dependent in some sense. The essay conclude by examining the need for the critic of tradition so that tradition does not slip to traditionalism.

2. WHAT IS TRADITION?

The word tradition is among the most commonly employed terms in the whole vocabulary of the study of culture and society, especially in relation to the dynamics of social change. Handler and Linnekin have remarked that the notion is both a common-sense and a scientific category (1984: 273). Tradition broadly refers to an inherited body of customs and beliefs. As a scientific concept tradition could be seen as an explanatory category especially when viewed from an historical point of view. The explanatory value of tradition lies in the way it is used to illustrate the process by which individuals inherited certain beliefs and practices from their communities (Bevir, 2000: 49) and how such beliefs and practices influence the behaviour of individuals and how they conceive and explain reality. In order words, tradition may be used to explain the temporal link between individual and community behaviour and conceptual schemes.

A review of existing literature on tradition reveals that while there have been many studies of particular substantive traditions and traditional behaviour, attempts to theorise the idea of tradition itself has been very few. This fact has been lamented by many scholars such as Shils (1981), Williams (1977) and Giddens (1994). Anthony Giddens, for instance, contends that despite being closely tied with conservative thought, conservative thinkers have surprisingly offered little reflection on the nature of tradition (Cited in McAnulla, 2007: 6). Gracia also remarks that the only systematic inquiry and general book on tradition is that of Shils. For Gracia, tradition qua tradition has not often been the subject of philosophical discussion and never the object of extended systematic inquiry, even though some titles of many specific studies misleadingly suggest otherwise (2003: 13).

The neglect of tradition could be explained with reference to the attitude of the rationalists towards the idea. Popper, for instance, argues that scholars within the rationalist tradition have
tended to deliberately ignore tradition and its influence. Their concern is more with those ideas and concepts which supposedly facilitate progressive social change than tradition (Popper, 1991: 120). The Enlightenment thinkers who themselves were products of this rationalistic tendency depict tradition as an irrational inheritance, a residue of the obsolete practices and an impediment to progress. Tradition, in this sense, becomes the opposite of reason and freedom.

Shils offers another reason for this neglect, especially by the social and cultural sciences. In his opinion, the social sciences have in the period of their recent prosperity been focused on the living (Shils, 1971: 124). They tended to see the society only in the present and have not taken seriously Burke’s thought that the society is a partnership, not only between the living, but also between those who are dead and those who are to be born (Burke, 1790). Further, for Shils, they have tended to treat the historical aspect as a residual category from which *ad hoc* explanations are often drawn. He opines that the conceptual structure of social science theories tends on the whole to be atemporal, that is, independent of, or unaffected by time (Shils, 1971: 24).

All societies have inherited social values, knowledge and beliefs and practice which are bequeathed to them and which they perpetuate in a modified or changed form. The combination of these inherited social values, knowledge, beliefs and practices are usually referred to as tradition. This conception of tradition has been greatly influenced by the etymology of the word, and has also immensely influenced much writings on tradition especially those that reject it as something that hinders growth and development.

Etymologically, the term derives from the Latin *tradition* which is derived from the verb *tradere* meaning to transmit, to give up, transfer or deliver. *Tradtio* indicates the process by which something is being transmitted. For the Romans, *traditio* consisted in the action of handing over something, or transferring something to someone else. The term is also used in a legal context, for example, when the transfer of a house to a new owner was accompanied by the action of handing over the keys to them. But the Latin term was not used exclusively for the transference of objects.

The verb *tradere* was also frequently used to mean teaching, so that transmitting knowledge to someone was also called a *traditio*. Our contemporary use of tradition preserve this general sense of handing over, or passing on, something to someone else. It is in the light of this etymology that H.B. Acton defines tradition as “a belief or practice transmitted from one generation to another and accepted as authoritative, or deferred to, without argument” (1952-53: 2). Shils, following this conception of tradition, also sees tradition as anything which is transmitted or handed down from the past to the present. For David Gross, tradition refers to a set of practices, a constellation of beliefs, or mode of thinking that exist in the present but was inherited from the past (1992: 8). Many things in existence now were engendered in the present as a response to something in the present. Such things do not constitute traditions. A tradition, by contrast, requires prior existence of something which is then transmitted, imitated or repeated. This action could be in response to something that is present. For instance, tradition could be used for the justification of an action, or the formulation of an identity for the people in the face of external threat to their communal personality and co-existence.

We need to note that it is not just anything that is passed from the past to the present that constitute tradition as Acton and Shils’ definitions seem to suggest. Man-made objects or artefacts, symbols or images passed down through the centuries, or institutions that survive from one generation to another, even though they may be conduits of traditional patterns of conduct or attitude, are not themselves traditions.
Tradition can be a set of observance, a collection of doctrines or teachings, a particular type of behaviour, a way of thinking about the world or oneself, a way of regarding others or interpreting reality. In this sense, no object qualifies as tradition. All the things mentioned above become traditions when they are alive and active in the present. And when they are so active, they have a way of influencing our thoughts and actions, and this becomes what we can call a living tradition.

The notion of being “passed down” or “handed over” needs some further clarifications. The reason for this is that such notion has engendered wrong conceptions of tradition, namely, its supposed irrationality and authoritativeness. To say that a belief is passed down or transmitted to a generation is to say that it is bequeathed to the generation, that is, it is placed at its disposal with the expectation that the receiving generation would find it useful and, hence, preserve it for future generations. The notion does not imply that the cultural materials involved in the tradition are imposed willy-nilly on the subsequent generation. Though some cultural materials have their roots in the past, they become traditions only when they are accepted and perpetuated by the receiving generation. The implication is that much depends on the receiving generation. Whether the transmitted cultural material will be made use of or preserved depends on the attitude adopted towards it by the receiving generation. In other words, the perpetuation of a cultural material, that is, tradition is not automatic.

Gyekye explains this further by saying that:

the continual survival of a pristine cultural product depends on the normative consideration that will be brought to bear on it by a subsequent generation.

(1997: 221)

The subsequent generation, at whose disposal the cultural values are placed, may on normative or rational ground either accept, refine, that is, modify and preserve or reject, depreciate and then abandon them. The desire of the receiving generation to modify, preserve or abandon a social practice, belief or knowledge is often the product of the recipients’ evaluation of those cultural products. Such critical evaluations are essential for the growth and revitalisation of cultural traditions.

The implication of the above explanation for tradition is that it cannot be simply referred to as that which is handed down or something that is given for keep. The reason is that such an idea suggests that the receiving generation has no function other than an unthinking acceptance which is implied in Acton’s definition. It is for this reason that we find Gyekye’s definition a better alternative to that of Acton and Shils.

According to him,

Tradition is any cultural product that was created or pursued by past generations and that, having been accepted and preserved, in whole or in part, by successive generations, has been maintained to the present (Gyekye, 1997: 221).

The significance of this definition is that it puts both the creator and the perpetuator of a cultural value in focus. Both are important: If the products are not created, they cannot be bequeathed; and if they are not accepted and perpetuated, they cannot become a tradition. In fact, when properly analysed, one would see that it is correct to say that the role of subsequent generation is even more crucial in the process of tradition. The role is not just that of unthinking
acceptance and perpetuation. It is ideological to postulate that tradition is only about preservation and perpetuation. Bevir (2000) has a compelling argument about the role of human agency in the process of tradition which explains how traditions change. He argues that human beings are socialised in an already constituted historical and social context which invariably influences them it is this inherited social context which involves certain rules, beliefs and practices that are traditions. However, this for him does not imply that the individuals cannot change or modify the tradition.

He writes that

To recognize the inevitable influence of tradition on individuals is not to deny human agency. Although individual must begin their journey against the background of tradition, they later can modify that tradition: although they are inescapably influenced by it, they are not determined by it (2000: 35).

In other words, that an individual or group of people start out from a tradition does does not imply that they cannot go on to adjust it.

3. SCIENCE AND TRADITION

In its formative period, modern science championed a violent rebellion against all traditions and authorities. This was reasonable at that time, for modern science had to fight traditional authorities, especially the Roman Catholic Church in order for it to take shape. The hostility between science and religious tradition is can be seen in the challenge of scientific discoveries as evidenced in the Galileo affair. As Isenhour remarks, “Galileo’s conflict with the church has become a symbol of the conflict between science and religion” (2013:52). However, this critical spirit remained and came to imply that science, as a rational and free enterprise, must repudiate all traditions and authorities is in order to make progress. This perspective is misleading. It represents a mis-reading of the nature of science and that of tradition. Scientific research cannot reject all traditions. In fact, the existence and development of science is based on scientific traditions and scientific authorities. The reason why science opposed tradition apart from the enmity of the religious tradition, is that tradition is believed to oppose reason and innovation. But this is not necessarily so. All reason, as argued by Polanyi necessarily occurs within a particular tradition (See Mitchell, 2006). He argues that all knowing depends on what he calls a fiduciary framework, meaning that belief necessarily precedes and undergirds all knowing (Polanyi, 1952).

The implication is that we must believe in some existing framework before we can know. The implication for science is that “Faith, belief, and a critical presupposition play a role in science as well as religion. Scientists profess faith in the continued progress of science as well as in the ‘integrity of scientists in applying and amending their principle’” (Stults, 2009:58). Science, thus, is not presupposition-less and should not be conceived as extremely objective. Polanyi is of the opinion that tradition is a necessary condition which makes rational thought possible.

This form him, is because “no human mind can function without accepting authority, custom, and tradition: it must rely on them for the mere use of language.” (Polanyi, 1969: 41). In this sense, all knowing is tradition-dependent. Let us consider skill acquisition by an apprentice. No apprentice can acquire a skill in his chosen vocation without submitting to the
authority of one who possesses the skill. Consequently, to become a scientist, one must submit as an apprentice to the authority of a scientist who has mastered the art of scientific knowing. Mitchell explaining what this implies writes that:

Such a scheme implies a tradition of knowledge that is passed from one generation to the next. Necessarily embodied in a particular tradition. That being the case, reason and tradition are not opposed to each other…tradition is logically prior to and necessary for the exercise of all rational thought (2006: 103).

To my mind, commitment to a tradition does not invariably imply static intellectualism, as tradition does not remove all avenues for conflict and critique. Instead, internal conflict and critique could arise and give way for dynamism and change. This implication of this is that commitment to a particular tradition whether it is scientific or not does not foreclose innovation and revolution. When we look at the history of science, we see both change and continuity; and it could be argued that it is the continuity that change come scientific changes comprehensible.

According to Mitchell (2006), the dynamism of tradition can be seen at two levels. The first is that each generation that acquire a tradition reinterprets it and in doing so alters that tradition in some way to accommodate the particularities of those who engage it. The second is that each individual who are legatees of such traditions also add his/her own interpretation to it. One could see from Mitchell that the dynamism of tradition is dependent of the interpretation one gives to it. This interpretation will also affect the practice of the tradition.

MacIntyre (1988) explains the dynamic nature of tradition by looking at it as a narrative, meaning that tradition is an ongoing process of composition. Whenever a tradition is instantiated, the latest expression is an outgrowth of a narrative that is being written. Moreover, the most recent articulation of the narrative is only intelligible within the larger narrative of the tradition. The implication of this is that tradition extends from the past into the future, and the future cannot be invariably determined. This is because if the contestations that are involve in the composition of the narrative of tradition. A tradition that does not contain contestations and conflicts is, in Macintyre’s perspective a dead tradition (MacIntyre, 1984).

According to Yu, the importance of tradition lies in the fact that the existence of tradition, or the lack of it, will directly affect the creativity of our work in a certain area and the quality of our product. The reason is that science or any endeavour whatever is likely to flourish in areas where it has a long-established tradition. Another reason is that science as a systematic and organised objective knowledge is a cumulative process. For instance, one of the criteria for judging the acceptability or otherwise of any scientific hypothesis is that it fits into other well-established scientific hypothesis and theories (Copi, Cohen and McMahon, 2014). This criterion which is coherentist in character construes science as a body or system of knowledge whose hypothesis and theories must cohere or, that is, be a growth within the same tradition. It is only in this direction that science can seem to make any meaningful progress through the gradual expansion of existing theories.

A caution must however be exercised as regard this criterion so that we do not overestimate it in the face of new discoveries that can be made which may be inconsistent with existing hypotheses. But in most cases each generation of scientists acquire what its predecessors have achieved through their successive experiences and analyses and the fruits of this experience are passed onward.
Science is made up of some explicit propositions which make up the body of scientific and scholarly knowledge at any point in time. They are propositions ranging from the scientifically descriptive to the general and explanatory, which have, at best been supported and have not be refuted by methodical research and analysis (Shils, 1995-1996: 12).

These propositions enjoy widespread agreement though not always complete agreement among those who work in the field and they are usually regarded as given in the work which goes on in the field. These propositions are communicated from generation to generation and have form the basis for further scientific investigation. It is not the case that any of these propositions is immune from criticism or rejection but, according to Shils, to criticise them is to accept the correctness – at least for the time being – of the other propositions specifically descriptive and generally explanatory which make up the existing body of knowledge in that field and which are the objects of consensus of that particular sector of the larger scientific community. The tradition of a particular scientific field of inquiry is constituted by these propositions. They represent the point of departure for anyone who takes interest in that field. As we have noted, science is cumulative, and so usually these propositions are added to, revised and corrected.

It is pertinent to note that progress in any intellectual field especially in science is practically impossible without such body of inherited and accepted propositions which constitute its knowledge base. For instance, Popper argues that tradition is a precondition for the growth of scientific knowledge. Scientific knowledge grows not by direct observation but by the juxtaposition of observation and received theories (i.e. tradition). Without such a background knowledge and accepted guiding propositions, any science whatever would have to begin a fresh in every generation or indeed with every individual scientist. This is likely to be counter-productive.

The scientific community is a community because it is founded on a consensus about certain things that aid scientific work and progress. A scientific community is a plurality of individual scientists who are participants in such a consensus. The consensus refers to a body of scientific proposition which form the basis of scientific knowledge. These propositions are those which have been established and confirmed or has not be refuted by scientific investigation. As stated above, the consensus need not be perfect, for not all scientists agree on everything in their field. This disagreement has significance for scientific growth. It allows for re-assessment of certain things such as procedures that are held as dear. Nonetheless “there could be no body of scientific knowledge and there could be no intellectual growth of such body of scientific knowledge, nor could there be any territorial expansion of that body of knowledge if there were no consensus and hence no community of individuals participating in that consensus” (Shils, 1995-1996: 15).

The point we are trying to make is that even science which is supposedly a dynamic and progressive enterprise which requires no tradition or authority, is tradition-dependent and that membership in the scientific community requires working within the scientific tradition. Membership exists when an individual who does scientific research has according to Shils, “assimilated and is guided by its objectives, and conducts himself towards his colleagues within the lines implied by those rules and objectives” (1995-1996: 16).

The scientific knowledge into which the individual scientists are initiated through scientific apprenticeship, which as we noted, are made up of propositions ranging from the most explicit to the most general and abstract constitute tradition in science. And as tradition, it is an inevitable and indispensable point of departure.
This point is reinforced by MacIntyre when he contends that:

> We, whoever we are, can only begin enquiry from the vantage point afforded by our relationship to some specific social and intellectual post through which we have affiliated ourselves to some particular tradition of enquiry, extending the history of that enquiry into the present… (1988: 401).

Tradition does not foreclose the fact that each generation would or could develop knowledge from its own experience of seeking knowledge about reality. While it is likely that this knowledge is incorporated into the tradition hitherto or cause the tradition to be discarded if it is not congruent with new reality, it is unlikely that the generation would fail to transmit the new knowledge. Just as knowledge gained from the past forms a tradition, so too the knowledge gained alongside it becomes tradition.

The propositions which constitute scientific tradition form only a part of scientific tradition. There is another part which is the unarticulated part. In his discussion of the scientific tradition, Shils distinguishes between these two parts.

He writes:

> Each generation of scientists acquires what its predecessors have achieved through their successive experiences and analysis, the fruits of these experiences and analyses are passed onward. Many of these fruits are subjected to several rational scrutiny and refined articulation. But not all that is presented and received is assimilated into this process. Some of it remains unarticulated, but that too is presented and received. The transmission of the articulated part of the rational, scientific tradition is made effective by the reception and mastery of its unarticulated part. The mind of the recipient is formed by this reception of both the articulated and the unarticulated. (Shils, 1981: 22)

The unarticulated part of scientific tradition refers to such things as the skill of carrying out research, the sensitivity to important problems, the insights or hunches in scientific discovery and the ethos of the scientific community. This aspect of science can hardly be codified or systematised. If we examine this unarticulated part, one would realise that because it cannot be codified or systematised in detail, it can only be passed on only by example from master to apprentice, hence personal contact is crucial. By means of intimate association and empathy with, and imitation of the exemplified acts of the master, the apprentice acquires the skill or art of scientific research. This has two important implications. Firstly, the apprentice will have to submit to the authority of the master. In other words, science cannot totally do without certain authorities. This point is crucial for progress in science.

However, we have to realise that this submission to authority does not imply blind obedience. It is a submission that grows out of the recognition of the limitation of one’s own understanding and the superiority of other people’s judgments. This act of submission to scientific authority is an act of reason. Submission to scientific authority is not diametrically opposed to reason.

Bevir argues that:

> Novices in modern science do not work out appropriate procedures, reasoning, and accepted truth by themselves. Rather, they are initiated into a tradition of
science by their teachers, and only after they have thus been initiated do they proceed to advance science through their own work (2000: 42).

The apprentice will have to learn from and be guided by the master and when he reaches intellectual maturity and becomes an independent scientist, the authority of the master is eclipsed and he/she will rely more and more on his/her own judgement and conscience in the practice of scientific research.

However, this is not before he/she has internalised some things that have become like viscera codes to him in the scientific research. Secondly, it signals that it may be difficult to retrieve a scientific tradition once it is lost. When a tradition is lost, the chain of personal contact that transmits its art is broken and so cannot be passed down. Grasping the articulated part alone may not yield fruitful re-establishment on the tradition.

4. CONCLUSION: THE NEED TO CRITIQUE TRADITION

This paper has shown what tradition is and what role it plays in the practice and development of science. However, it is important to note that the lure of tradition can lead to it romanticisation and institutionalisation. This attitude to tradition can only lead to stagnation. The scientific tradition cannot develop and give way to new ways of viewing the world and practicing science of it it’s not subject to critique.

There, therefore, needs to be an open-minded engagement with tradition. This attitude is what Moosa (2006) terms critical traditionalism. It is to constantly interrogate tradition and to ask productive questions. It is to view tradition not as sacred and unchanging but rather as what can be subjected to evaluation, correction, and improvement. This attitude is not destructive of tradition.

To think it does is to have an essentially negative view of criticism. I do agree with Staniland’s position which conceives criticism as a “rational, impartial, and articulate appraisal whether it is positive or negative…[that] consists in asking whether an idea should be reformed modified or conserved” (Staniland, 2000: 4).

Being critical involves avoiding any kind of dogma however trivial. It is an attitude in which nothing is taken for granted or accepted without proper scrutiny. The upshot of inherited knowledge and rules of conduct and practice in any community is not that it should be adored and objectified as an object of worship but that it must be put to use. In this use, tradition changes and advancement are bound to occur which sometimes may affect the structure and content of the tradition.

The change and advancement are usually facilitated by a critical mental outlook toward the tradition.

Biography

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