

Revisiting Duyvis: A Chemical Engineer's Zeal to Organize Knowledge

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Abstract

This paper presents an analytical study on Frits Donker Duyvis' role in developing and revising Universal Decimal Classification (UDC). Also, his role as Secretary General of International Institute of Bibliography (IIB) has been analysed. The IIB was formed in 12th September 1895 at Brussels actually to sponsor UDC. It was renamed as International Institute for Documentation in 1931. During Duyvis' tenure in IIB, several controversies occurred with Paul Otlet and Henri La Fontaine, the inventors of UDC. Otlet's universal philosophy and notion of a great centralised bibliographic repertory confronted Duyvis' pragmatic outlook, which is perhaps one of the most remarkable conflicts in the history of knowledge classification in IIB. The excerpts of some memorable letters of Otlet and Duyvis are presented here to present a layout of the historical conflicts took place centring the revision process of UDC. According to Ranganathan, Donker Duyvis was primarily a classificationist and not a grammarian of classificatory language. Several excerpts from different documents are presented to reckon that if Otlet was the first to understand that classification was at the heart of all documentation, it was Duyvis who made this finding in everyday practice.

Keywords: Dewey Decimal Classification, Duyvis, Faceted Classification, Frits Donker Duyvis, Henri La Fontaine, International Institute for Bibliography (IIB), International Institute for Documentation (IID), Melvil Dewey, Paul Otlet, Universal Decimal Classification, Universal Decimal Classification (UDC), Universal Repertory

1. Brief Biography

The Dutch chemical engineer, Dr. Frits Donker Duyvis was born on 30th April 1894 at Semarang, Java in Indonesia, which was then ruled by the Dutch East Indies that was formed from the nationalised colonies of the Dutch East India Company and came under the administration of the Dutch Government in 1800. Duyvis studied chemical engineering at Delft University, but he was interested in applied science. He was elected as president of the Dutch Standards Institute (HCNN). As a co-founder and director of the Dutch National Institute for Management (NIVE), he worked for 31 years. In addition, he was involved in the establishment of the Netherlands National Organization for Documentation (NIDER), in 1921. He became secretary of the International Commission for Decimal Classification in 1924. He also served as General Secretary of the International Institute for Bibliography (IIB), later known as the International Federation for Documentation and Information (FID), from 1928 until

his Retirement. The last of his functions, was the post of director in the Revue de la Documentation from the time of its creation in 1934. He was an industrial consultant to the Govt. of Holland (Netherlands). In 1929, he joined the Dutch Patent Office and after a long service he retired as its Vice-president in 1958. He was co-founder and the founding director of the Dutch National Institute for Management (NIVE) and served on its executive committee for 31 years. He was an advocate of standards and was elected as the President of Netherlands Standards Institute (HCNN). Despite having earned a chemical engineering degree, he has made history through his work in documentation. He passed away on July 9 1961, in Wassenaar, the Netherlands, after a protracted illness at the age of 67. Throughout the lifetime, he was actively associated with the following institutions, i.e. the Netherlands Standards Institute (HCNN), the Dutch National Institute for Management (NIVE), the Dutch National Organization for Documentation, the International Federation for Documentation (FID) and

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the Revue of Documentation^{1,2}.

According to Duyvis, documentation, standards, machines and pursuits of efficiency form a coherent and momentous combination. In 1955 he said: *As rule efficiency, which in fact includes both standardization and documentation, has been thought of as being less important. This can be explained by the fact that it manifests itself in a less concrete form than the other two and even today presents itself only in the form of a certain attitude of mind, despite the fact that a technique or science of organization, rationalization, increase of productivity or whatever it may be called, has developed.* Duyvis was interested in the application of documentation, efficiency and standards, not only in libraries and bibliography but also in other areas that included the handling of records³.

2. Background

The IIB was formed on 12th September 1895 at Brussels actually to sponsor Universal Decimal Classification (UDC). It was renamed as International Institute for Documentation in 1931; International Federation for Documentation in 1937; and International Federation of Information and Documentation (FID) in 1988. FID was closed in 2002 due to financial problems. The basic objective of UDC was to organise 12 Million global documents consisting of books and articles in periodicals to compile a universal bibliography, i.e. a Repertoire Bibliographique Universel. Such a compilation needed a system for arrangement of entries in this universal bibliography, i.e. a systematic list of technical literature published anywhere in any subject and language, and since ancient times^{4,5}. The most defying barrier for such work was evidently the language barrier that could be solved only if the entries are arranged in classified order. Ranganathan interpreted the contents of books as macro-thought and the contents of articles as micro-thought. The annual rate of growth of literature in the last decade of 19th Century was around one lakh books and ten lakh periodical articles. To keep track of this, an International Bibliographical Conference was held in Brussels in 1895, the outcome of which was the foundation of IIB. The basic purpose of IIB was to maintain up-to-date universal bibliography of all documents on cards. The two distinguished Belgian scholars, founders of the IIB, Paul Otlet (1868-1944) and Henri La Fontaine (1864-1943) sought permission from Melvil Dewey (1851-1931) to use and expand Dewey Decimal Classification (DDC) scheme for arranging items in the bibliography. It is interesting to note that, La Fontaine received Nobel Peace Prize in 1913, the memorable year for India while Rabindranath

Tagore received Nobel Prize in literature. The Decimal Classification was in its fourth edition in 1894 and its pure notation of Arabic numerals impressed La Fontaine and Otlet. Subsequently, IIB adopted DDC scheme. A new epoch was started in the history of classification. An enumerative scheme found plenty of new avenues in facet analytical approach. The main class of DDC remains almost unchanged, (except the language class was shifted from 4 to 8) and synthetic features for class-number synthesis for micro-documents were introduced. Those synthetic features gave new dimensions to DDC^{6,7}.

3. Duyvis, UDC and FID

In March 1920 Otlet was invited to Rome to survey the documentation services, needs and collections of the International Institute of Agriculture, founded in 1905, which, after the Second World War was handed over to the Food and Agriculture Organization (FAO) of the United Nations. The report of his survey was published in 1921⁸. He was also requested temporarily for information about bibliographical classification and the management of libraries by Duyvis, who was then involved to develop a library at the Dutch Patent Office. Duyvis visited Brussels to study the methods of the IIB at first hand.

In Brussels he found, as was described by Lorphevre⁹, *"...an institution that was trying to get itself going again after the War; interrupted relations had not yet been resumed; subscriptions were non-existent; the sections of the IIB no longer gave evidence of life. In the midst of this imbroglio two men laboured, Otlet and La Fontaine, the two idealists each of whom had sacrificed time and money to their work. Donker Duyvis was of the same cast and decided to put himself at the command of the two Belgians ... he was overwhelmed by the grandness of the work, by the disinterestedness of its founders, by the magnitude of what remained to be done, and for forty years afterwards he did not depart from this attitude"*.

Duyvis actively participated in the First Quinzaine Internationale. The word *Quinzaine* comes from the French word *quinze*¹⁰, meaning fifteen. The Quinzaine Internationale or International Fortnight is a conference spanning over fifteen days. The Conference resolved that an International Union or Federation of Bibliography with National Councils should be created. The international bureau or centre would be the IIB. A primary aim of the Union or Federation would be the further development of the Tables of the Dewey's Decimal Classification. It was agreed that the Tables should be reissued and made up-to-date as soon as possible. While the conference appreciated

the work of IIB, it recognised that there was much to catch up because of the interruption due to First World War. The Conference adopted the following resolution:

“Considering the importance that documentation has assumed in scientific and practical affairs, especially in the course of the war; considering the great effort expended under the leadership of the IIB by purely voluntary co-operation, but observing the powerlessness of following the work actually begun with the means at its disposal up till now, it is desirable that the Repertoire Bibliographique Universal become an international public service. It is for the League of Nations ... to take the initiative in the creation of such a service”¹⁷.

The Dutch delegation along with Duyvis promoted the idea of developing National centres in different countries which was very different from the approach advocated by Otlet, who dreamt of a Global Universal documentation centre or Repository. Duyvis founded the Nederlandsch Instituut voor Documentatie en Registratuur (Nider) in 1921. It became an important centre for providing scientific and technical literature to services and industrial concerns¹². The IIB then planned out for revising the Universal Decimal Classification. A committee for its revision in which Duyvis was an active member, was set up. Two sections of the Classification were printed that year (1921), the Abridged Tables with a new introductory explanation of how the classification worked and part of the tables for the division. In January 1922, Duyvis prepared revisions for organic chemistry and colloid chemistry consisting of nineteen typed pages. He also attempted to interest the International Union of Pure and Applied Chemistry (IUPAC) in the Classification, and in July 1924 it applied for representation as a special international organisation on the IIB Council. Meanwhile, Duyvis helped Otlet to draw up the constitution of the Classification Committee, which was the official body through which the IIB executed the works on classification. The Committee had its own Secretariat appointed by the IIB Council. The Secretariat was designated as having been provisionally assumed by Nider, and Duyvis was appointed as the Secretary¹³.

In the IIB Council meeting, held in 1925, Otlet discussed a then new subject, i.e. the microphotographic book¹⁴. He jointly contributed a paper in 1906 with its inventor, Robert Goldschmidt. In 1925 they contributed another paper on the same subject. Otlet believed that microphotography would speed up progress towards the realisation of the world network of documentation centres, which was initiated by IIB because it permitted an economy of effort in the conservation and distribution of documents in a way which was impossible by means of anything available at that time^{15,16}. During 1925

the work for developing the European version of the Decimal Classification was started. Duyvis reported to the Classification Committee meeting that year that 141 notes about changes and extensions had been exchanged. He observed that little work was so far done on the unification of the American and the European versions of the Decimal Classification. Duyvis took initiative for expansion and modification of the same. In Europe, second-hand copies of the twenty-year old first edition of the European version earned as much as \$200. Duyvis and Otlet urgently demanded a new edition and they hastened with revisions as fast as they could. Duyvis requested Godfrey Dewey (Melvil Dewey's son) to develop new set up in 1924 for the smooth functioning of the Institute¹⁷.

Days were changing. The differences in opinion and views between Duyvis and Otlet slowly turned prominent. Wright said, *“At the IIB, Otlet and La Fontaine gradually displaced from their duties by a new generation of leaders, including the Dutchman Donker Duyvis. These men did not share Otlet's enthusiasm for a central repository; rather they focussed their efforts on updating the classification system to be used by local libraries. As the Universal Decimal Classification began to gather more traction after its translation into English, the Institute shifted focus away from the Universal Bibliography-much to Otlet's dismay”¹⁸*. Otlet, however, at that time was discordant with Duyvis' activities, ignored all these arrangements and went his own way. Duyvis once said, *“I tried to educate M. Otlet to more accuracy, but at that moment I myself had forgotten a bag of documents... so I have no more the courage to moralise on my fellow man's promptness”¹⁹*. A conflict of visions between an entire repertory versus the standardization of the classification system for local libraries then took place in IIB. The Dutch proposal at the Cologne Conference to decentralise the Repertory was, in fact, a political manoeuvre to secure for the Science Museum in London that part of the Repertory most useful to it in place of the entire Repertory which the Conference, following Otlet's proposal, wished to see transferred to Geneva²⁰. Meanwhile, Duyvis was elected as the Secretary-General of IIB in 1924, which was described by Otlet and La Fontaine as an unexpected phenomenon. By 1929, the second edition came out with the tables of the common subdivisions and the Index. La Fontaine told in a meeting that more than 1100 copies had been sold in advance, fifty copies going to America, and all these happened without serious publicity. Printing expenses would be met, he remarked, when 1400 copies were sold, and it was foreseen that the manual would be out of print in a short time. Duyvis anticipated that the Index to the new edition, which was being prepared by La Fontaine, would be issued within six months, and

the Council appointed Carl Walther, Samuel Bradford and many others to work on the tables of the common subdivisions. It was generally agreed that these should be altered as little as possible, although Duyvis criticised the subdivisions and juxtapositions in the geographic table and the separation of the time divisions into two groups. Because of the advanced stage of printing of the new edition Duyvis gave a detailed report on it at the meeting, stressing an observation that he had already made a number of times, *“the present edition must be considered as a provisional one”*. Duyvis reckoned this edition as a representative of something new and perfectible not the definitive statement of something old and perfected. The parts for science and technology in second edition, was almost completely rewritten by Duyvis with the help of various collaborators. Lorphevre²¹ gives a vivid picture of the preparation and final printing of this new second edition of the full UDC. The responsibility of the editors was distributed as follows: the pure and applied sciences were constructed under the authority of Duyvis and the human sciences under the direction of Otlet and La Fontaine. Duyvis recruited hundreds of subject specialists to develop the schedule. In November 1926, printing began. The collation of the materials in different languages presented the greatest difficulties. There were English, German and Dutch texts, all having to be translated into French. A good part of the translation was executed at Brussels, but the files were scattered everywhere with linguistic confusions. A letter from Duyvis dated 31st July 1927 remarked, *the linguistic control is the heaviest part of the works*. After translation, the text was returned to Duyvis for decimalisation. Duyvis preferred to work on a text showing the subordination of ideas but devoid of decimal numbers.

Two extremely important matters about the future of the UDC and the IIB were discussed by Duyvis in his 1929 report to the Classification Committee, i.e. the problem of preparing an accurate and standard one from the imperfect and provisional edition of the classification, and the problem of the reconciliation of the European version of Decimal Classification (CD) with the American version of Decimal Classification (DC). In considering the first of these problems, Duyvis²² wrote to the Council *“Part zero of the classification had been translated into German and published by the German Standards Institution. Not only did this not contain a single printing error. It contains a number of small extensions, corrections in the definitions, and other small improvements which we call «retouches» ... I think this is the way by which to arrive at a really accurate, standard edition. We should promote the reprinting of very carefully studied parts of the Manual either in English, German or the French language, and give*

them the «imprimatur» of the Institute only after rigorous checking. These small «retouched» editions will together build up the standard manual, for which the present new manual serves as the raw material. It is obvious that the process will require a decennium, but as long as we have no strong financial support at our disposal, I do not see any other possibility”.

This proposal was accepted by the 1931 Hague meeting as IIB policy for the Abridged Editions. The concept of abridged edition was certainly an aberration from Otlet's centralist views, which made Otlet annoyed. Throughout the career, Otlet firmly resisted decentralisation of the classification along with decentralisation of the Repertory. A crisis arrived by the IIB proposal in 1928 to alter the tables for botany at 580.32. Duyvis proposed that the order of the tables should be converted from the complex to the simple, and the newer Engler-Gilg botanical classification, which was said to be more modern hitherto, should be followed as a basis for developing the CD tables for botany. But his proposal was ignored and no change from the older Bentham-Hooker order used in the DC was accepted. Duyvis was irritated by this and proposed that CD should go its own way independently of DC. He then declared his inability to be associated with this project. The English people then blamed Duyvis as the Dictator of the classification. Otlet's universal philosophy and belief in a great centralised bibliographic repertory confronted Duyvis pragmatic lookout, which is perhaps one of the most remarkable conflict in the history of knowledge classification.

The year 1931 was very important for the IIB. It was the year in which work on translating the UDC into English was formally begun. It was the year of German translations; a year in which the centralist character of the Institute was further eroded by the growing strength of national sections. It was the year in which the Institute's name was changed and a Dutch President, J. Alingh Prins, took the charge of the office. The Germans emerged as an important group in the fortunes of the Decimal Classification and the IIB in 1931. In his report on the activities of the Classification Committee for that year, Duyvis described the new shape the organisation of work on the UDC had taken following his scheme of extension and revision through translation. In Germany, he announced, an abridged manual of the UDC was being prepared. Duyvis thought, this edition would be far more extensive than the French edition, and might be used in public libraries, academic and also special libraries as well.

Rayward²³ remarked, Frits Donker Duyvis, who succeeded Paul Otlet as the central figure in the International Federation for Documentation went one step further. A chemical engineer turned patent official,

Donker Duyvis was deeply committed to efficiency and the scientific management movement. Buckland²⁴ remarked, Duyvis accepted Otlet's view that the document was an expression of human thought, which contributed his interest in the work of Rudolf Steiner, the founder of anthroposophy, a spiritual movement based on the idea that there is a spiritual world comprehensible to pure thoughts accessible only to the highest level of mental knowledge. For these reasons, Duyvis was also sensitive to what we could call today "the cognitive aspects of the news. Duyvis was the promoter of the first International Organization for Documentation (FID). The International Institution of Bibliography (IIB) had to face lots of administrative and financial constraints after the First World War. In the years 1914-1924, the leadership of the president of the institution was not just the CEO. However, Duyvis made the first post-war reorganization in the leadership of this institute, which resulted in an improvement in the performance of the institute's work.

According to Ranganathan¹, Donker Duyvis was primarily a classificationist and not a grammarian of classificatory language. Even as a classificationist he did not have full freedom to design a scheme de novo. On the other hand, he had a handicap. For he inherited a scheme, that scheme was the UDC. He inherited it from Henri La Fontaine and Paul Otlet, both of Belgium. They had been joint predecessors in adopting the DC as the core for UDC. They were its first builders". According to Kent², "Duyvis initiated the development of UDC since 1928. He devoted all his energies to the development of the UDC and to the international standardization in the field of documentation. He actually developed a school of standardization in the area of bibliography and documentation. It was Duyvis' influence that still fair numbers of Dutch specialists assist on national and international level in the development of UDC. Many Dutch specialists are active members of different committees of ISO and UNISIST.

The DDC became more intensive and flexible. The UDC is the first faceted classification. Satija²⁵ interpreted UDC as the herald of the Colon Classification (CC) first published in 1933, although S R Ranganathan claimed his classification independent of the UDC. It has proved an apt classification for information analysis and retrieval, particularly for highly specific subjects in documentation work. The first edition of UDC came out with the title "Manuel de reporterie bibliographique universelle" in French during 1905-07. It comprised 33,000 classes. The 2nd edition, also in French, was published during 1923-1933 and was titled Classification Decimale Universelle. The 3rd German, and 4th English editions were published

in 1933 and 1936, respectively. At present, different editions in eight languages are available.

The upgradation of UDC edition was initiated under the auspices of Duyvis that remained as a distinguished phenomenon in the history of knowledge classification. As Ranganathan¹ said, "During the long stretch of 35 years (1924-'59) he had applied himself assiduously to promote the continuous expansion of UDC and its expansive use all through the world". Actually Duyvis established several committees of subject specialists in IIB to expand the UDC schedules of different subjects. Duyvis argued that neither Otlet nor La Fontaine had ever intended to develop UDC as a theory. Otlet used this term explicitly to describe the visual explorations of the multidimensional nature of his own classification. His special work also covers several areas in documentation and standardization, and is often related to the development of industry. Duyvis was considered the last of the great document pioneers to work continuously with Paul Otlet and Henri La Fontaine. If it was Otlet, who first understood that classification was the heart of all the documentation, it was Duyvis who made this finding in everyday practice.

4. Differences with Otlet

Otlet and La Fontaine first envisioned a *city of knowledge* in 1910, which Otlet originally named the Palais Mondial²⁶ (World Palace) that would serve as a central repository for the world's information. In 1919, just after the First World War, it was formed in the left wing of the Palais du Cinquantenaire, a government building in Brussels. The Palais Mondial was closed in 1922, due to lack of Government funding, but was reopened after initiative from Otlet and La Fontaine. Otlet renamed the Palais Mondial as Mundaneum²⁷ in 1924, which eventually contained 100,000 files and millions of images. In these years, the reports prepared by Otlet were discordant with Duyvis' vision. Not only did he ignore the new organisation of the IIB, his thought remained firmly anchored to the concept of the IIB as embedded in the institutional setting of the Palais Mondial. Duyvis surmised that Otlet might not grasp the fact that in the late 1920s the IIB had to find new directions and would gradually become independent both in terms of its new regional organisation and its emphasis on the Decimal Classification. Otlet's universalist and centralist approach soon became irrelevant to the new faces appearing within the IIB. As both Secretary General and Secretary of the Institute's most important Commission, the International Committee for the Decimal Classification, Duyvis became more prominent and powerful in the affairs of

the Institute than ever and conflicts with Otlet gradually increased. Otlet alleged, that the Dutch lobby had shown constant inkling of the founders of the IIB, and their intervention had led indirectly to *the paralysis of action at the Centre in Brussels*²⁸. Meanwhile, Duyvis was elected as Secretary-General in 1928. Otlet said, *no one had intervened in Germany to obtain a clear understanding of the IIB's rights in the Decimal Classification there*. He was highly distrusted and resented by the major changes that had taken place in the IIB since 1924. He strongly disapproved the changes incorporated through Duyvis' influence in the Decimal Classification itself. According to Otlet, the parts for science and technology reframed by Duyvis, *hardly followed any principles or rules*²⁹. After being requested by Otlet for an indication of the rules, Duyvis replied, *the rules will be determined when it is finished*²⁹. Otlet was indignant of the matter and berated that the modifications made would destroy the stability of the system. There was no central document upon which efforts could be fixed in accordance with Dewey. The American version of Decimal Classification was modified without any assurance that the European version would be. Otlet was very discouraged by all this and thought not go to the Frankfurt conference. He said that the real cause of all the trouble was *the double betrayal*²⁹ that he and La Fontaine had suffered.

Rayward³⁰ mentioned that: *"Duyvis was in a sense caught in the line of fire. Above him in the Dutch Patent Office and President of the Institute was Alingh Prins, and confronting him in Belgium was the disgruntled Otlet who in the duration of four months fired off twenty-six notes at him"*. Duyvis was eventually agreed with Otlet that too many people regarded the UDC as an end in itself and not as a means. Rayward³¹ mentioned: *"but he also observed that it was necessary to distinguish scientific matters (such as the Classification which was satisfactorily under way) and administrative matters which were not. Hence, it is clear that Duyvis was in favour of appropriate division of assigned task. According to Duyvis³², the major problems in the IID were administrative and arose from the absence of paid personnel. It had to rely too much on voluntary work. Duyvis remarked, the real problem is that the decisions are not kept to. I beg you to take this seriously. The IID will be destroyed because of the lack of strictness in carrying out decisions"*.

Duyvis submitted a draft of his own for the common subdivisions and got an extraordinary response from Otlet. Otlet³³ replied Duyvis, *"Upon receipt of your counter-draft, I could express only three sentiments: discontent, sadness or merriment. I have experienced all three successively, but I have expressed only the last, for I want to have friendly dealing with you and continuous collaboration... Little by*

little we have followed divergent routes, and the counter-draft you have sent me is like a map of our respective positions at the moment... This is the position. My draft is the development of decimal thought pursued in the course of thirty-seven years. Yes, thirty-seven years, a nothing, a straw. I believe that in 1893 I understood that trait of genius of Dewey's, decimalisation, better than anybody else. My efforts revealed the classification, and presented it theoretically and practically to the first conference. Because of the addition of the common subdivisions, the IIB adopted the Decimal Classification. Since then, the common subdivisions have never ceased to be objects of my research and invention. Now, not only can I not rally any one to my solutions, I cannot even interest them in my way of expressing the problem Never mind! As it is a question of standardisation and not of science, I bow to the vote of the majority....But if I have to accept it from a practical point of view, from a theoretical point of view 'I look for a diversion for my "sadness" and my "discontent" by laughing at the really "comical" situation we have reached....". The International Office of Bibliography was completely separated from the IID in 1932 and the Council assumed that they were two different organisations. It was a great shock to Otlet. He criticised it in great detail and faced another confrontation with Duyvis. They pointed out that: *"the idea of a repertory localised in a single place was splendid in 1895, but one must recognise that there has been a progression of ideas and to-day federation replaces the local individualism of other times... In our opinion a localised Universal Bibliographic Repertory in a single place has only a small value"* in today's context³⁴.

As Rayward³⁵ said: *"the year 1932 is taken as the point at which Otlet's influence ceased to be of any primary importance in shaping the structure and work of the IID. In that year in the evolution of the Institute's history it was as if youth and age, innovation and reaction, future and past at last confronted each other decisively. There were no pitched battles between the opposing forces, only a number of minor skirmishes representing sharpening clashes between diverging but still closely related ideologies. There was certainly no final or completely decisive victory. Triumph would have sacrificed on the one hand a past rich in association and achievement, and on the other the possibilities of a promising future.... Otlet and La Fontaine continued to be Secretaries-General until 1939 when they were ceremoniously created Honorary Vice-Presidents. They were Secretaries-General of the Institute, then, in 1937 when it went through yet another modification of statutes and a change of name to become the International Federation for Documentation (FID). Otlet continued to work on the Decimal Classification, continued to correspond incessantly, indefatigably with Duyvis. His slightly stooped figure with*

its high, domed forehead and vividly white moustache and beard continued to appear at the annual meetings of the IID, then the FID". According to Rayward, Otlet seems never to have lost a sense of alienation from the reshaped Institute with its younger leaders and narrower program. Rayward³⁶ described Otlet at this stage as: "*the old leader in Brussels, a man sixty-five years old and of declining powers. He had grown inflexible and was heavy with the history of his Institutes. Gradually, he had been forced to give way to Duyvis who represented a new order. Duyvis, the young leader in The Hague, was fresher, freer, more single-minded than Otlet. Unlike Otlet, there was for him no wearying, increasingly weighty burden of few and small victories overwhelmed by the more frequent defeat of past aspirations. Nor was he encumbered by the compulsions of philosophy*".

5. Duyvis as Cited Author

The following 9 articles cited Duyvis 18 times as recorded in Web of Science database:

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According to Google Scholar³⁷, Duyvis received total 98 citations with an h-index value 6 and i-10 index value 3.

6. Conclusion

The contributions of Duyvis in developing different versions of UDC are discussed here. It is observed that Duyvis played a key role during the golden days of IIB, when UDC was under construction on the basis of DDC. Though he had many controversies with Otlet and La Fontaine, yet his contribution made the outcome of UDC possible. Being a chemical engineer, that he developed interest in bibliographic classification is an astonishing phenomenon. Actually, the analysis of different excerpts from letters and other documents answered questions regarding Duyvis' role in the context of UDC. But what created his interest in classification from the domain of applied chemistry needs further research. According to Ranganathan (1961), Donker Duyvis was primarily a classificationist and not a grammarian of classificatory language. Several excerpts from different documents presented here confirms that if Otlet first understood that classification was the heart of all the documentation, then it was Duyvis who made this everyday practice.

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