

Tagging Alchemic texts. Issues in Corpora and Analysis

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*Comprends ce que je te dis et réveille-toi ô toi
qui dors, c'est comme si je me tenais
près de toi. Si tu lis ce livre,
tu comprendras une partie de ce que je t'ai
enseigné, et diras « il est moi », et tu seras lui.
Ġābir Ibn Ḥayyān, Kitāb al-Ḥāsil*

Alchemy is one of those Middle Ages branches of the Arab 'ilm who are not still well known by scholars. This is because of its inner difficulty, caused both by the subject itself and by the typology of the text. I would like to give in this article a short introduction about this discipline and about its most known Arab author, Ġābir Ibn Ḥayyān (whose authorship, and even existence, is notoriously doubtful); then we will move on to an insight on the actual corpus and its peculiarities and finally a short presentation of the project on the corpus (relating to the Thesaurus Linguae Arabicae project) will be given to the reader.

1. ALCHEMY: HINTS ON ITS HISTORY AND ITS DIFFERENT TRADITIONS

Alchemy is a very interesting field of study in the Middle East area during the Middle Ages. It is part of the *al-ḥikma*² “the wisdom” of this golden period for the Arab world. In fact, the knowledge of Alchemy, rather than being strictly scientific, is deeply linked to philosophy and *γνῶσις*, and this is openly detectable through the layers in the lexicon that we will later analyse.

Arabic Alchemy has been estimated for a long time as being the younger sibling of hellenic tradition, but we must reconsider this position. Indeed they are related and intertwined, but the Ġābirian corpus and the Arabic tradition did improve and deepen the studies in this field within the VIII-XI centuries, giving birth to a specified lexicon and widening concepts of the Great Work.

If we do try to set in time and place the birth of Arabic Alchemy we will have to face several problems. As we said it does have some kind of relationship with the Greek *χημεία*, but we will also find out that there was a sort of alchemic core in the Middle East, especially in Iran, Iraq and in the Syriac area. As a matter of fact we do find texts in Syriac and Coptic language. These former alchemists

1. Roma Tre Università.

2. As A. M. Goichon says in her definition in *The Encyclopedia of Islām*, EI³, s. v. “Ḥikma”, Brill, 1986.

after the islamisation of the Mediterranean area would have met and exchanged their knowledge with Arabs, giving birth to a brand new tradition that is represented by the Ğābirian corpus³.

The Greek texts that scholars such Berthelot, Ruska and others like Ruelle were able to gather are a group of books' fragments written during a very long period, starting from the III/IX century up to the Middle Ages, and those texts suffered manipulation, mistakes in their transcription and were treated in order to partly disguise their essential meanings. Moreover these texts aren't strictly technical and the interpretation is quite painful to any reader, both for the philosophic aura given by the first alchemists so to hide to the unprepared ones the deeper meanings of their passages and for the interpretation given by the latest alchemists to the symbols created by their masters, that leads to a completely detached-from-reality reading⁴.

For what concerns Arabic Alchemy the corpus is outrageously vast, and, despite the cryptic and exoteric use of words, the chemical procedures are well explained as well as the alchemic materials and instruments. In fact the main difference between the two kinds of alchemy is that the Arabic one wants to openly discuss and explain the theory and tries to keep its secrets by spreading and hiding the doctrine in a huge quantity of material, the so called *tabdīd al-ʿilm*.

Moreover the Ğābirian works are very detached from the origins of Greek Alchemy, and his references to the hermeticians and gnostics are rarely direct and most of them may be considered as literary *mémoires* of the ancient philosophers taken from later sources. In his works, by the way, we do find references to the most ancient writers such as Democritus, and the very same Ğābir says that he refers to Phytagoras, Socrates, Plato, Aristotle and even Homer, Diogenes, Porphyry and Apollonius of Thyana, in Arabic *Balīnās*.

On the contrary some of the modern Greek works on alchemy are likely to have been inspired and influenced by the Ğābirian writings and the theory of the Four Elements⁵ and not only in the main ideas, but also the technical structure of the text and the terms used in the treatises.

So we can say, in conclusion that Ğābir's work was, of course, influenced by the Greek alchemists, but it is fundamental to know that he developed his own theories such as *the theory of the balance*, which were themselves the bases for a further and deeper development of the Alchemic knowledge.

2. ĞĀBIR IBN ḤAYYĀN, THE ARAB ALCHEMIST (?)

Abū Mūsā, or Abū 'Abd Allāh Ğābir Ibn Ḥayyān al-Kūfī al-Šūfī, the latin Geber, is known as the most important and the most prolific alchemist of the Arabic tradi-

3. As Lory interprets in his *Alchimie et mystique en terre d'islam*, 1989, p. 12.

4. For a deeper analysis of differences, cf. Kraus's *Contribution à l'histoire des idées scientifiques dans l'islām*, 1942-1943, p. 30 and following.

5. *Ibidem*. Kraus reports Berthelot edition at an anonymous alchemist which title was *Travail des quatre éléments*, which dating is uncertain.

tion. Hundreds of texts and treaties are said to have been written by this author, who probably lived in the II century of Ḥiğra (VIII a. D.).

Of course the existence of this personality is quite sure, historically I mean. He seems to be born in Tus, in Iran, and his father was a druggist of Kufa⁶ called Azdī. He was most certainly for all this life the disciple of the Ğa'far al-Şādiq, the shiite imām, who was both his philosophical and practical master.

Although for a very long period the whole alchemic corpus has been linked to this author – even by other alchemists, such as al-Rāzī (d. 313/925), al-Mağrīṭī (IV/X century) and Ibn Umayl (d. 349/960) and historians like Ibn Ṭahir al-Maqdisī and Şā'id al-Andalusī (IV/X century)⁷ – it is practically impossible that he was the only one who wrote and elaborated those theories.

In fact, there are some treaties dedicated to the Barmakids⁸ and which must have been written after the death of Ğa'far in 765. As Lory says, moreover, some “éléments ultra-chiites présents dans le corpus [sont] un indice flagrant que la date de leur rédaction ne pouvait être antérieure à la fin du IX^e siècle”⁹.

All those informations lead us to the comprehension that it is hard to believe that the author of the so called Ğābirian¹⁰ corpus is just one, but more likely we should face the fact that this corpus has been developed and written by a sort of school of alchemists who worked from the fifties of the IX century to the fifties of the X century, as Kraus suggests¹¹.

3. THE ĞĀBIRIAN CORPUS AND ITS SPECIFICITIES

As we anticipated the corpus ascribed to Ğābir is vaste, eclectic and copes with a wide range of subjects such as mathematics, philosophy, astronomy and astrology, music, medicine and – of course – magic and religion.

The corpus was divided by Kraus into different collections:

- the CXII books (*al-kutub al-mi'a' wa-al-iṭnā 'ašar*), that contains texts with references to greek savants like Zosimus, Democritus and Hermes;
- the LXX books (*al-kutub al-saba'ūn*), where is given an explanation of the alchemical teaching of this master;
- the CXLIV books, known most widely as *Kutub al-mawāzin*, in which the philosophical grounds of alchemy are explained;
- the D books (*al-kutub al-ḥamsūmi'a'*), which groups manuscripts investigating on more specific themes of the Book of the Balances.

6. As reported in EI² s. v. “Djābir Ibn Hayyān”, p. 358, by Kraus [Plessner], following what Holmyard suggested.

7. Cf. Haq, 1994, p. 4.

8. We can find linguistic elements such as the name given to the imām, *nātiq*, instead of *šāmiṭ*, that reveal this kind of link with the Karmatians and the Fatimid isma'ilis (cf. EI² s. v. “Djābir Ibn Hayyān”).

9. Lory, 1989, *op. cit.*, p. 15.

10. Of course we will continue here to talk about the Ğābirian corpus.

11. Cf. *ibidem*, p. 16.

As Kraus maintained, when we cope with the Ğābirian corpus we must face two kinds of problems concerning their history: religious issues and problems raised by the history of science. We sketched out before that the texts do have a link to the Shia, in fact “Djābir proclaimed the imminent advent of a new imam who would abolish the law of Islam and replace the revelation of the Kuran by the lights of Greek science and philosophy”¹², a point of view which was common in the the Shi’i extremism (*ġulāt*) in the latest years of the III/IX century, and this is also reflected in the use of terminology¹³ strictly connected with Karmatianism as we mentioned before.

Moreover there are problems related to the history of sciences in Islam. The vastness of subjects included in the corpus takes its inspiration in ancient science, but Ğābir created a new defined and clear-cut form of alchemy that avoids ermetisms and clearly explains procedures¹⁴. We must also underline that Ğābir was introduced to the scientific terminology by Hunayn Ibn Ishāq, the most famous and important translator of the Greek science, who was born in 192/808¹⁵, this leads us to believe even more strongly that the corpus wasn’t witten before the III/IX century.

In addition to that, we can underline Ğābir’s use of grammatical terminology and his use of the *nisba*: he uses the words *ṭulātī*, *rubā’ī* and *ḥumāsī* when he wants to talk about the trilateral or quadrilateral or quinquilateral form of the verb, whereas his presumed contemporary grammar didn’t use this kind of derivation¹⁶ which was first used by Ibn al-Sarrāġ in the early X century.

What we should focus on, and deeply analyse, is the multiplicity of layers and uses of the words in this specific corpus. For Ğābir, in fact, even if he avoids the ellenic style and rethoric, the use of words is very important:

Le Corpus Jābirien apporte également de nouveaux développements à la question des rapports entre langue et pensée, langue et réalité. Le langage symbolique était très cultivé par les alchimistes alexandrins [...]. Chez les alchimistes arabes, et Jābir en particulier, l’usage de l’exotérisme se modère, et sa raison d’être apparaît mieux : il cherche à saisir l’évolution des phénomènes matériels en tant que flux de l’esprit. Dès lors, l’emploi des concepts et leur contenu usuel volent en éclats pour laisser place à la révélation de leur sens vertical.¹⁷

This kind of language was meant to let only the right ones into the deepest meanings of the alchemic texts; in fact, what is peculiar in this lexicon is that every basic term of the alchemic procedure can be read at several different levels.

12. EI² s.v. “Djābir Ibn Hayyān”, p. 358, Kraus [Plessner].

13. Cf. the word *takrīr*, used both to mean the reiterations in the alchemic procedures, and to express the meaning of reincarnation.

14. Cf. “The alchemy of Djābir is an experimental science based on a philosophical theory”, EI² s.v. “Djābir Ibn Hayyān”, Kraus [Plessner].

15. EI³, s.v. “Hunayn Ibn Ishāq”, p. 578, G. Strohmayer.

16. For a deeper and interesting case study, see Lancioni, 1997.

17. Lory, 1989, *op. cit.*, p. 26.

Words are not specific concepts, instead they create a range of symbolisms and interactions. Even in the Book of Definitions (*Kitāb al-Ḥudūd*) the author doesn't give the reader any hint on the signification of basics like *ḡawhar* 'substance'. It is all about *correspondances* and instability of the concepts that flows like the reality flows in its nature. This kind of language is made up to stimulate the reader/chemist to find the meaning both in the concrete experience and into his inner world, and in order to do so every word doesn't exist just for itself but in a bundle of relationship with what surrounds it.

Just in order to give an example of this kind of multi-layering, here is a list of meanings and correspondences of the word *mīzān* "balance", the main principle in ḡābir's philosophy. *Mīzān* is – or better, could be:

(a) specific gravity (references to Archimedes); (b) the *σταθμός* of the ancient alchemists, meaning the measure in a mixture of substances; (c) a speculation on the letters of the Arabic alphabet, which are connected with the four elementary qualities (hot, cold, wet, dry). [...]; (d) *mīzān* is also the metaphysical principle par excellence, a symbol of the scientific monism of *Djābir*. In this sense it is opposed to the dualist principle of the Manichaeans. Neo-Platonic speculations on the One do not seem to have been without influence here; (e) lastly, *mīzān* derives from an allegorical explanation (ta'wil) of the Qur'anic references to the weighing at the day of judgment.¹⁸

Furthermore, when we approach the ḡābirian corpus we will find some words translated, transliterated or adapted from Greek. This is not even slightly a minor issue in the analysis of the corpus. As a matter of fact some words were just transliterated as *falsafa*, and we may find it easier to recognise them with the right terms of analysis, e.g. their length; but other words, like the Greek *Οὐσία* "substance" is translated with the term *ḡawhar*, becoming like so, unrecognisable in its origins.

What we should also stress are the quotes that we may find when reading this kind of texts. Of course ḡābir does refer to other alchemists, philosophers – in the perfect spirit of the encyclopedic and multi-referring kind of cultural surrounding of his time – and sometimes recognising those quotes may represent a big challenge for the reader. That is why it would be useful to create a big corpus to be queried for words, sentences and names of other scholars who contributed to the development of science in Middle Ages.

Moreover, given the practice of *tabdīd al-ilm*, we can think of the corpus as if it was sort of a modern hypertext¹⁹. So we will find groups of words and words which are related to – and can be found in – other books; by tagging them as e.g. *hypertext* we may be able to really go deeper in the study of these texts. The system of the encyclopedic and inter-linked work would be unhinged and we will be

18. EI², s.v. "Djābir Ibn Hayyān", p. 358, Kraus [Plessner].

19. As Lancioni points out in his article ("Classical Arabic texts as hypertexts", 2008), "the system is very close to the way contemporary hypertexts work".

able to gather information from a wider range of sources, to have a general idea of the concept we are studying and last but not least make a list of concordances of a word in the whole corpus.

So, given this little insight on the peculiarities of the corpus one can easily understand why Arabic alchemy has been like an off-limits topic for scholars for a very long time. Our aim and purpose is to ease the approach to this field by digitalising and tagging as much texts as possible in a relatively short period and using the newest technologies to analyse the corpus.

To this end it is necessary to think about the meaningful tags and the meaningful way of tagging. As we pointed out in the previous paragraphs it would be interesting and useful to tag words which are difficult to recognise at first sight, e.g. translations from Greek, technical words related to the alchemic procedures and materials and key words who appear to link different text e.g. the sentences “as we said...”, “as we thought...” or “as mentioned in...”.

Those tags would give the reader both a wider and a deeper *coup d’œil* on the Ğābirian corpus. Of course what would be important is to tag not only isolated forms, but to create also a *reseau* of decontextualised words, so we will take into consideration not only the actual verb in the sentence we are analysing, but also his root so to create a complete lexicon of the alchemic corpus.

4. THE ALCHEMIC CORPUS IN THE *THESAURUS LINGVAE ARABICAE*

Paul Kraus, with his lifetime study of Ğābir, managed to gather and classify almost 3000 manuscripts which were only partly edited. In order to create a digitalised corpus to help and deepen studies on Arabic Language and lexicon, I tried to find the majority of the edited texts of Ğābir’s *oeuvre*. So this is a – hopefully – complete list of them.

In: *Tadbīr al-iksīr al-a’ṭam*, edited by Pierre Lory²⁰:

(i) *Kitāb al-lāhūt*; (ii) *Kitāb al-bāb*; (iii) *Kitāb al-ṭalāṭīn kalima’*; (iv) *Kitāb al-manā*;
(v) *Kitāb al-hadā*; (vi) *Kitāb al-ṣafāt*; (vii) *Kitāb al-‘ašara’*; (viii) *Kitāb al-na’ūt*;
(ix) *Kitāb al-‘ahad*; (x) *Kitāb al-sab‘a’*; (xi) *Kitāb al-tabdīr al-arkān wa al-uṣūl*;
(xii) *Kitāb al-manfa‘a’*; (xiii) *Kitāb hatk al-astār*; (xiv) *Kitāb al-ṣafī*.

These texts were edited together by choice of Lory because of their main theme: the preparation of the Supreme Elixir which will make possible to turn metals into gold, but they come from different collections:

– the first ten are from “The LXX books” collection, and represent the core ideas further developed in the following sixty chapters of the same collection;

– *Kitāb al-tabdīr* is an isolated treaty discovered after the death of P. Kraus, and it is impossible to give it a specified place inside the Ğābirian corpus;

– *Kitāb al-manfa‘a’* was classified and analysed by Kraus, but it was impossible to place it inside the corpus, moreover, another 15 lines *extrait* was edited by Holmyard;

20. Lory, 1988.

– *Kitāb hatk al-astār* wasn't properly situated in the corpus by Kraus, who nevertheless suggest it to be part of the “Five hundreds books”;

– *Kitāb al-ṣaḥīḥ* is part of the “Five hundreds books”.

Others manuscripts were edited by Kraus in the *Muḥtār rasā'il*, an “Essai sur les idées scientifiques dans l'Islām”²¹:

(i) *Kitāb iḥrāğ mā fī al-quwa' ilā al-fi'l*; (ii) *Kitāb al-ḥudūd*; (iii) *Kitāb al-māğid*; (iv) *Al-ğazā' al-awwal min kitāb al-aḥğār 'alā ra'i Balīnās*; (v) *Al-ğazā' al-tānī min kitāb al-aḥğār 'alā ra'i Balīnās*; (vi) *Al-ğazā' al-rābi' min kitāb al-aḥğār 'alā ra'i Balīnās*; (vii) *Nuḥba' min kitāb al-ḥawaṣṣ al-kabīr*; (viii) *Al-muqāla' al-ūlā*; (ix) *Al-muqāla' al-tānīa'*; (x) *Al-muqāla' al-ḥāmisa'*; (xi) *Al-muqāla' al-ḥāmisa' 'aṣar*; (xii) *Al-muqāla' al-sābi'a' 'aṣar*; (xiii) *Al-muqāla' al-ḥāmisa' wa al-'aṣarūn*; (xiv) *Qit'a ṣağira min kitāb al-ḥawaṣṣ*; (xv) *Ibtidā' al-ğazā' al-awwal min kitāb al-sirr al-maknūn*; (xvi) *Nuḥb min kitāb al-tağmī'*; (xvii) *Nuḥb min kitāb al-taṣrif*; (xviii) *Nuḥb min kitāb al-mayzān al-ṣağīr*; (xix) *Nuḥb min kitāb al-sab'in*; (xx) *Nuḥb min kitāb al-ḥamsīn*; (xxi) *Nuḥb min kitāb al-baḥṭ*; (xxii) *Kitāb al-rāhab*; (xxiii) *Nuḥb min kitāb al-ḥāşil*; (xxiv) *Nuḥb min kitāb al-taqdīm*; (xxv) *Nuḥb min kitāb al-iştimāl*.

Moreover we have the work of Haq, *Names, Natures and Things*²² in which is edited the *Kitāb al-Aḥğār*, “The book of stones”.

Although those texts are less than a minor part of the Ğābirian complete work, this may be the perfect starting point to create an alchemic corpus because of the possibility to scan and elaborate the material digitally.

Of course the final goal is to have the whole corpus in a database to query for, and investigate, words and concepts. The present project is meant to be the first step towards that direction. Alchemy will reveal its secrets only to those who are ready for them, only to those who have the knowledge to fully and deeply understand its meanings. Naturally we are not willing to – and most probably we would not be able to – unveil all enigmas of this discipline, but we firmly believe that this kind of text must be represented in the *Thesaurus* for its peculiarities and its challenging nature.

21. Kraus, 1935.

22. Haq, 1994.

References

- BERTHELOT M., 1967, *La Chimie au Moyen Âge*, Osnabrück, Otto Zeller - Amsterdam, Philo Press.
- HAQ S. N., 1994, *Names, Nature and Things*, Dordrecht, Kluwer Academic Publishers.
- HOLMYARD E. J., 1957, *Alchemy*, Harmondsworth (Middlesex), Penguin Books.
- KRAUS P., 1935, *Jābir Ibn Ḥayyān. Muḥtār Rasā'il. Essai sur l'histoire des idées scientifiques dans l'Islam*, t. I, Paris-Le Caire, Textes choisis.
- 1942-1943, *Jābir Ibn Ḥayyān. Contribution à l'histoire des idées scientifiques dans l'Islam*, Le Caire, Mémoires de l'Institut d'Égypte.
- LANCIONI G., 1997, "La terminologia grammaticale del corpus giabiriano", *Rivista di Studi Orientali*, vol. LXXI.
- 2008, "Variants, links and quotations: classical Arabic texts as hypertexts", *Scritti in Onore di Biancamaria Scarcia Amoretti*, vol. II, Rome, La Sapienza.
- LORY P., 1989, *Alchimie et mystique en terre d'Islam*, Paris, Gallimard (Folio Essais).
- 1988, *L'élaboration de l'Elixir Suprême. Quatorze traités de Jābir ibn Ḥayyān sur le Grand Œuvre alchimique*, Damascus, Publications de l'Institut français d'études arabes.
- SEZGIN F., *Geschichte des Arabischen Schrifttums*, vol. IV, Leiden, E. J. Brill.