

New Millennium Perspectives in the Humanities

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Towards an Open Science: Learning from the Ottoman Humanities

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Popper described those who aspire to build a unified and all-comprehensive theory of the world as enemies of an open society because the advocates of such theories would discriminate against alternative approaches and their advocates, which would lead to authoritarianism if backed by the state.¹ The solution Popper offered was to test these theories against data or to subject them to the test of falsification. If they cannot survive this test, or do not avail themselves for such a test, then they should be rejected, not because they are not qualified to be scientific theories but because they are inimical to an open society.

Recently, Wallerstein and his colleagues have called for an opening up of the social sciences.² Yet their critique was not laid against the conceptual structure of a particular type of scientific activity, but against the structure of opportunity in the scholarly profession which is closed to certain social segments. Unlike Popper, Wallerstein *et al.* did not discuss the problems of the intellectual structure of social sciences but concentrated on the social organization of the profession. The problem for them is not the way in which the social sciences are currently performed, but who is involved. They

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¹ K. Popper, *The Open Society and its Enemies*, 2 vols (London: Routledge and Kegan Paul, 1973); *idem*, *The Poverty of Historicism* (London: Routledge and Kegan Paul, 1991); *idem*, *The Logic of Scientific Discovery* (London: Routledge and Kegan Paul, 1992).

² E. Wallerstein, *Open the Social Sciences: Report of Gulbenkian Commission on the Restructuring of the Social Sciences* (Stanford: Stanford University Press, 1996).

rightfully drew attention to the gap between the producers and consumers of social scientific knowledge and asked for the profession to be open to underprivileged groups as well.

There is a neglected link between the conceptual level dealt with by Popper and the social level which Wallerstein concentrated upon. I do not believe these two levels or dimensions can be uncoupled because closed science and closed society exist together. As human history shows, since the time of the Greeks, the closed conceptual and social structures mutually reinforce each other and cannot exist independently. In particular, the authoritarian regimes of the twentieth century, such as the Soviet Union, used closed science to solidify their foundations and tried to legitimize their oppressive acts under the banner of science. Opponents deserved no right to live because their views did not conform to science.

As a solution to this elusive yet consequential problem, I propose nourishing an open science to replace the present closed science, in other words a methodological pluralism as an alternative to the current methodological monism. Methodological pluralism indicates the concurrent usage of a plurality of methods on different levels. The current methodological monism, however, strongly advocates that there can be only one method for science. From the perspective of methodological monism, the explanatory strategy employed in research is presented as natural, innate in the mind, God-given or indispensable. For methodological pluralism, however, the explanatory strategies used by scientists are the constructions of scientists, and their superiority needs to be proven through their usefulness in research.

My starting point is that there are causal and non-causal relations in our social and linguistic worlds which concurrently exist in ceaseless interaction; so must the intellectual tools we use to explain and understand them. A multilevel and relational ontology provides the foundation for methodological pluralism. A unilayered and essentialist ontology, however, serves as the foundation of methodological monism.

I have always found it problematic to deny or to dismiss a relationship between A and B, which are not causally connected,

based on the claim that their relationship (coexistence or correlation) is meaningless for science because it is not causal. Yet while studying Arabic and Ottoman linguistic and human sciences, such as *nahw* (grammar) and *balaghah* (rhetoric), I realized that two distinct types of relationship are constructed and operationalized in research: *'amal* and *ismad*. The former construct is causal while the latter construct is hermeneutic or interpretive. The relationship of *'amal* is used to causally explain the changes in the utterance at the end of Arabic words, depending on their position in the sentence. The *ismad* connection, on the other hand, is used to explain the changes on the level of meaning depending on the interrelations between words and the social and discourse context. The example of Arabic human sciences is significant as a scientific mode because they provide an example for methodological pluralism through the integration of causal and non-causal explanatory schemes.

Open science indicates an approach which advocates the concurrent usage of a plurality of explanatory methods on different levels. I believe that there is a strong connection between our aspiration for an open society and open science. A closed science with a single method of knowing the world and suppressing alternative views is characteristic of a closed society. An open science, on the other hand, is an important requirement for a truly open society.

The Ottoman legacy provides an interesting case to test this hypothesis.³ In general, the Ottoman social organization and sciences should be seen as a developed extension of the broader Islamic and Arabic legacy. The Ottomans successfully established and maintained a multinational and multicultural state for many centuries in the Balkans and the Middle East by developing the *millet* system on the basis of a legacy from previous Muslim states. They also adopted their sciences. Below I will demonstrate, deriving from the prevalent approach adopted by the Ottomans to the humanities, that Ottoman education in the humanities fostered a methodological pluralism, and

³ Victoria Holbrook observes that after the collapse of the Empire, the Ottoman legacy in the humanities has not been claimed by succeeding nation-states: V.R. Holbrook, *The Unreadable Shore of Love: Turkish Modernity and Mystic Romance* (Austin: University of Texas Press, 1994), p.2.

thus an open science, which can be seen as a reflection of the *millet* system in the field of science. Students thus educated were intellectually better equipped to respect alternative views and lifestyles. I will refer to the most commonly used books by Ottoman *medrese* teachers and students, which are sociologically more significant than more specialized literature on the humanities.

With the purpose of substantiating my argument, I will demonstrate how the Arabic humanities concurrently use both causal and interpretive methods. This will show that the language we use is composed of both causal and non-causal relations; therefore, it must be analyzed by the concurrent use of different methodological tools. Consequently, understanding the world cannot be achieved by causal analysis alone and requires the simultaneous use of both causal and non-causal analytical tools.

My purpose here is not to refute a mode of thinking commonly known as causality. Nor is it my purpose to indulge in the traditional debate between determinism and indeterminism. Instead I aim to draw attention to the limits of relying exclusively on causal explanations as the only scientific method of analysis. I will argue that scientific knowing, which we aim to achieve in our research, does not have to exist only through establishing causal connections; instead, there may be other ways of knowing which are not mutually exclusive. I wish to explore the possibilities that can help us transcend the limits of exclusive causal thinking. More specifically, I will assert that (1) the linguistic and social worlds are composed of causal and non-causal relations; (2) causal and non-causal approaches represent two different forms, but not the only forms, of scientifically knowing the world; (3) a scholar should at once search for and analyze both causal and non-causal relations; (3) science should be conducted by simultaneously analyzing causal and non-causal relations as well as their interaction. By defending these arguments, I aim (1) to expand the jurisdiction of science by extending it to a domain of relations thus far excluded as irrelevant from the knowable world because they are not causal, and (2) to call for an 'open science' as an alternative to

the presently adopted concept of 'unified science'⁴ which I should like to call 'closed science'.

Today, the world appears to us like a complicated network of interconnected webs rather than causally connected dyads of neatly observable facts. Our view of nature has moved from binary relations to networks. However, we have yet to explore the implications of this change of perception on our reasoning, in particular on the plausible scientific models we use. This paper aims to explore implications of this *relational turn* on the way we do science as humanists and social scientists. I will argue that relations must replace the essences as the unit of analysis in science. I will also argue that *methodological pluralism*, whether causal or interpretive, should take the place of *methodological monism* which has unsuccessfully tried to prevail upon the modern mind until today. The emergence of new tools for thought and science does not have to be at the exclusion of the presently used tools. At this juncture, I propose that a methodologically open approach can be adopted following the model of Arabic human sciences.

It is in our best interests to treat the efforts towards scientific explanation as determined by a possible-plausible strategy and their outcome as variable constructs among many other possible-plausible strategies and constructs. They are not natural processes or indispensable outcomes; rather they are learned, possible and variable. This is so even if the devotees, in particular positivists, present their scientific strategy as the only mode of knowing, innate in the human mind, essential to human thought, and thus natural and invariable. This sin is commonly committed by many as far as causality is concerned. Pierce noted in 1898 that 'men's conceptions of a Cause are in different stages of scientific culture entirely different and inconsistent.'⁵ Aristotle recognized four distinct types of cause: matter, form, sufficient and final cause. Furthermore, the construction

⁴ For a detailed discussion of the project of unified science, see O. Neurath, R. Carnap and C. Morris, eds, *Foundations of the Unity of Science*, 2 vols (Chicago: University of Chicago Press, 1971).

⁵ S.C. Pierce, *Reasoning and the Logic of Things* (Cambridge, MA: Harvard University Press, 1992), p.197.

of causality has continuously been the subject of debate and reconstruction over time from ancient Greece to the Middle Ages and modern and postmodern times. Consequently, we cannot assume that our definition of causality is the same as that of others in history and the present world. Thus we should be able to accept the variation in the concept of causal explanation over time as well as across disciplines.

Usually, various strategies of research and modes of knowing are presented by their advocates as the ultimate solution to all the problems of science. Yet, to be fair, each strategy for knowing has its advantages and drawbacks. A plurality of concurrently used strategies will compliment each other and thereby empower scholars by expanding the knowable world for them. Otherwise, exclusive devotion to a single method as God-given, natural or innate in the mind will promote intellectual bigotry and discrimination. More importantly, it will weaken the scholar himself by narrowing his knowable world. Explanations and explanatory strategies are not found in nature or in the mind, but are intellectually founded by us. We should use them rather than letting our minds be enslaved by them.

The approach I offer here will also be a plausible construct with its limits and drawbacks. My purpose is not to solve all the problems of thought and science, but to explore a possible solution to a pressing problem that can no longer be denied. Science, when empowered by this new and open approach, will expand our horizons and allow us to see new phenomena; yet, it should be born in mind that it still will not be able to offer the ultimate explanation of our existence. The task of discovering the ultimate explanation, I believe, is not the task of science but that of religion and philosophy.

More importantly, I aim to draw attention to the impact of methodological monism on the social structure. Closed science and a closed society are always found together and mutually feed each other. Closing the gate to a closed society requires first building an open science with an inclusive approach to ontology, epistemology and methodology.

Relational Approach to Discourse

I see the Arabic humanities⁶ as an example of open science for the following reasons. First, its approach is a relational but not an essentialist one. Secondly, it has a multilevel ontology. Thirdly, it recognizes the existence of both causal and non-causal relations in language. Fourthly, it develops and employs at once several methods for the analysis of different levels and types of relations. I will elaborate on these points below.

Since the first conceptual formulation of a scholarly approach to language in the seventh century CE, humanists of the Arabic language have adopted a relational approach to language and recognized various types of relation in the text such as *'amal*, *isnad*, *ta'alluq* and *ieāfab*. The subject matter, the text, is perceived as overlapping networks of various types of relation. Each network is analyzed from a different methodological standpoint. It should be remembered that the issues touched upon below are more complex than what is briefly presented here. Given my purpose, I will not go into great detail; rather I will try to highlight the way they do science.

At the outset, it will be useful to take a comparative look at some of the relations recognized by the Arabic humanities, more specifically *'amal*, *isnad*, *ta'alluq* and *ieāfab*.

'Amal, which literally means 'work' or 'action', is used to demonstrate the cause of the change of reading or pronunciation at the end of a word. These changes are called *i'rāb*. *'Amal* is seen as the cause of *i'rāb*, which is a characteristic of Semitic languages and does not exist in other languages such as English and Turkish. Consequently, it may be challenging for those who are not familiar with the Semitic languages to conceptualize *i'rāb*. Let me give an example: there are three ways in which the ending for the word

⁶ A historical note to clarify a possible misunderstanding may be worthwhile at this point. Humanists of the Arabic language were mostly non-Arabs, traditionally called Mawali scholars by Arabs. They belonged to myriad nations such as Turks, Berbers, Iranians and Indians, yet over time they adopted Arabic as the lingua franca of the international community of Muslim scholars and contributed to the Arabic humanities. Ottoman Turkish scholars also followed this tradition until the demise of the *medrese* system and authored works on the humanities in Arabic.

'Zayd' can be read; it can be *Zayd^m*, *Zayd^{an}* or *Zaydⁱⁿ* depending on its position in the sentence, which gives rise to the question why these changes occur.

The changes in *i'rāb* are explained as an outcome of the relationship between *'āmil* (literally, 'worker') and *ma'mūl* (literally, 'that which is worked upon'). The *'āmil* is the cause, the *ma'mūl* is the subject, and the *i'rāb* is the effect. The sixteenth-century Ottoman scholar, Birgivī (d. AH 981/AD 1573), in his famous grammar books, *al-'Awāmil* and *al-I' bār*, which served as the standard text books in the Ottoman *medrese* system, enumerated them for beginners as totalling one hundred, sixty of which are *'āmil*s, thirty of which are *ma'mūl*'s and ten of which are different types of *i'rāb*. Without the connection of *'amal*, each word remains a separate entity, a *mufrad*. *'Amal* connects the separate entities and produces the sentence.

Isnad is used for the construction of a relationship between two major parts of the sentence: the subject and the predicate, or the *musnad ilayh* and the *musnad*. *Isnad* is a tool employed in the analysis of how different individual meanings (*mufradāt*) are linked to each other to produce a new, more complicated (*murakkab*) meaning.

Humanists of the Arabic language also invented *ta'alluq*, another major (though less important compared to *'amal* and *isnad*) type of relationship in the text. *Ta'alluq* literally means 'connection'. As a term, it indicates the relationship of a transitive verb to its subjects, *muta'allaq* (pl. *muta'allaqāt*). A transitive verb may have more than one *muta'allaq*, which is a characteristic of the transient verb and is not the same as *isnad*. Briefly put, *ta'alluq* is used to show the relationship of a transitive verb to its object (*maf'ūl*) or objects.

The *ieāfah*, on the other hand, is used to indicate the dyadic relationship between two names that constitute a genitive or possessive case. One is called *muieāf* while the other is called *muieāf ilayh*.

To reiterate, *'amal*, *isnad*, *ta'alluq* and *ieāfah* are the four major types of relation which have been constructed and employed by linguists and humanists of the Arabic language who perceived the sentence and the text as a network of networks. Here I shall focus on only two main ones, *'amal* and *isnad*, and leave the *ta'alluq* and *ieāfah* for another occasion.

Causality is a long-debated issue among humanists. Competing approaches emerged over time concerning the activation of the causes which effect a change. For instance, according to Rāēī, the commentator of Ibn al-*muǧīb*'s *al-Kāfiyah*, the cause is the speaker and the *'awāmil* are merely the tools of the speaker; yet the scholars' of syntax treated them as if they were the causes of the meanings and their signs. Consequently, the tools are called causes.⁷ Birgivī writes that *'āmil* commands a change of ending on the word by means of the occurrence of different meanings of the words such as *fā'iliyyah* and *maf'ūliyyah*. From this perspective, *'āmil* is not an independent actor; it needs the agency of meanings. By such a conceptualization, Birgivī aims to integrate the levels of utterances and meanings.

'Amal: Analysis of the Structure of Causal Relations

The concept of *'amal* is a methodological tool which is used to detect and analyze the structure of causal relations in the sentence. It is used to answer the question, 'Why do words have different endings?' The changes are causally attributed to the configuration of relations of the word under investigation. From this perspective, the position in the structure of the sentence, but not an inner cause emanating from the word itself, determines the ending of the word.

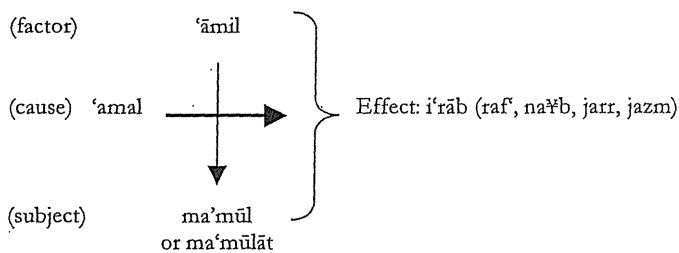


Figure 1: 'Amal and the Structure of Causal Relations

⁷ Rāēīy al-Dīn Najm al-Dīn Muḥammad ibn ḡasan Rāēī, al-Astarābādī, *Sharḥ al-Rāēi 'alā'Kāfiyah*, 4 vols, ed. Y.H. Umar (Tehran: Muassasetu's-Sadik, 1978/1398), 1, p.82.

“*Āmil* is that with which the meaning that requires the *i’rāb* manifests itself,” defines Ibn al-*µajīb*.⁸ The number of *‘awāmil* (factors, causes) are empirically and inductively determined. Likewise the *‘amal* (effect) they produce is also empirically determined. *‘Amal* is expected to be universal, but there are restrictions on it. Cause does not bring about the same effect all the time. The qualities of the *ma’mūl* also play a role in the outcome. The causality is not one way, rather there are constraints imposed on it by the *ma’mūl*. *‘Āmil* and *ma’mūl* logically require each other.

The solitary word (*mufrad*) cannot have an *i’rāb*. A word can have an *i’rāb* only after becoming part of a complex system (*murakkab*), that is, a sentence. Such a word is called a *mu’rab*. There are words that resist change; they are termed *mabnī*. *I’rāb* is the primary characteristic of nouns. Verbs are, as a rule, *mabnī*. Yet the present tense (*fi’l muċāri*) also behaves as a *mu’rab* because it resembles a noun in several respects.

The rule about a *mu’rab* word, which is the inflected word in a sentence, is to change the endings, verbally or nonverbally (*taqdīran*, ‘virtually’), in accordance with the change of the *‘awāmil*, be they visible or invisible.

I’rāb is that with which the end of the word changes to indicate succeeding meanings. It is a sign through which *‘amal* becomes manifest; otherwise *‘amal* is considered to remain hidden from view. There are three kinds of *i’rāb*: *raf* (the ending ‘u’), *naʿb* (the ending ‘a’) and *jarr* (the ending ‘i’). For instance, *raf* is the sign of being *fā’il*, *naʿb* is the sign of being *maf’ūl* while *jarr* is the sign of the possessive case (*iċġāfah*).

From the perspective of the structure of causal relations, there are two types of sentence: verbal (*al-jumlab al-fi’liyyah*) and nominal (*al-jumlab al-ismiyyah*). There is a structural difference between nominal and verbal sentences from the perspective of the relations on the level of *‘amal*. The verbal sentence begins with a verb, which is also the *‘āmil* in the sentence, and may have more than one *ma’mūl*. The

⁸ Abū ‘Amr Jamāl al-Dīn ‘Uthmān ibn ‘Umar ibn Abī Bakr, ibn al-*µajīb*, *Al-Kāfiyah*, in *Birinci Kayıtlı Nahiv Cümlesi* (Istanbul: Salah Bilici Yayınları, 1986), p.61.

nominal sentence begins with a noun and is composed of two elements, *mubtadā* (literally, 'the subject word with which the sentence begins') and *khabar* or predicate (literally, 'news' or 'information'). In the nominal sentence, neither of the words is 'āmil. Instead, an invisible 'āmil latently operates on them and makes their endings raf' (the ending 'u').

The following examples will help to illustrate the causal analysis of the sentences. First, with the use of three examples, I will demonstrate how grammarians of Arabic analyze causal relations in verbal sentences. Next, I will demonstrate how they analyze causal relations in nominal sentences with two examples.

Example 1	<i>Qama</i>	<i>Zayd^{un}</i>
	verb	agent
	'āmil	ma'mūl
	fīl	fā'il

This is a verbal sentence because it begins with the verb 'qama'. The meaning of the sentence is 'Zayd stood up.' The verb, 'qama', is an 'āmil and acts on 'Zayd', which is a noun, and causes it to be marfū'. The sign of raf' is the *ʿāmmab* (the 'u' ending) at the end of it. This is the most simple form of verbal sentence.

Here is another verbal sentence. This time the verb is transitive and acts on two ma'mūls, one is called fā'il (literally, 'the agent') while the other is called maf'ūl ('the object').

Example 2	'Alima	<i>Zayd^{un}</i>	<i>al-mas'alaf</i> .
	verb	agent	object
	'āmil	ma'mūl 1	ma'mūl 2
	fīl	fā'il	maf'ūl

The meaning of the sentence is 'Zayd knew the matter.' 'Alima' is a transitive verb which changes the ending of 'Zayd' to 'Zayd^{un}' because it is the fā'il. It also changes the ending of 'al-mas'alaf' to 'al-mas'alata' because it is the maf'ūl in the sentence.

Here is yet another example where one cause acts on three subjects and brings about three results.

Example 3	<i>Hasiba</i>	<i>Zayd^{um}</i>	<i>Amr^{am}</i>	<i>Fā'īlⁱⁿ</i> .
	verb	agent	object 1	object 2
	'āmil	ma'mūl 1	ma'mūl 2	ma'mūl 3
	fīl	fā'il	maf'ūl 1	maf'ūl 2

The meaning of the sentence is 'Zayd thought that Amr was Fā'īl.' 'Hasiba' is a transitive verb with two objects. As an 'āmil, it causes the pronunciation of 'Zayd' to be 'Zayd^{um}', because 'Zayd' is the agent in the sentence. 'Hasiba' also causes the word 'Amr' to be pronounced 'Amr^{am}' because it is the *maf'ūl*. The same is true for 'Fā'īl', the second *maf'ūl*, which is also pronounced 'Fā'īlⁱⁿ'.

So far we have examined the basic structure of the verbal sentence. Now I shall present the structure of the nominal sentence. A nominal sentence is so called because normally it begins with a noun. It has two parts: *mubtadā'* and *khobar*. Their ending (*i'rāb*) is *raf'* (the 'u' ending).

Here is an example of a simple nominal sentence:

Example 4	<i>Zayd^{um}</i>	<i>alim^{um}</i> .
	subject noun	predicate
	<i>mubtadā'</i>	<i>khobar</i>
	invisible 'āmil	invisible 'āmil
	ma'mūl	ma'mūl

The meaning is 'Zayd is a scholar.' 'Zayd' is pronounced 'Zayd^{um}' because it is the *mubtadā'*. What causes this change is an invisible factor ('āmil *ma'nawī*). Another invisible 'āmil causes 'alim' to be pronounced 'alim^{um}'.

Nominal sentences are not always so simple. Here is a more complex example:

Example 5	<i>Zayd^{um}</i>	<i>yu'allim^u</i>	<i>dars^{an}</i>	<i>tullāb^u hu.</i>
	subject noun	fīl (latent fā'il)	maf'ūl 1	maf'ūl 2
	<i>mubtadā'</i>	subject as-a sentence— <i>khobar ka jumlah</i>		
	invisible 'āmil	invisible 'āmil		
	ma'mūl	ma'mūl		

The meaning is 'Zayd is teaching a lesson to his students.' 'Zayd' is the *mubtadā'*; therefore it is pronounced 'Zayd^{un}'. The *khabar*, the second element in the nominal sentence, is not a word this time, rather it is a sentence, a verbal sentence. Consequently, we need to analyze the internal connections of the *khabar* as well. The sentence as a whole is the *ma'mūl* of the invisible cause. The outcome of the invisible '*āmil*' is also invisible; it is not on the level of utterance, it is a virtual one (*taqdīrī*).

My purpose is not to analyze the grammatical structure of sentences in Arabic. Rather I aim to illustrate how a causal analysis is carried out to demonstrate the reasons why the endings of words are pronounced differently. What is important for our purposes at the moment is to note how causal relations are defined, detected and operationalized during the analysis.

***Isnad*: Analysis of the Structure of Hermeneutic Relations**

Isnad is an analytical tool used to investigate the structure of hermeneutic relations in the sentence and the text. It is used to answer the question, 'How is a complex meaning variably constructed by solitary meanings?' It also helps to explain why the same utterances have different meanings on different occasions and settings. The answer is a relational one because the meaning of a speech is attributed to the constellation of its (1) internal relations, (2) external relations with other speeches, and (3) the social context. External relations with the larger discourse and social setting is called *al-āḥ*, which has the power of shaping the talk. Taftazani, the commentator of *Talkhīs al-Mijfā' li al-Sakkākī*, in his *Mukhtār al-Ma'ānī*, defines *al-āḥ* as the 'entire speech' (*al-kalām al-kullī*) which may be translated as 'discourse'.⁹ The context may normatively require a certain type of speech (*muqtadā' al-āḥ*) but does not determine it. The speakers customarily act according to the requirements of the situation, but they have the choice of deviating from it for exterior reasons. The *isnad* approach is structural but not deterministic, as it does not completely deprive the speaker of the power of choice.

⁹ Sa'd al-Dīn Mas'ūd ibn 'Umar ibn 'Abdullāh Taftāzānī, *Mukhtār al-Ma'ānī* (Qum, Iran: Muessestu Dar al-Fikr, AH 1411), p.27.

From the *isnad* perspective, which primarily operates on the level of meanings, there is only one type of sentence, and the distinction made between nominal and verbal sentences is disregarded. There is only one structure, which consists of the *musnad* (predicate) and the *musnad ilayh* (subject). I will use the same examples as above to demonstrate the contrast in outlook.

Here is a simple example. It is a verbal sentence, but this quality is no longer important for us here. What is important for us now is to identify the *musnad* and the *musnad ilayh*, and their relationship.

Example 1	<i>Qama</i>	<i>Zayd^{um}</i>
	predicate	subject
	musnad	musnad ilayh

'*Qama*' is the *musnad*, '*Zayd^{um}*' is the *musnad ilayh*. The meaning of '*qama*' is attributed to *Zayd*, thus we are informed that '*Zayd stood up.*'

Here is a more extended sentence. This time there are three words in the sentence, yet we know that *isnad* connects only two words. The concept of *ta'alluq* is introduced at this point to link the third word also to the network of relations in the sentence.

Example 2	' <i>Alima</i>	<i>Zayd^{um}</i>	<i>al-mas'alata</i> '.
	predicate	subject	object
	musnad	musnad ilayh	muta'allaq of the verb

'*Alima*' is the *musnad*, '*Zayd^{um}*' is the *musnad ilayh*, while '*al-mas'alata*' is a *muta'allaq* of '*alima*', so the relationship of the verb '*alima*' to '*Zayd^{um}*' is not the same as its relationship to '*al-mas'alata*'.

The number of *muta'allaqāt* may increase as illustrated by the following sentence:

Example 3	<i>Hasiba</i>	<i>Zayd^{um}</i>	<i>Amr^{an}</i>	<i>Fā'itⁱⁿ</i> .
	verb	subject	object	object
	musnad	musnad ilayh	muta'allaq 1	muta'allaq 2

Now let us examine how *isnad* is operationalized in the nominal sentences.

Example 4	<i>Zayd^{un}</i> subject musnad	<i>alim^{un}</i> predicate musnad ilayh
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The fact that a nominal sentence begins with a noun is not important from the perspective of *isnad* because the structure of interpretive relations is the same as that in the verbal sentence. There is again *musnad* and *musnad ilayh*. In the example, 'Zayd' is the subject and 'alim^{un}' is the predicate.

Here is a more complicated example in which the *musnad* is not a verb or a noun but a complex sentence.

Example 5	<i>Zayd^{un}</i> musnad ilayh	<i>yu'allim^{un}</i> <i>musnad</i>	<i>dars^{un}</i> muta'allaq 1	<i>tullāb^{un} hu</i> muta'allaq 2
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'Zayd^{un}' is the *musnad ilayh*, while 'yu'allim^{un}' is the *musnad*. 'Yu'allim^{un}' is not alone; it has two *muta'allaq*, one is 'dars^{un}', the other is 'tullāb^{un} hu'.

Speech (*kalām*) is, according to Ibn al-*mujaḥib*, two words with *isnad* which are not possible without two nouns, or a verb and a noun, because *isnad* must be made to a noun.¹⁰

The Relationship Between Causal and Interpretive Structures

Isnad and 'amal are two types of relationship between *mufradāt* (solitary words) as they serve as an element in the complex (*murakkaḥ*) structure of the speech, *kalām*. 'Amal belongs to the level of utterance while *isnad* belongs the level of meaning.

Humanists of the Arabic language did not reduce 'amal and *isnad* to each other, rather they kept them separate. Occasionally, two words may at once be linked through the 'amal and *isnad* relationship. This should be seen only as a coincidence and we should not be misled into thinking that they are the same; usually they do not converge.

¹⁰ Ibn al-*mujaḥib*, p.59.

For instance, the *ḵarf al-jarr* and the *majrūr*, the *mukāḵf* and the *mukāḵf ilayh*, the verb and its *mafʿūl* are not linked through *isnad*.

This creates the problem of defining the terms of the relationship between *ʿamal* and *isnad*. Is one the cause of the other? Or is there no relationship between them? This question is related to the question of how the two levels of utterances and meanings are connected. As noted earlier, Birgivi defined the changes in the utterance as an indication of the occurrence of different meanings. This is one possible way to demonstrate how the levels of utterance and meaning are connected.

The complex (*murakkaḵ*) meaning is an outcome of interaction between three levels: utterances (*alfāʿ*), solitary (*mufrad*) meanings and social context (*al-ḵāl*). The meaning charged to *isnad* derives from the interaction of these levels.

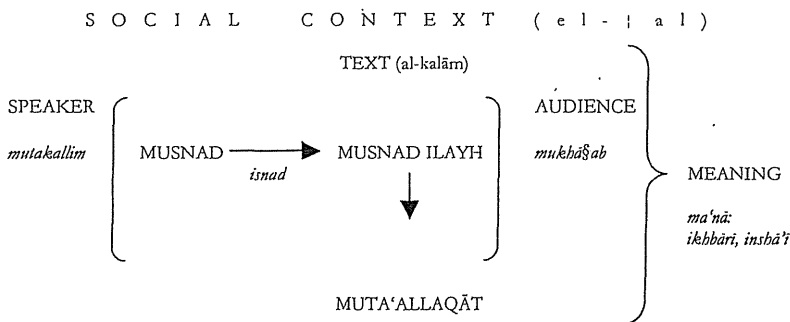


Figure 2: *Isnad* and the Structure of Interpretive Relations

The level of meaning is further elaborated by Al-Jurjani into two strata, the meaning and the meaning of meaning. The former level consists of the surface meaning of speech while the latter indicates the figurative and metaphorical meaning of speech. One of the examples Al-Jurjani uses is the phrase 'she is a woman who sleeps in the morning' (*naʿum al-ḵubā*). The surface meaning is understood and true, but it is not exactly what is meant by this sentence. We need to look for the meaning of the meaning. The sentence means, on the

metaphorical level, that she is an affluent person who has someone to take care of her needs.¹¹

Conclusion

I think it has become clear that what is wrong with our science is twofold. The first is that it tries to reduce phenomena to a single level rather than adopting a multilevel ontology. Secondly, it practices methodological monism which causes the advocates of each method to oppose other methods based on the common assumption that science can have only one method. This is what I call methodologically closed science. The alternative strategy I propose is a methodologically open science which adopts an ontology with multilayers where different methods specialize on different levels of reality. It is also possible that two different methods study the same level from different perspectives.

When presented with a non-causal relationship, the causal thinker finds himself in a dilemma. Either he follows the causal doctrine, shows disinterest, and says it is not the subject matter of science, or he is obliged to be unscientific if he wishes to pursue his interest in the topic. I think it is time to reconsider the prevailing fault which sees causality as the only way through which a scientist relates to the world. A similar mistake is committed by the advocates of the hermeneutic approach. They also reject causal explanation outright. For them, the only legitimate way of studying society is interpretive.

Such a monistic explanatory approach shrinks the domain of the knowable for us. Furthermore, it creates an inconsistency between the two worlds to which we belong: the world of knowing and the world of being. Presently, the world of knowing is narrower than the world of being because it adheres only to causal phenomena and leaves the rest aside. Thus, the world of knowing needs to be expanded to more fully reflect the world of being.

The Ottomans generally agreed that 'knowledge follows the

¹¹ Abdulkahir ibn Abdirrahman al-Jurjani, *Kitab Delail el-I'jā*, ed. M.M. Shakir (Cairo: Matbaa'tu'l-Medeni, 1992), p.262.

subject'.¹² Yet, from the methodologically monist perspective, we are doing the opposite by subjugating the known to our limited understanding of science. If our science is going to follow the subject, which is not only causal, then we are forced to adopt a methodologically pluralist attitude in science.

I assert that at the turn of a new millennium we need to open science to the concurrent use of a variety of explanatory strategies if we really want to close the door to a closed society. Thus, Wallerstein's call to open the profession of social sciences to the underprivileged or excluded sections of society is destined to fail if it continues to adopt a methodologically monist attitude with a unilayered ontology. An open science, which I believe should be the science of the Third Millennium, is a science that recognizes the legitimacy of a plurality of ways of knowing and doing science. Popper was right in reminding us that there is a strong connection between open society and open thought. Our aspiration for a truly open society requires an open science.

History shows that authoritarian regimes have always tried to dictate a closed science to society which they saw as favorable to their rule, but the true intellectuals resisted putting borders to scientific thought. They tried to keep science open to different alternatives even if it required a price. This type of resistance by a scholar has a specific name in Islamic culture: *mi}na*. The period of *mi}na* is characterized by the rise of a totalizing view of science backed by a suppressive political power. The prominent Muslim intellectuals, beginning with Abu Hanifa, Malik and Ahmad ibn Hanbal, readily faced challenges from authorities which aimed to subdue them to the totalitarian official science by risking their lives. The situation was not so different among the Western intellectuals who traditionally dedicated their lives to the ultimate and transcendental truth, as Benda depicts, until the intellectuals betrayed this tradition and put themselves under the service of modern national states and national ideologies.

¹² For this commonly used expression, see Habannaka al-Mīdānī, *@awābit al-Ma'rifa* (Damascus: Chicago University Press, 1988), p.357.

Today, which we proudly call the age of knowledge and globalization, the pressing question is *whose science* will prevail? Is it a closed science that excludes all other alternatives and dictates a single type of approach to the world, which will eventually bring about a closed society, or an inclusive scientific approach open to integrating alternative approaches to the world which will serve as the intellectual foundation for an open global society?

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