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DEDICATION

This issue of *Entelekya Logico-Metaphysical Review* has been dedicated to Necati Öner, died a short time ago, who is a valuable logician and honorable head of Turkish Philosophical Association. May he rest in peace.

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How to Define Definition: An Analysis on the Dispute about the Relation between the *Definiens* and the *Definiendum* in the Post-Avicennan Arabic Logic

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Abstract: As standing at the very heart of the conception (*taṣawwur*), the definition is not only the ultimate purpose of conception but also paves the way for the assent (*taṣdīq*). Therefore, it would merely be surprising to find definition sections at right after the principles of conception, namely five universals, and before the first part of assent, viz. the proposition, in the books compiled through the tradition of post-Avicennan Arabic logic. Having begun with identifying what definition is, definition sections proceed with its conditions, types, and the things that violate an ideal definition. This paper focuses on the *absolute definition* itself by considering it as a *definiendum* and its definition as its *definiens* to analyze whether this *definiens* satisfies one particular condition set in definition theory, namely the condition that a *definiens* must not be applied to anything other than the *definiendum*. In terms of this specific rule, we encounter with two opposing views on the convenience of the terms implying "necessity" (*istilzām*) utilized when formulating the *definiens* of absolute definition.

Keywords: Post-Avicennan logic, conception, assent, *definiendum*, *definiens*, definition, necessity.

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Introduction

Knowledge in general, logic in particular has come to be studied in the basis of a twofold classification consisting of conception at one hand and assent[1] at the other, while both of these sections have principles utilized to attain their objectives, viz. the definition and the syllogism respectively. Due to the fact that it is aimed at formulating a proper definition by combining common features with specific ones of a *definiendum*[2], five universals stand as principles of conception, since they are the very content with which definition is formulated, though it is controversial whether common accident (*'aradh 'āmm*) is of any use in definition. For a *definiens* must consist of common and specific features of the *definiendum*, we can apply this rule to also the *definiens* of the *absolute definiton*. For instance in the case in which *the absolute definition* is defined as "the statement whose conception necessitates (*yastalzimu*) the conception of the *definiendum*"[3] here *statement* is considered as the *genus* and rest of it as the *differentia*.

The problem is that whether this *differentia* is really enough to make *the absolute definition* differentiated from other things, particularly from *implicans* (*malzūm*) and the *definiendum* itself. That is to say, is it justified to set an argument claiming that

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[1] Assent is generally used as *taṣdīq's* corresponding term in English, though you may find a deep analysis of how to translate this term by Lameer. See Joep Lameer, *Conception and Belief in Sadr al-Dīn Shirāzī* (Tehran: Iranian Institute of Philosophy, 2006), 7-9; Lameer, "Ghayr al-Ma'lūm Yamtani' al-Ḥukm 'alayh: An Exploratory Anthology of a False Paradox in Medieval Islamic Philosophy," *Oriens* 42, no. 3–4 (2014), 403.

[2] As Avicenna puts it : "What makes a thing what it is is the sum of the things in common with other things and its own characteristics", Avicenna, *Kitāb ash-Shifā': al-Madkhal*, ed. Ömer Türker, *Kitabü'ş Şifa: Medhal* (İstanbul: Litera Yayıncılık, 2006), 30.

[3] Kātibī, *Risālat ash-Shamsiyya*, ed. C. Besbam Salih, *Sharḥ ar-Risālat ash-Shamsiyya li-Taftāzānī*, Amman: Dār an-Nūr al-Mubīn, 2016), 64; Taḥtānī, *Taḥrīr al-Qawā'id al-Manṭiqiyya fī Sharḥ ar-Risālāt ash-Shamsiyya*, ed. Ilyas Qabalan (Lebanon: Dār al-Kutub al-'Ilmiyya, 2014), 171; Taftāzānī, *Sharḥ al-Risālat ash-Shamsiyya*, ed. C. Besbam Salih (Amman: Dār an-Nūr al-Mubīn, 2016), 195.

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through the definition mentioned above, the *definiendum* itself stands as a *definiens* for its definition, and also the *implicans*[4] constitutes a definition for the *evident immediate implications* (*al-lawāzim al-bayyin*)? Although we find a common defiance against the argument that this way of defining definition does not actually prevent the *definiendum* itself from being true of its *definiens* and the *implicans* from being true of the *evident immediate implications* in Taḥtānī's (d. 1365) commentary on *Matāli' al-anwār*[5], Taftāzānī's (d. 1390) commentary on *Shamsiyya*[6] and Sayyid Sharīf al-Jurjānī's (d.1413) gloss[7] on Taḥtānī's *Taḥrīr al-qawā'id,* Samarqandī (d. 1322) is the one who explicitly advocates this argument. Also, Dawānī (d. 1502), who "had a powerful impcact on Ottoman intellectual life"[8], seems to go along with Samarqandī on this matter[9]. Therefore the argument asserting that the *definiens* of the *absolute definition* does not satisfy the condition of being true of the *definiendum* only (*māni'*) is twofold: the first holds that the *definiendum* itself also provides the definition for its *definiens* since they are *identical in essence* (*muttaḥidān dhātan*) while the second asserting that *implicans* also must be regarded as definition. Thus, it is asserted that the definition which is formulated for the *absolute definition* by some prominent scholars in the post-Avicennan period is argued to have been violated by including two things: *definiendum* itself, and the *implicans*. In this paper, our concern will be the latter.

To analyze both the *definiens* of the *absolute definition* and

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[4] According to Arabic-Islamic logicians what implies corresponds with *al-malzūm* (*implicans*) and what is implied with *al-lāzim* (Khaled El-Rouayheb, *Relational Syllogisms and the History of Arabic Logic* (Leiden: Brill, 2010), 264.

[5] Taḥtānī, Taḥrīr al-Qawā'id al-Manṭiqiyya fī Sharḥ ar-Risālāt ash-Shamsiyya, 196-7.

[6] Taftāzānī, *Sharḥ Al-Risālat Al-Shamsiyya, 196*.

[7] Jurjānī, *Ḥāshiya 'alā Sharḥ ash-Shamsiyya*, ed. Muḥsin Bīdarfar (Qum: Manshūrāt al-Bīdār, 2005), 208-9.

[8] Khaled El-Rouayheb, *Islamic Intellectual History in the Seventeenth Century: Scholarly Currents in the Ottoman Empire and the Maghreb* (Cambridge: Cambridge University Press, 2015), 30.

[9] Dawānī, *Sharḥ al-Muḥaqqiq Dawānī wa 'Abdullāh al-Yazdī 'alā Tahdhīb al-Manṭiq li-Taftāzānī*, ed. Aḥmad al-Malibārī (Kuwait: Dār aḍ-Ḍiyā', 2014), 165.

the argument set against, we first begin with taking a look at the definition provided for the *absolute definition* by Avicenna and the particular section on the relation between the *definiendum* and the *definiens* in his *Metaphysics*, then the prominent scholars in the post-Avicennan period, and will go deep with assessments of the scholars who got involved in the matter.

Avicenna on Defining Definition

Having stated that the definition theory shall be examined deeply in the *Posterior Analytics*, in *al-Madḥal*, the first book of *al-Shifa*, Avicenna (d. 1037) asserts that "only if the meaning of the thing (*dhāt*) is compound of various meanings there is a *definiens* for it". Here, after stressing that only for compound things there can be found a definition, since the definition itself is also compound of meanings, Avicenna defines the *absolute definition* as a "statement which is compounded of the meanings with which we obtain its essence"[10]. When we look at his Metaphysics, there is a distinct chapter on the definition and the relation between *definiens* and the *definiendum* in which he examines definition in close relation with his understanding of essence-existence. While the efficient causes are related to existence and not the essence, components of the the definition stand as the causes for the essence. Thus existence may be regarded in relation with description, and essence with the definiton[11]. Regarding this, he makes a clear distinction between definition (*ḥadd*) and description (*rasm*). Therefore, when the definitions given by Avicenna are examined it is evident that the relation between essence and the definition are clearly pointed out:

الحد قول دال على ماهية الشئ

The definition is the phrase signifying the quiddity of the thing[12].

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[10] Avicenna, *Kitāb ash-Shifā': al-Madkhal (Kitabü'ş Şifa: Medhal)*, 41.

[11] Avicenna, *Kitāb ash-Shifā': al-Burhān,* ed. Ömer Türker, *Kitabü'ş Şifa: Burhan* (İstanbul: Litera Yayıncılık, 2006), 204.

[12] Avicenna, *Remarks and Admonisions,* ed. Shams C. Inati (Wetteren: Universa Press, 1983), 70.

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<div dir="rtl">لأن الحد هو يدل على ماهية</div>

For definition is that which indicates quiddity[13].

The quotations above indicate that Avicenna's theory of definition is closely linked with his metaphysics. In relation with this, what can be drawn from the definitions formulated for the *absolute definition* by him is that he makes a clear distinction between the definition (*ḥadd*) and the description (*rasm*) corresponding them with the essence and the existence respectively[14].

Definition After Avicenna

When we examine how the definition is defined after Avicenna, it is important to note that later logicians must have been acquainted with Fakhr al-Dīn al-Rāzī's (d. 1210) criticism against the *complete definition*[15] and it must have affected the way they treated definiton, yet this part of the matter exceeds our account in this paper.

Regarding the definitions formulated for the *absolute definiton* after Rāzī it is apparent that there can be found two different statements one of which points out the necessary relation between the *definiens* and the *definiendum* while the other includes no such thing. Though Khūnajī (d. 1248) may be regarded as the first to provide a definition for the *absolute definition* which includes a necessary relation between the *definiens* and the *definiendum*, Kātibī (d. 1277), who is among those influenced by Khūnajī[16], presents a new definition which we have not seen in

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[13] Avicenna, *The Metaphysics of the Healing*, ed. Michael Marmura (Provo: Brigham Young University, 2005), 216.

[14] Avicenna, *Kitāb ash-Shifā': al-Burhān (Kitabü'ş Şifa: Burhan)*, 204.

[15] For a detailed account of the matter see Mehmet Özturan, "An Introduction to the Critique of the Theory of Definition in Arabic Logic: Is Complete Definition Circular?," *Nazariyat: Journal for the History of Islamic Philosophy and Sciences* 4, no. 3 (2018): 83–114 ; Eşref Altaş, *Fahreddin er-Râzî'nin İbn Sînâ Yorumu, "Fahreddin Er-Râzî'nin İbn Sina Yorumu ve Eleştirisi* (İstanbul: İz Yayıncılık, 2009) ; Bilal Ibrahim, *Freeing Philosophy from Metaphysics: Fakhr Al-Dīn Al-Rāzī's Philosophical Approach to the Study of Natural Phenomena*, PhD Thesis (Montreal: Mcgill University, 2013).

[16] Khūnajī, *Kashf al-Asrār 'an Ghawāmīz al-Afkār*, ed. Khaled el-Rouayheb (Berlin & Tehran: Free University of Berlin, Institute for Islamic Studies & Iranian

Avicenna's works[17].Yet, what makes Kātibī's definition more interesting is the way his commentators accepting and defending it. Before we examine the definition proposed by Kātibī and defended by his commentators we will first endeavour clarifying the definition given by Khūnajī.

As being one of the prominent scholars whose works were regarded as reference books[18], Khūnajī is said to have introduced several novelties in his remarkable logic book *Kashf al-asrār* which "had a powerful impact" on the succeeding scholars[19]. And here is how he defines the *absolute definition*:

المعرف للشيء ما تكون معرفته سببا لمعرفة الشيء

The *definiens* of the thing is that of which knowledge is the cause of the knowledge of the thing [defined][20].

Similarly, in his short logic handbook, *al-Jumal*, which most probably predates *al-Kashf*[21], his definition here is somewhat a short one:

والمعرف الشئ ما معرفته سبب معرفته[22]

The *definiens* of the thing is that of which knowledge is the cause of its knowledge.

As seen above, Khūnajī reveals a necessary relation between the *definiens* and the *definiendum* in terms of aquaring the knowledge of the latter.

When we look at the way in which another prominent scholar, who is a contemporary of Khūnajī, Abharī (d. 1265) defines *the absolute definition*, we encounter with two different formulations one of which is the same with Avicenna's definition in the

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Institute for Philosophy, 2010), vi.

17 Mehmet Özturan, "Müteahhirîn Dönemi Mantığında Tasavvurat: Ali b. Ömer Kâtibî ve Kutbuddin Râzî Örneği" (İstanbul: İstanbul Üniversitesi, 2013), 255.

18 Ibn Khaldūn, *The Muqaddimah: An Introduction to History*, ed. Franz Rosenthal (London: Routledge & Kegan Paul, 1958), III 143.

19 Khūnajī, *Kashf al-Asrār 'an Ghawāmīz al-Afkār*, xxi, xxv, xlviii.

20 Khūnajī, *Kashf al-Asrār 'an Ghawāmīz al-Afkār*, 61.

21 Khūnajī, *Kashf al-Asrār 'an Ghawāmīz al-Afkār*, xlix.

22 Khūnajī, *al-Jumal*, Süleymaniye, Şehid Ali Paşa, no. 1805, 3a.

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Remarks and Admonitions[23]. In his short epitome *'Īsaghūjī*, which has served as a textbook for a long time in the Ottoman scholarly circles, he defines it, in accordance with Avicenna, as follows:

قول دال على ماهية الشيء[24]

A statement that indicates the essence of the thing.

Yet, in his comprehensive book named *Kashf al-ḥaqā'iq* we come across with a completely different formulation which seems closer to the one we found in Khūnajī:

المعرف لماهية الشيء هو الذى يوجب تصوره تصورها [...][25]

Definiens of the essence of the thing is that whose conception requires the conception of that thing [...].

While Khūnajī uses the terms "knowledge" and "cause" Abharī uses "conception" and "require" which they have similar meanings respectively.

As Khaled el-Rouayheb discusses which of these two prominent scholars might have an impact on the other regarding topics related to logic in his detailed *introduction* to *Kashf al-asrār[26]*, mostly relying upon Kātibī's statements in his monumental commentary on *al-Kashf*, it would not be wrong to say that it is more likely that Abharī might be the one who was influenced by Khūnajī both in general and in this particular matter.

Due to the fact that having been influenced by Khūnajī[27], and being among Abharī's students[28], Kātibī stands as an important figure to shape the problem. Thus, it is important to pay attention to his way of defining the *absolute definition*. In his *al-Shamsiyya*, another essential handbook on logic studied in the Ottoman pe-

23   Avicenna, *Remarks and Admonisions, 70.*
24   Abharī, *Īsāghūji*, ed. Talha Alp, *Mantık: İsagoci Tercümesi & Mantık Terimleri Sözlüğü* (İstanbul: Yasin Yayınevi, 2013), 18.
25   Abharī, *Kashf al-Ḥaqā'iq*, ed. Hüseyin Sarıoğlu. *Keşfü'l-Hakâik fî Tahrîri'd-Dekâik* (İstanbul: Çantay Kitabevi, 2001), 47.
26   Introduction, Khūnajī, *Kashf al-Asrār 'an Ghawāmiz al-Afkār*, xxiv-xxv.
27   Khūnajī, *Kashf al-Asrār 'an Ghawāmiz al-Afkār*, vi.
28   Müstakim Arıcı, *Fahreddin Râzî Sonrası Metafizik Düşünce: Kâtibî Örneği* (İstanbul: Klasik, 2015), 44.

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riod for a long time, which has almost thirty[29] commentaries composed by notable scholars, he defines it as follows:

المعرف للشي ء هو الذي يستلزم تصوره تصور ذلك الشيء أو امتيازه عن كل ما عداه[30]

The *definiens* of the thing is that of which conception necessitates the conception of the thing, or its distinction from everything else.

And similarly in his much more detailed logic book when compared to *al-Shamsiyya*, defition is defined as follows:

والمعرف للشيء هو الذي تصوره يقتضي تصور ذلك الشيء أو تمييزه عن كل ماعداه[31]

The *definiens* of the thing is that of which conception entails the conception of the thing, or its distinction from everything else.

In his another book on logic, *'Ayn al-Qawā'id*, we found that:

أو تمييزه عن كل ماعداه[32] الشيء تصور يوجب تصوره والمعرف للشيء هو الذي

The *definiens* of the thing is that of which conception requires the conception of the thing, or its distinction from everything else.

Also in *Baḥr al-Fawā'id*, his own commentary on the previous work, he explains it as:

تصور ذلك الشيء أو تمييزه عن كل ماعداه[33] يقتضي تصوره والمعرف للشيء هو الذي

The *definiens* of the thing is that of which conception entails the conception of the thing defined, or its distinction from everything else.

What we found in all these definitions quoted from his works on logic is that all of them implies a *necessary* relation between the *definiens* and the *definiendum*, though they are slightly altered from each other. Another important point is that when it is the case to point to the necessity, he uses different words corresponding with each other, but he prefers only the "conception" as referring to the meaning of the thing in the

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mind. And this is obviously not the word which was preferred by Khūnajī. Regarding this, Taftāzānī, one of the prominent scholars in the fourteeth century, states that " Kātibī abandoned the later logicians' definition" which is as follows:

المعرف الشيء بما يكون معرفته سببا لمعرفته[34]

The *definiens* of the thing is that of which knowledge is the cause of the thing.

According to Taftāzānī, the term "knowledge" used in the above mentioned statement, requires this definition to be true of the *definiens* which have broader extention than the *definiendum,* so that is why Kātibī abondened it and formulated a new one. This may be regarded as a supporting evidence for that the one who influenced Kātibī when modifying the definition presented by Khūnajī in the first place was his teacher Abharī, since he also uses the term "conception of thing" rather than "knowledge"[35].

Samarqandī's Challenge

Shams al-Dīn al-Samarqandī (d. 1322)[36] in his outstanding book debates about the change in defining definition as follows:

قال قوم من المتأخرين: المعرف للشيء ما يكون تصوره سببا لتصور الشيء أو لتميزه٠ و فيه نظر لأنه يوجب أن يكون الملزومات معرفات للوازمها البينة [...][37]

Some of the later scholars said that: The *definiens* of a thing is that of which conception is the the cause of the conception of the thing, or its distinction from everything else. But this is controversial because this requires the *implicans* to be definitions for their *evident immediate implications.*

It is most probably that he refers to Khūnajī and Kātibī with

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[34] Taftāzānī, *Sharḥ Al-Risālat Al-Shamsiyya, 195.*

[35] Abharī, *Kashf al-Ḥaqā'iq (Keşfü'l-Hakâik fî Tahrîri'd-Dekâik),* 47.

[36] For more information about his date of death see Introduction, Samarqandī, *Qisṭās al-Afkār fī Taḥqīq al-Asrār,* ed. Necmeddin Pehlivan (İstanbul: Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, 2014), 20; Mehmet Sami Baga, "El-İşârât'ın '"Garip"' Bir Şerhinin Müellifi: Şemsüddin Semerkandî ve Beşârâtü'l -İşârât Adlı Eseri," *Bingöl Üniversitesi İlahiyat Fakültesi Dergisi* 3, no. 5 (2015): 221–46, 229.

[37] Samarqandī, *Qisṭās al-Afkār fī Taḥqīq al-Asrār*, 150.

saying that "some of the later scholars". Having stated the deficiency of this way of definition, Samarqandī takes the old path, stating that:

المعرف هو القول الدال على ماهية الشيء[38]

The definiens is the statement that indicates the essence of the thing.

Here, Samarqandī asserts that defining definition in the way which includes some kind of necessary relation between the *definiens* and the *definiendum* results with a substantional problem causing it be true of *implicans* too. Because of that, he chooses to define the *absolute definiton* almost exactly the same way with Avicenna.

What about *al-Shamsiyya* Commentators?

Although Taḥtānī does not make any deeper comment on the matter apart from stating the definition as "the means to the conceptual knowledge"[39] in his commentary on *al-Shamsiyya*, he did commented in the one he wrote for ʿUrmawī's detailed book, *Sharḥ al-Matālī al-Anwār*. Having refused the argument raised by Samarqandī that the definition of the *definiens* formulated by Kātibī in *al-Shamsiyya* allows *implicans* to stand as *definiens* regarding their *evident immediate implications*[40], he clarifies his position in the following way. What is meant with the phrase "conception of the thing" mentioned in the definition in question actually implies the "conception that is acquired", which demands the means of thought (*naẓar*) in the process of formulating a definition. Through *naẓar* process, first something is realized in a way, then its essential and accidental properties are subjected to elaboration, only then some of those properties are put together to obtain its conceptual knowledge, that is, definition. Yet, it is not the case with *implicans* regarding their *evident*

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[38] Samarqandī, *Qisṭās al-Afkār fī Taḥqīq al-Asrār*, 150.

[39] Taḥtānī, *Taḥrīr al-Qawāʿid al-Manṭiqiyya fī Sharḥ ar-Risālāt ash-Shamsiyya*, 115.

[40] Taḥtānī, *Sharḥ al-Maṭāliʿ*, ed. ʿAli Asghar Jaghfarī Walanī (Tehran: Muassasat-i Intisharāt-i Dānishgāh-i Tehran, 1393H), 196.

immediate implications, since there is no such *naẓar* process in-volved in it[41]. Here, Taḥtānī draws a strict line between what is gained through *naẓar* and what is not, clarifying the process of *naẓar*. According to him, whenever we think about, say, the word "ceiling", another ones "wall" crossing our minds at that moment is not related to *naẓar* process in contrast with defining the cei-ling[42]. Although the former requires the meaning of latter in our minds, since no ceiling can be contamplated without walls, as causing its meaining crossing our minds at that very moment it is thought, this is not enough to claim that ceiling stands as a defini-tion for the wall.

Taftāzānī also shed light on the topic in his commentary on *al-Shamsiyya*. He basically follows his teacher, Taḥtānī, claiming that formulating a definition involves *naẓar* process on the cont-rary of the way in which *implicans* requires *evident immediate implications* which cannot be predicated of[43].

Moreover, an equally eminent contemporary and rival of Taftāzānī, Jurjānī tackles the argument put forth in critisizing Kātibī's definition in a way which is not distinct from his teacher, nor from his contemporary. In his super-commentary on Taḥtānī's commentary on *al-Shamsiyya*, *Taḥrīr al-Qawāʿid*, he explains what Taḥtānī actually means by "that the conception of *definiens* requires the conception of *definiendum*" by saying that it actually should be considered as "that the conception of *defini-ens* is the *means* to the conception of *definiendum* through nazar process". And again, malzumat can not be regarded as satisfying this definition since there is no *naẓar* process involved in it.

Dawānī's Assesment on Taftāzānī

In his commentary on Taftāzānī's well-known textbook which has been widely studied in the Ottoman period, *Tahdhīb al-manṭiq*, Dawānī points out the change in the way the definition

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[41] Taḥtānī, *Sharḥ al-Maṭāliʿ*, 197.
[42] Taḥtānī, *Sharḥ al-Maṭāliʿ*, 196.
[43] Taftāzānī, *Sharḥ Al-Risālat Al-Shamsiyya, 196.*

is defined. While Taftāzānī defines the *absolute definiton* as "the means to the conceptual knowledge" in his influential kalām work *Sharḥ al-Maqāsid*[44]; he defends Kātibī's way of defining it in his commentary on *al-Shamsiyya*. However, when we look at his book's short logic part, *Tahdhīb*, we found that he does not utilize anyword meaning necessity nor does he mentions about the essence of the *definiendum*. Here is the definition:

معرف الشيء ما يقال عليه لإفادة تصوره[45]

Definiens of the thing is that which is predicated of the thing in order to acknowledge its conception.

In accordance with this, Dawānī pays attention to what could possibly be the motive behind this alteration, stating that "Taftāzānī abandoned the well-known phrase which is "that of which conception requires the conception [of the *definiendum*]" since it is spoiled by the *implicans* with regards to the *evident immediate implications*"[46]. Apparently he thinks that Taftāzānī took the cunter-argument raised by Samarqandī seriously, in spite of the fact that he defended Kātibī's position in his commentary on *al-Shamsiyya*. Similarly, having mentioned about the way of clarification of the well-known definition in his commentary on *Tahdhīb*, Dawānī cocludes that the defiance is deficient[47].

Conclusion

Definition theory, besides its being closely tied with metaphysics in the system of Avicenna, seems to be revised in the post-Avicennan period. Although it is likely that the change took place in defining definition after Avicenna has much owing to Fakhr al-Dīn Rāzī's account and critique of Avicennan theory of definition, this would exceeds the aim of this paper. As a matter

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[44] Taftāzānī, *Sharḥ al-Maqāsid* (Lebanon: Dār al-Kutub al-'Ilmiyya), I 123.

[45] Taftāzānī, *Tahdhīb al-Manṭiq*, ed. 'Abd al-Qāhir al-Qurdī (Cairo: Maṭba'at as-Sa'āda, 1912), 7.

[46] Dawānī, *Sharḥ al-Muḥaqqiq Dawānī wa 'Abdullāh al-Yazdī 'alā Tahdhīb al-Manṭiq li-Taftāzānī*, 165.

[47] Dawānī, *Sharḥ al-Muḥaqqiq Dawānī wa 'Abdullāh al-Yazdī 'alā Tahdhīb al-Manṭiq li-Taftāzānī*, 165.

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of fact, it would not be wrong to say that there are two different views on how to define definition in the post-Avicennan Arabic logic: one belongs to those who follow Avicenna, implicating no such notion as necessity between the *definiens* and the *definiendum*, and the other view is of the group which includes Khūnajī, Kātibī, Taḥtānī. According to Dawānī's assessment we can regard Taftazani as he had defended Kātibī first, but then changed his mind in his short epitome. Samarqandī, on the other hand, clearly indicates that the way Khūnajī define the *absolute definition* and its slightly modified version by Kātibī results in this definitions being true of the *implicans*, causing it violate a *sine qua non* rule, which a *definiens* must be applicable to only its *definiendum* and nothing else. In a similar way, Dawānī also criticises the matter concluding that the verification provided by Taḥtānī is actually of no use. Whether the definition which was provided by Avicenna and defended by Samarqandī or the one formulated by Khūnajī and slightly altered by Kātibī has overcome in the Ottoman tradition of logic would be the topic of another research.

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Technology from Ortega y Gasset's Perspective: Means to Realize Human Being's Nature[*]

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Abstract: As the most influential Spanish philosopher of the twentieth century José Ortega y Gasset wrote on a large variety of topics including technology and he is considered as one of the first philosophers who addressed the question of technology. In this study, after giving brief information on the main approaches in the philosophy of technology and on Ortega's place among these approaches, I will present Ortega's consideration of the problem of technology within his general philosophy and show how Ortega discusses the relation between men and technology, how he describes the characteristics of both previous technologies and modern technology and to which problems/dangers he draws attention related to modern technology. So this study aims to emphasize his contribution to the contemporary debate over technology in the light of his relevant writings.

Keywords: Ortega y Gasset, philosophy of technology, technique, Man the Technician, Meditation on Technics.

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[*]   This study is partially based on the paper titled "On José Ortega y Gasset's Approach to Technology" presented (not published) at *1st International Scientific Researches Congress Humanity and Social Sciences* in 2016, Madrid.

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Introduction

Philosophy has concerned with not only theoretical problems but also practical problems relevant to life. Even if the concerns for practical problems can be traced to ancient times, actual debates regarding practical questions generally remained as a secondary concern throughout the history of philosophy. The situation has changed with realizing the significant influence of practical issues on the human being. Especially during the last century developments in techno-science gave rise to challenging issues and these issues day by day become progressively more complicated.

As human beings of the 21st century, we live inside the *technosphere* that surrounds us. Within this technological context every day, explicitly or implicitly, weighty decisions are being made about technology and so about our lives. As everyone would agree, in our time, technology has opened new possibilities for actions and made it possible to attempt almost everything. This pervasive technology has associated ethical, social, and environmental consequences. Because technology comes to include nearly every sphere of human life and shapes the mode of our existence, human being relationship to technology is not simple but complicated. It is not possible to understand human being and existence with ignoring this forefront phenomenon in this age. As a result of this, it is absolutely essential that we need to deepen our philosophical understanding and to develop new perspectives on technology.

Within this context, it could be helpful for us to look back and to take into account the contributions that were made earlier. With recognizing the need for philosophical reflection on technology, it has questioned during the last quarter of the nineteenth century and most of the twentieth century by philosophers. Jose Ortega Y Gasset (1883–1955) is one such thinker who may be said to have implied current developments and prob-

lems.[1] It is important to note for our purpose that the most influential Spanish philosopher of the twentieth century Ortega is considered as one of the first philosophers who addressed the question of technology. He contributed to the contemporary debate over technology in a number of works but especially in his course of 1933 notes appeared later in the book entitled *Meditación de la técnica* (Man the Technician) in 1939, in which he made technology an explicit theme for critical reflection. The other works are his well-known book *La rebelión de las masas* (The Revolt of the Masses) in 1929 and a later text based on a talk delivered in Darmstadt in 1951 called *Der Mythus des Menschen hinter der Technik* (The Myth of Humanity Outside Technology).[2]

Encountering some unintended effects of technology in his time, Ortega was aware of that we need to understand the nature of technology and place the problems posed by technology in philosophy. With this awareness, *Man the Technician* begins with his noteworthy prediction: "One of the themes to be discussed in the coming years is that of the advantages, the threat and the limitation of technology."[3]

The Place of Ortega's Approach in the Field

Before handling his approach to technology I want to point out his stance in the field of the philosophy of technology. In order to address the field in a more systematic way philosophers have been classified the approaches. According to Carl Mitcham's distinction who distinguishes between humanities philosophy of technology and engineering philosophy of technology, Ortega is in the first category whose point of departure is the social sciences and the humanities rather than from the practice of techno-

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1   Patrick Dust, "Freedom, Power, and Culture in Ortega y Gasset's Philosophy of Technology," *Research in Philosophy and Technology* 11 (1991), 120.
2   Vicente Bellver Capella, "Ortega y Gasset, Jose," *Encyclopedia of Science, Technology, and Ethics,* ed. Carl Mitcham (New York: Macmillan Reference, 2005), III 1373; Dust, "Freedom, Power, and Culture in Ortega y Gasset's Philosophy of Technology," 120.
3   José Ortega y Gasset, "Man the Technician," *History as a System and Other Essays toward a Philosophy of History* (New York: Norton, 1961), 87.

logy.[4] According to the classifications which regard to the historical process, Ortega is considered among the first generation philosophers (or classical humanities philosophers of technology). Differently from the contemporary philosophies of technology which have an empirical character in general, much of the first generation European philosophers' reaction to technology was negative because of witnessing two world wars, total city destruction by firebombing, the Manhattan Project to produce the atomic bomb, etc. Especially after World War II, among some philosophers the negative evaluation of technology would become more stringent. But Ortega's position differs from the first generation philosophers in this respect. He took a less negative view relevant to modern technology comparing the other philosophers who handled the technology in the European tradition like Martin Heidegger (1889–1976), Herbert Marcuse (1898–1979), Jacques Ellul (1912–1994).[5]

Indeed, Ortega both pointing out the risks of modern technology and acknowledges the positive aspect of technology, its intimate engagement with what it means to be human. With these kinds of considerations, Ortega couldn't be considered as dystopian. But as Dust mentioned, this not means that Ortega is a naive technocrat who idealizes the power that technology or he cannot be said to be a naive optimist. Because Ortega is aware of the problematic character of modern technology and more than some people today who enthusiastically celebrate the achievements of technology, he recognized the dangers of this temptation.[6]

The last distinction that I want to mention is the classification based on the approaches of philosophical schools to technology. Though there are differences in the way that the philosop-

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[4]   Carl Mitcham, *Thinking Through Technology: The Path between Engineering and Philosophy* (Chicago: The University of Chicago Press, 1994), 17, 62-63.

[5]   See Don Ihde, *Philosophy of Technology: An Introduction* (New York: Paragon House, 1993), 32-35.

[6]   Capella, "Ortega y Gasset, Jose," III 1375; Dust, "Freedom, Power, and Culture in Ortega y Gasset's Philosophy of Technology," 127.

hers consider the problem, the philosophical attitude of a school and the main issues that they have acquired have shaped their perspectives towards technology. Phenomenological tradition, Critical Theory, Existentialism, Pragmatism, Feminism are among these schools that make philosophical evaluations about technology. Even if in some categorizations Ortega considered an existentialist because of his emphasis on existentialist themes and considerations on human nature, as Mitcham mentioned he eschews the term "existentialism" in favor of "ratio-vitalism".[7] Ratio-vitalism is the name Ortega himself gave to his philosophy in his article "Neither Vitalism nor Rationalism". Ratio-vitalism indicates an idea of reason which is not opposed to life. He acknowledges both human rationality and the irrational dimensions of existence.[8]

Technology from Ortega's Ratio-vitalist Perspective

Since Ortega's philosophy of technology rests on his view of the human being as a being who makes himself, to show his approach to the technology within his general philosophy I need to start with his vision of "man" and "being" and how he understands the relation between man and technology. According to him, technics is necessarily involved with "what is to be human" and he understands technology as an activity grounded in human nature and the principal means for realizing this nature.[9] For him, "man without technology is not man".[10]

In his first book *Meditations on Quixote* he declares his understanding of what is to be human with this well-known state-

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[7] See Mitcham, *Thinking through Technology*, 46.

[8] See. Jose Ferrater Mora and Josep M. Terricabras, *Three Spanish Philosophers: Unamuno, Ortega, Ferrater Mora* (Albany: State University of New York Press, 2003), 157-160.

[9] Carl Mitcham and Robert Mackey, "Technology as a Philosophical Problem," *Philosophy and Technology: Readings in the philosophical problems of technology,* ed. Carl Mitcham and Robert Mackey (New York: The Free Press, 1983) 20.

[10] Gasset, "Man the Technician," 96.

ment: "I am myself plus my circumstances."[11] It means we could not consist of ourselves in isolation from our circumstances. This expression also claims that our life is the point of departure for any philosophical understanding. So we may say that his understanding of technology is based on the idea of man as entailing a relationship with ever-changing circumstances as well. But in these circumstances, man is not passive, but an active one.[12]

The first part of his *Meditations on Technics* develops this thesis in detail. For him, in this world human finds himself surrounded by both facilities and difficulties. Because he finds difficulties and is challenged, man's existence is not a passive being in the world. Differently from a stone which need not fight for being what it is, man has to be himself and make his own existence at every single moment in these circumstances with an effort towards it. He must earn his life not only economically but also metaphysically.[13] In contrast to other creations man has to act in order to be and so life is not just contemplation, theory, thinking, etc. but action. Briefly, for Ortega, human life is production. To live is to find means and ways to realize our existence. So we can see why man begins where technology begins.[14]

According to Ortega, human beings differ from all other beings by inventing and carrying out the second set of actions (for instance he lights a fire, he designs the automobile). These kinds of actions presuppose and include the invention of a procedure which guarantees, within certain limits, that we can obtain at our pleasure and convenience the things we need but do not find in nature. These actions which modify and reform nature and constitute technology are exclusively human. After this introduction, he gives his definition of technology: The improvement brought about on nature by man for the satisfaction of his neces-

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[11] He also adds that this expression which appears in his first book sums up his philosophical thought. José Ortega y Gasset, *Meditations on Quixote,* trans. Evelyn Rugg and Diego Marin (New York: Norton, 1961), 13.
[12] Mitcham, *Thinking through Technology,* 46.
[13] Gasset, "Man the Technician," 110-111.
[14] Gasset, "Man the Technician," 116-117.

sities. The necessities are imposed on man by nature; man answers by imposing changes on nature. For Ortega, it is the token of human being to react upon his environment, not to resign himself to the world as it is. Therefore, technology is man's reaction upon nature or circumstances. It leads to the constitution of a new nature, a super nature interposed between man and original nature. Technology is a reform of nature in the sense of abolishing necessities by guaranteeing their satisfaction under all circumstances and to meet all human requirements.[15]

Ortega also emphasizes that technology is not men's effort to satisfy his natural necessities. This basically means that technology is important for us not because it can satisfy our basic biological needs (because for this aim our animal instincts would have been enough). But, it is so important by satisfying other needs that make our life truly human. Because human beings do not wish merely to "be in the world", but they wish "well-being" in it. And the desire to live is inseparable from their desire to live well.[16] Even Ortega claims that man, technology and well-being are synonymous.[17] Similarly, at the beginning of his presentation "The Myth of Humanity outside Technology," he also mentioned human being as a technical being. The intelligence of human being gives rise to an insatisfaction and due to this, he wants to desire to create new world, and thus to technics. So, technology is a general term for man's self-creative actions.[18]

After identifying the relationship between man and technology, Ortega describes the changing nature of this activity. For him, technology proceeds through two distinct stages. First, there is an inventive wish or creative desire that defines a program or attitude toward the world which man wants to realize according to his necessities, his idea of human life or his profile of well-being. The second is the material realization of that program

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[15] Gasset, "Man the Technician," 94-95.
[16] Gasset, "Man the Technician," 95-98.
[17] Gasset, "Man the Technician," 100.
[18] Mitcham, *Thinking through Technology*, 47.

with certain technics. Once a man has decided what he wants to become (what he wants to make himself, whether this is a bodhisattva, gentlemen, or hidalgo) he needs certain technical requirements for the realization of this project. Normally, these requirements will differ according to the project to be realized. So, there are as many different kinds of technology as there are human projects. Therefore, we may say that for him, technology is a function of the variable program of man.[19]

As a result of this view Ortega opposes to and warns against an injudicious tendency of his time to believe that there is not any technology exists except the present Americo-European technology, and that all others are only awkward stammerings, rudimentary attempts. He sees Americo-European technology as one human project among all others. But he wants to comprehend why modern technology has appeared to us with some semblance of truth and par excellence. [20]

The Character of Modern Technology

Even though technology has been important throughout history, our time differs from other ages as the age of technology. In our time, as Ortega emphasizes the relation between man and technology had been raised to extraordinarily high power.[21] In order to understand the specific character of modern technology and to see how it could play quite a different role from previous ages, he develops a history of technology by defining the various stages in the evolution of technology. For him, the best criterion to delimit these periods is again the relation between man and technology. Delimiting is based on examination of humanity's changing consciousness of its own making and doing. He argues that there have been three such stages.[22]

According to his classification, there are three main periods

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[19] Mitcham and Mackey, "Technology as a Philosophical Problem," 20; Gasset, "Man the Technician," 101-102.
[20] Gasset, "Man the Technician," 137-138.
[21] Gasset, "Man the Technician," 138-139.
[22] Gasset, "Man the Technician," 139-141.

in the historical development of technology: The technology of chance, the technology of the craftsman and the technology of the technician.[23] In the first period what he calls "technology of chance", human beings were not aware of their technology and could not distinguished technology from their natural acts. These acts appeared to them as part of their natural life. At this stage, technology did not reveal its characteristic aspect, that of the invention. And man did not consider himself as *homo faber*.[24] The second period, "technology of artisan" is the technology of Greek, Rome and Middle Ages. In this period the repertory of technical acts had developed relatively. Technical acts had increased both in number and complexity. Certain technics like blacksmithing, masonry were passed from the previous to the next generation by a special class called artisans. At this second stage, it was recognized that technical acts are not natural and these skills peculiar to man. But human beings still did not realize their capacity for invention because the technical advances were considered not "inventions" but variations within a craft tradition. The other reason is the invention in this period had produced only tools, not machines. So there was no systematic study called technology that we refer today.[25] The last period in which he lives, "the technology of the technician". Since technology becomes mechanical production, the modern period is radically different from previous ones. Unlike crafts, in which the tools work as a complement of man, the machine reveals that technology is a function independent of the natural man which reaches beyond the limits of him. Comparing to the previous periods, in this period we also see the dissociation of the artisan into the worker and the technician. Because human beings recognize that technology is a source of practically unlimited human activity, they achieve a new situation in history. Until now they have been conscious of all their deficiencies and limitations.

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[23] See, Gasset, "Man the Technician," 139-146.
[24] Gasset, "Man the Technician," 142-145.
[25] Gasset, "Man the Technician," 145-148.

But now they are secretly frightened by their own omnipotence.[26]

Ortega exemplifies the advance of the modern technology with mentioning some new technologies of his time like cinematograph, illustrated journals, newspapers and he adds: "Human understanding has never had greater power of dissociation than at present fabulous potentiality."[27] He draws attention to the fact that thanks to the perfection of technology today more people live well in the world. For him, technical achievements have increased extremely and material life would be impossible without them. If technology had a temporary failure, millions of people would perish.[28]

Dangers of Current Technological Phase

In addition to mentioning the achievements, Ortega also warns against certain dangers emerging as a part of the current technological phase. From his writings, I specify some dangers that he mentions.

The first, as for me the most substantial, is that the exclusive faith in technology makes human life empty. Because technology, by itself, could not give meaning and could not fill our lives. "Just because of its promise of unlimited possibilities, technology is an empty form, like the most formalistic logic, and is unable to determine the content of life. That is why our time, being the most intensely technical, is also the emptiest in all human history."[29] For Ortega, we live at a time when human finds in himself miraculously capacity for creation, but he does not know what to create. Human is the lord of all things, but he is not lord of himself. The world with more means, more knowledge, and more technique than ever, it turns out that the worst of worlds that have been. There is a strange combination of power and a sense of

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[26] Gasset, "Man the Technician," 148-152.
[27] José Ortega y Gasset, "The Increase of Life," *The Revolt of the Masses* (New York: New American Library, 1950), 27.
[28] Gasset, "Man the Technician," 152.
[29] Gasset, "Man the Technician," 151.

insecurity in the soul of modern man.[30] And consequently, human life is not only a struggle with nature but also the struggle of man with his soul. After these comments, he asks the critical question: "What has Euramerica contributed to the techniques of the soul?" He also suggests in the conclusion of his essay that perhaps the west should turn its attention to the technologies of the east in where will be found the techniques appropriate to the soul.[31]

As to second danger, Ortega thinks that we have become too comfortable within our technological cocoon. Due to this, we are in danger of becoming denaturalized. Our capacity for choosing a personal life-project gets more limited. We are losing our roots in nature even before we have secured our place within the sphere of technology. We may forget that human life is a form of production.[32]

The third danger which he sees among the majority people of his time (he calls as the mass-man) is the temptation to lose interest in the science, technology, moral conditions and values under which they are produced. Because as soon as human opens his eyes to the life he finds himself in a technological environment, he will tend to believe that all these things are there without any effort. According to him, the mass-man believes that the civilization into which he was born and which he makes use of, is as spontaneous and self-producing as nature. The principles on which the civilized world is based, do not exist for the average man of today. And the direction of society has been taken over by this type of man who is interested in motor-cars, and a few other things but not interested in the basic cultural values. And just as he concerns there is a decrease in interest in pure sciences. The strange thing is that: this is happening when the industry is reaching its highest stage of development. The world is a civi-

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[30] Gasset, "The Increase of Life," 28.
[31] Gasset, "Man the Technician," 161.
[32] Larry Hickman, *Technology as a Human Affair* (New York: McGraw-Hill, 1990) 246.

lized one, but its inhabitant is not. People are unaware of the artificial character of civilization.[33]

Finally, for Ortega modern technology has a potential danger because the capacity to construct a world is inseparable of the capacity to destroy it and nowadays technology has already reached this possibility.[34]

Conclusion

Ortega's reflections on technology show that he carries out a suggestive and critical analysis of modern technology. He understands technology as a constituent feature of human beings which enables them to construct their lives and open new possibilities, especially in our age. For me, Ortega's considerations are still important today and can contribute to discussions on contemporary science, technology, and ethics. Especially his emphasis on "meaning, and final aims", still appreciable in the considerations concerning technology. As he states, we should not forget that "technology is, strictly speaking, not the beginning of things. It will succeed in realizing the human project. But it does not draw up that project; the final aims it has to pursue come from elsewhere. The vital program is pretechnical."[35]

We still live in a technological age and from Ortega's time to now we can see that the debates over technology and its effects have become increasingly varied and have faced new problems. In order to meet the challenges of our technological age we need to increase our awareness to deal effectively with the problems and we need to focus on our vital program considering the meaning and value. Because the question of "what guides our lives" is pretechnical. Our future depends critically on our ability to do this.

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[33] See Gasset, "Primitive and the Technical," *The Revolt of The Masses*, 55-56; Gasset, "Man the Technician," 153; Gasset, "Primitivism and History," *The Revolt of The Masses*, 62.

[34] Antonio Diéguez Lucena, "Thinking about Technology, but in Ortega's or in Heidegger's Style?," *Argumentos de Razón Técnica* 12 (2009), 103.

[35] Gasset, "Man the Technician," 119.

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Proclus on the Eternity of the World

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Abstract: The issue of eternity is as old as the history of humanity which caused to consist of sects, schools and idea circles with various discussions in philosophy and kalam. Although the inception of the discussions originates to Aristotle, Proclus is the first for systematically explaining the issue with the help of arguments in the history of philosophy. He is a Neo-Platonic philosopher who was recognized with his work titled *On the Eternity of the World*. Proclus has known as the philosopher who internalized views of Plato, besides he follows Aristotle about the eternity of the world. He tried to demonstrate the issue of the eternity of the world with eighteen arguments in his mentioned work. Ishaq b. Hunayn translated into Arabic nine of these arguments, and Shahrastani summarized eight of them in his *Kitab al-Milal wa an-Nihal*. English translation with Greek originally as eighteen arguments has been published. The work influenced in the Islamic world, especially in the view of the eternity of the world, was internalized by al-Farabi and Avicenna seriously criticized by al-Ghazali. Comprehending the opinions of Proclus on this issue will be suitable to understand the controversies over eternity in Kalam and Philosophy.

Keywords: Aristotle, Plato, Proclus, the eternity of the world, philosophy, argument.

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Introduction

The issue of the eternity of the world was begun to be spoken and questioning from the moment that man existed. In both kalam and philosophy had improved various theories about the issue to solve the problem. But rather than solving, the two areas are separated from each other. According to quoting of Ghazali, most philosophers accept eternity of the world; just as the sun is found with the sun, world also is found with Allah.[1] Ghazali points out that thought differently from philosophers and he deals philosophers four of arguments to demonstrate eternity of the world. Islamic scholars have same idea with Ghazali, because they substantiated proof of God on temporality of the world. According to them world is temporary /hâdis (as saying "world" is meant all creations); and all temporaries need creator who will create temporaries(muhdis); thus there is God.

The theories on proof of God they named as Hudus based on temporarity of the world. Hudus theory will lose function when we think that the world is eternal and presence of God can not be proven for Islamic scholars. In reality, both theories separate from each other compulsorily that the issue of eternity of the world is supported with emanation theory by philophers, whereas temporality of the world is supported with ex nihilo theory by İslamic scholars.

The theory of emanation of philosophers is in integrity with eternity view; being eternal of the world removes concept of "will" which includes weakness from God; instead installs him eternal power and creation without any change. According to philosophers' views, always being creative of God (bi'l fiil) is caused by the view. It is not hard to say that the discussion between kalam and philosophy, in particular Ghazali and Averroes (İbn Rüşd), caused their different God conceptions.

According to the some sources, in terms of the history of phi-

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[1] Mubahat Türker, *Üç Tehafüt Bakımından Felsefe ve Din Münasebeti*, (Ankara: Ankara Üniversitesi Dil ve Tarih- Coğrafya Fakültesi Yayınları, 1956), 236.

losophy view of the eternity of the world is based on Aristotle[2]; although we have known that this issue has been addressed in Timaeus of Plato before. Shahristani has declared that Aristotle is the first person argues for eternity of the world in *Kitabu'l Milal ve'n- Nihal.* [3] We must emphasize that Proclus is the first person to systematically explained the subject with arguments. Proclus's work *"On the Eternity of the World / de Aeternitate Mundi"* based on 18 arguments was rejected by John Philoponus/ Yahya en-Nahvi (A.C 490-570). He wrote rejection to Proclus that named *"Against Proclus on the Eternity of the World"* and Philoponus criticized to each of 18 arguments of Proclus in his work. The work has been translated into English in four volumes editorship of Richard Sorabji. In our work, we will briefly introduce the Proclus and try to present the views of eternity in his 18 proofs through his work called *On the Eternity of the World.*

Proclus (A.C 410-485)

Proclus, known as a Neoplatonic philosopher, is referred to as Proclus Diadochos in Western sources[4], and is referred to as Broclus/Ebroklus Diadhus[5] in Islamic world.[6] If we evaluate Ne-oplatonic philosophy in three periods since Plotinus, in the third period we need to mention Proclus as the most effective philo-sopher. We also need to add that Neoplatonic view has become systematic with Proclus.[7] Proclus, known for his Neoplatonic ideas, followed Aristotle on the eternity of the world.[8] When we search *"On the Eternity of the World"* of Proclus, we observe that quotations and notes from *Timaeus* of Plato, *Enneads* of Plotinus,

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[2] Cemalettin Erdemci, "Proclus'un Alemin Kıdemine İlişkin Delilleri Üzerine," *Hitit Üniversitesi İlahiyat Fakültesi Dergisi* 9 (2006), 153.

[3] Erdemci, "Proclus'un Alemin Kıdemine İlişkin Delilleri Üzerine," 153.

[4] Proclus, *On the Eternity of the World (De Aeternitate Mundi)*, trans. Helen S. Lang and A. D. Marco (London: University of California Press, 2001), 1.

[5] İbn Nedim, *el- Fihrist*, thk. İbrahim Ramazan (Beyrut, 1994), 312.

[6] Eyüp Şahin and Haris Macic, "İslâm Felsefesine Bir Adım Olarak Neoplatonism (Yeni Eflatunculuk): Proclus ve Fârâbî Arasında Metafizik Bir Karşılaştırma," *Ankara Üniversitesi Sosyal Bilimler Dergisi* 5, no. 2 (2014), 195.

[7] Şahin and Macic, "İslam Felsefesine Dair Neoplatonism," 195.

[8] Erdemci, "Proclus'un Alemin Kıdemine İlişkin Delilleri Üzerine," 155.

Methaphysics and *Physics* of Aristotle etc.

The only source of information about the life of Proclus is Marinus who is his student. He wrote a book about biography of Proclus that is named *"Proclus, or on Happiness"*. It is said that many of Proclus' works were written in Athens and many of these works have not reached the present day. According to Marinus some works that belong to Proclus; *Elements of Theology*, *Platonic Theology*, *On the Eternity of the World* etc. The translation of the work *"On the Eternity of the World"* which constitutes the basis of our research about eternity was made. In this work, nine of the evidences were translated into Arabic by a translation committee, including Isaac b. Hunayn, under the leadership of Kindi; additionally eight of them were summarized by Shahristani in *Kitabu'l Milal ve'n- Nihal.* [9]

On the Eternity of the World and the Arguments of Proclus

Proclus established his work on eighteen arguments and tried to prove that the world was eternal with these arguments. This part of our work will be built on arguments of Proclus and will explain how these arguments support the idea of the eternity of the world. Turkish translation of the work is not available yet; but English translation with Greek originally has been published by Helen S. Long and A.D Macro.

Argument 1:

His first argument is based on everlasting of cosmos by sake of goodness of creator. According to Proclus, maker (creator) is good and He designed all thing as resemble as Himself, cosmos also was designed by Him; then cosmos was designed eternally.

Argument 2:

In this argument, Proclus refers to *Timaeus* of Plato about ideas theory as can be seen in notes of the book. He says that pattern is eternal and it must produce eternal copy. The cosmos is a copy of an eternal pattern; thus the cosmos must be eternal.

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[9]   Erdemci, "Proclus'un Alemin Kıdemine İlişkin Delilleri Üzerine," 156-157.

Argument 3:

The argument is based on two axioms and a defination that being creator or producer of Demiurge. Axiom one says that whenever the cause actually producing, the effect is actually being produced; second axiom says that potential needs something actual to produce it actually. If defination a Demiurge is one who produces an effect. Proclus claims that by looking at the evidences, Demiurge will produce actual effects, and by looking at the first axiom, the cosmos is the result of Demiurge's actual creation, and therefore is eternal. (In this argument potential and actuel creations are corresponding (bi'l fiil, bi'l kuvve) creation view in Islamic Philosophy.

Argument 4:

The argument consist of two assumptions and three arguments. Assumptions; motion is incomplete actuality and anything moved is earlier incomplete, later complete, accupies time. Argument one says that something unmoved is a cause, it produces a necessarily eternal effect. Arguments second says that all must be eternal; and last arguments cause and if we say cause only is unmoved, it will mean cosmos changes and not eternal. Thus we must say that both cause of all and the cosmos are eternal.

Argument 5:

Time and heaven are simultaneous and both must be eternal; neither one is when the other is not; time must be eternal; therefore heaven must also be eternal. Time is measure of the heaven's motion as eternity is a measure of the pattern's life; time is a moving image of eternity; it must always be a pattern for time.

Argument 6:

The argument starts with a question that: "Whether the demiurge alone would dissolve the cosmos"[10] If the universe can be destroyed, only one can regulate or bound it and He can destroy

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[10] Proclus, *On the Eternity of the World*, 61.

it. Because of Demiurge is good, he doesn't break arranged things up. Therefore cosmos is indissoluble and so incorruptible; it must be eternal. Based on his propositions, Proclus' definition of Eternity means that no beginning and no end of the eternal things. According to him something is incorruptible, then it is also ungenerated; the cosmos is incorruptible; therefore it is ungenerated. The cosmos must be eternal.[11]

Argument 7:

The argument is based on essentially source of motion that does not move itself (Unmoved mover of Aristotle's theory). Things that move by themselves must be eternal. According to this principle, the all is moved eternally and so must be eternal.

Argument 8:

This argument is based on generated and corruptible of beings. According to propositions all is incorruptible and ungenerated. And Proclus adds that change in one direction only that is from possession to privation and he supports his view with an example that such change is impossible, as for example would be the change from being blind to having sight. However it would be impossible that the all would again return to disorder, because god wishes order.[12] Proclus considers that God does not wish corruption and disorder, thus all is incorruptible and ungenerated.

Argument 9:

The argument is based on the fact that good is incorruptible and unchangeable; corruptible is corrupted by evil. If the thing (all) is incorruptible then it is also ungenerated. Proclus concludes saying that the all is eternal; he says: "All has not been generated and could not be corrupted; the all is eternal."[13]

Argument 10:

Proclus emphasizes in the argument that whole elements

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[11] Proclus, *On the Eternity of the World*, 61.
[12] Proclus, *On the Eternity of the World*, 71.
[13] Proclus, *On the Eternity of the World*, 71.

except the All are in change; only the All is eternal and unchangeable. He supports his argument by explaining changing and motion such as "each element of the cosmos that is in its natural place either remains there or is moved in a circle…" At the end of the argument Proclus reaches the end; thus there are two principles the natural and unnatural; which is a principle even though it depends upon the natural.[14]

Argument 11:

The argument begins with a definition, as follows: "Matter is for the sake of the all and is the receptacle of generation." According to Proclus, if matter were to come from nothing its relation to the all would be by change. The work of the demiurge who made the cosmos from matter, would not have permanence. "The realm of becoming is generated by the demiurge putting form onto matter." He named God as "divine craftsman" and says that "He makes the cosmos by making form present to matter. Because this relation is eternal, the cosmos is ungenerated and incorruptible in the sense of without beginning or end; as forms are eternal, so too is the cosmos."[15] As a result, Proclus proves that cosmos is eternal by the saying that when the matter happens, the cosmos also happens.

Argument 12:

In this argument, it is said that the existence of everything depends on two factors: matter and a maker. It is explained that the eternal existence of matter and its creator causes the cosmos to be eternal. In the end of the argument he says that: "Therefore the demiurge makes and the matter is made eternally and the cosmos is eternal."[16]

Argument 13:

This argument talks about to motion and it also says that beings have their own unique motions. Generation and corruption

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[14] Proclus, *On the Eternity of the World*, 85.
[15] Proclus, *On the Eternity of the World*, 93.
[16] Proclus, *On the Eternity of the World*, 101.

includes opposites; the four elements have opposites and are generated and corrupted into one another, but the heaven is ungenerated and incorruptible. Wholes are ungenerated and incorruptible, in contrast things are generated and corrupted thus cosmos is ungenerated and incorruptible, because it always remains in its proper place without any changing.

Argument 14:

In this argument, Proclus says that the existence of order causes the cosmos to be eternal by two general principles. First principle is: "What is disordered resists order.", second is as follows: "Order is never posterior to disorder." The shapes of forms are given by God; Matter is orderly, forms are irregular. Proclus concludes the argument as follows: "Order is simultaneous with matter and the trace. Therefore order is always. From the moment there is order, there is also a cosmos. Therefore, the cosmos is ungenerated and incorruptible and eternal."[17]

Argument 15:

The argument begins with Plato's paradigm of the cosmos, according to Plato, cosmos is "unique", "eternal" and "altogether complete". Perpetual being has holistic forms in generally. The disorder ends in order. The disorder has no beginning, but has an end; the ordered has no end, but has a beginning. "The cosmos which above all else resembles what is eternal, must resemble the eternal paradigm in both direction, being without beginning or end, being ungenerated and incorruptible (cosmos must be eternal)"[18] In Proclus philosophy, especially in this argument the meaning of eternity is 'not beginning or end'; therefore eternal means that ungenarated and incorruptible.

Argument 16:

According to Proclus demiurge has two wishes: a- that what is disorderly not be and b- that what has been ordered be preserved, then either; these two wishes are eternal. Demiurge wis-

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17   Proclus, *On the Eternity of the World*, 111.
18   Proclus, *On the Eternity of the World*, 119.

hes disorder in which there is no good; and also he wishes order in which there is no evil. Demiurge wishes order in the cosmos. Demiurge's job is to reject disorder; in contrast to produce order. The order does not consist of disorder; and also disorder does not consist of order, because both are eternal and both do not have beginning or end. Proclus ends the argument by explaining what the universe is. He says: "The object of the wish is order; order is the cosmos; therefore the cosmos is one, eternal, ungenerated and incorruptible."[19]

Argument 17:

In this argument, Proclus bases his two principles on Aristotle and Plato and he : "a- everything generated is corruptible; b- everything ungenerated is incorruptible. Therefore, if the all is incorruptible, it is also ungenerated according to both Plato and Aristotle." According to Proclus, the ungenerated cannot be corruptible or the generated incorruptible, because maker is not evil, ordered is not corruptible; if the ordered comes from the disordered. If the ordered is corruptible, then the one who corrupts it either did not fit it together beautifully and is not good, or corrups what is beautifully fitted together and evil. Cosmos is ungenerated and incorruptible and so eternal.[20]

Argument 18:

In this argument we have to emphasize some points that "being ever uniform, unchanging and self identical belongs only the most divine of all things , demirge is among of them and he must be eternal. And second point that demiurge always acts and makes and cosmos have either a beginning or an end of being acted upon." And he adds meaning of eternal he claim that "cosmos must be without beginning or end, ungenerated and incorruptible. Therefore cosmos must be eternal."[21]

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[19] Proclus, *On the Eternity of the World*, 125.
[20] Proclus, *On the Eternity of the World*, 133.
[21] Proclus, *On the Eternity of the World*, 139.

Müberra Çay

Conclusion

In our article, we examined the idea of the eternity of the world which belongs to Proclus built on eighteen arguments. Looking at the debates about the eternity of the world through the proofs of Proclus will help us to understand the basics of the debates. The causes of the eternity of the world explained by Proclus such as; goodness of creator, eternal copy of pattern, eternal creation of Demiurge, goodness of Demiurge, unchangeable of good, making matter eternally etc. Therefore the cosmos is ungenerated, incorruptible, unchangeable, one thus it is eternal.

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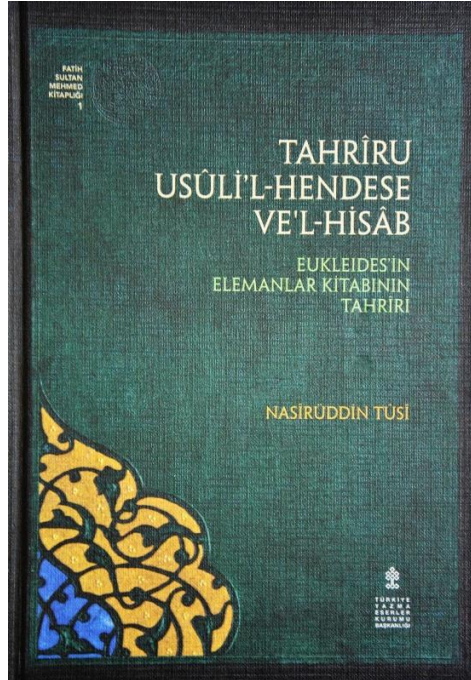
İLYAS ALTUNER ⓘD
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This book is the commentary written on Euclid's *Elements* (*Stoikheia*) by Naṣīr al-Dīn al-Ṭūsī. It is the facsimile of the copy being in the periodical in Feyzullah Efendi, no 1359. The book consists of 23 lines. Dedication record is as follows: "Hādhā *Kitāb Taḥrīr Uqlīdis* te'līf al-ḥakīm al-muḥaqqiq wa al-faylasūf al-mudaqqiq naṣīr al-milla wa al-dīn Muḥam-mad b. Muḥammad al-Ṭūsī raḥi-mallāh raḥmah wāsĭah". Translation: "This *Book of Essay of Euclid* is writing of Muḥammad b. Muḥam-mad al-Ṭūsī, the investiga-tor wise and explorer phi-losopher, the supporter of religion and faith, may God have mercy on him".

The titles of parts and geometric notation and symbols were written with gold water, and the shapes were drawn with

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red ink. In the postscript, the literal numbers given for the shapes, and geometric notation and symbols within the made corrections and additions were also written with gold water. It seems that red ink was used in some corrections on both the text and the postscript. There are abundantly corrections and additions in the postscript, but geometric shapes in the postscripts were drawn with black ink. In the folio 148a, it points out about the copy to be finished in 849, with a number.

Reasons for the translation movements and the place of mathematical sciences in Islamic civilization are a quite controversial issue. According to al-Bīrūnī, the first translation period in mathematical sciences in the Islamic world was from Pahlavi and Indian. The development of theoretical thought about theological discussions and linguistic inquiries has caused to change the direction of the translations. Because Greek mathematical sciences presented by Euclid had more theoretical construction with regard to Pahlavi and Indian mathematics devoted to practical and particular issues. This mental proximity was one of the most important reasons for turning back to Graeco-Hellenistic texts. The other reason for this turning was exact knowledge based upon an axiomatic method that included in Greek mathematical texts, notably *Elements* by Euclid. The given knowledge was universal because of compulsory and absolute.

Taḥrīr should be seen as a piece of the project *Taḥrīrāt*, so that al-Ṭūsī realized this project in order to annotate all the mathematical works. There are many author's works in this project such that Ptolemy, Archimed, Theodosius, Menelaus and Apollonius as well as Euclid. al-Ṭūsī follows a method in this work: When requires he reviewed and reconstructed the order of the work, correctsed the translation errors, removed some term mistakes in historical process caused by copiers, and updated language of the work. It consisted of the right and common terms in mathematical sciences owing to al-Ṭūsī's *Taḥrīrāt*. After al-Ṭūsī, it exactly be constituted a common language in the sciencetific and mathematical fields in the Islamic civilization.

In *Taḥrīr*, al-Ṭūsī considers all accumulation of Islamic world that he can reach. He, depending on his own mathematical formation, sometimes simplifies present proofs and sometimes improves, brings new evidences if needed, also mentions alternatve proofs for present proofs. As a result of all these proofs, *Taḥrīr* would go beyond classical formation of Euclid's *Elements*. So, after al-Ṭūsī, it has eliminated the previous *Uṣūl* tradition and henceforth become a standard text all scientific studies.

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1. **Entelekya Logico-Metaphysical Review** publishes studies on the Classical Aristotelian Logic, Metaphysics and Rational Psychology and Theology; in addition, other classical, modern and contemporary studies related to the Aristotelian tradition. Submissions are accepted in English but submissions in other languages are decided by Editorial Board.

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4. Papers should not exceed 5000 words, with a double space interlining, with margins, left 4.5, up 4,5, down 3,5 and right 4,5 cm. In papers, it should be made use of Times New Roman 11 points. Pictures or graphics in the papers should be sent separately as png or jpg file, maximum 10x20 cm in size.

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Style Sheet

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