

# Counter-research: A History of Science Shops in the Netherlands

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## Introduction

In March 1978, the then former minister of science policy Boy Trip opened the first official science shop at the University of Amsterdam. At science shops, citizen groups were (and are) invited to come with a question that requires scientific research. Students or staff members at the science shops took care of the question and made sure appropriate research was conducted to solve the issue. Science shops were available to research all kinds of questions coming from non-profit groups, varying from questions about the most environmentally-friendly kind of bag to the discharge of household waste to the improvement of training for unemployed people.<sup>1</sup> Science shops were established at all universities in the Netherlands, as well as at universities abroad, following the Dutch example.

Nearly forty years later, social relevance is an important criterion in evaluating research proposals, in accordance with a general tendency to emphasize the social relevance of research.<sup>2</sup> Recently, movements like *Science in Transition* have urged for the democratization and social relevance of the research agenda. In the Netherlands, the National Science Agenda is an example of an initiative to get a wide audience involved in the formulation of research topics.<sup>3</sup> Furthermore, universities aim for cooperation with corporate business in valorisation centres for the social application of academic knowledge production. On first sight, this seems to be a favourable environment for science shops: places where research is being conducted to solve immediate questions originating from society.

This is not the case. In Utrecht, all science shops have closed down in the last decade. Other science shops, such as the science shop of the University of Amsterdam, were already closed down in the 1990s. Science shops still exist at the universities of Groningen, Wageningen and Twente. Although the shops seem to function well and are embedded in the university's public outreach program, their role is not as big as before: the science shops in Groningen have been downscaled in the previous decade. The contrast between the favourable climate for citizen participation in science and the marginal position of the institutions that pioneered in getting citizens involved in scientific research, is the starting point for this exploration of the history of science shops. How is it that

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<sup>1</sup> *Magazijn, Blad van de Utrechtse wetenschapswinkels* (September 1988-December 1989).

<sup>2</sup> Evaluating Research in Context, *Handreiking Evaluatie van maatschappelijke relevantie van wetenschappelijk onderzoek*, report by HBO-raad, KNAW, NWO, VSNU and the department Science System Assessment of the Rathenau Instituut, [https://www.knaw.nl/nl/actueel/publicaties/handreiking-evaluatie-van-maatschappelijke-relevantie-van-wetenschappelijk-onderzoek/@@download/pdf\\_file/20101024.pdf](https://www.knaw.nl/nl/actueel/publicaties/handreiking-evaluatie-van-maatschappelijke-relevantie-van-wetenschappelijk-onderzoek/@@download/pdf_file/20101024.pdf), consulted 20-10-2017.

<sup>3</sup> H. Dijstelbloem, F. Huisman, F. Miedema, W. Mijnhardt, 'Waarom de wetenschap niet werkt zoals het moet, en wat daar aan te doen is', *Science in Transition Position Paper* (October 2013), <http://scienceintransition.nl/wp-content/uploads/2013/10/Science-in-Transition-Position-paper-versie-2.pdf>, consulted 22-10-2017.

science shops currently have almost no place in the quest for socially relevant research at Dutch universities?

## Sources

Science shops have provided a great amount of sources through their numerous publications. These include annual reports of individual science shops, reports of research projects and two edited volumes on the occasions of the fifteenth and twentieth anniversary of the first science shop. In addition, because of the public nature of science shop research, research projects were regularly covered in newspapers or magazines issued by the universities. These sources provide a great deal of information on how the science shops were positioned in and outside of academia and what the goals of the science shops were. The sources also give insight in debates and criticism on the science shops.

Independent historical literature on science shops is largely absent. Most articles on Dutch science shops present the shops as active and viable institutions. The difficulties that arose in the late 1980s and 1990s are considered as obstacles to overcome rather than a sign that science shops were losing ground at Dutch universities. The most elaborate work on Dutch science shops is a PhD thesis from 2002 in Science and Technology Studies, by Nicole Farkas. This dissertation provides an extensive description of Dutch science shops. However, since Farkas' research questions were designed to understand the success of science shops, the research does not address the fact that most science shops eventually closed down.<sup>4</sup>

Joseph Wachelder, involved with the science shop of Maastricht University, wrote an article in 2003 examining the motivation behind the various routes taken by Dutch science shops in order to survive financial cutbacks.<sup>5</sup> Furthermore, there is literature on science shops on an international scale, such as two articles by Loet Leydesdorff on the success, failure and future of science shops, commissioned by the European Union.<sup>6</sup>

## Research questions

I will look into the emergence of science shops in the Netherlands from the 1970s onwards. In the first chapter, we will see in which political circumstances the science shop were established, when and where the idea of the science shop came into being and how the first shops came into effect.

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<sup>4</sup> N. Farkas, *Bread, Cheese, and Expertise: Dutch science shops and democratic institutions*. Diss. Rensselaer Polytechnic Institute (2002).

<sup>5</sup> J. Wachelder, 'Democratizing Science: Various Routes and Visions of Dutch Science Shops', *Science, Technology, & Human Values*, vol. 28, no. 2 (2003), 244-273.

<sup>6</sup> L. Leydesdorff, 'The Dutch Science Shops', *Trends in Biochemical Science*, vol 5. no. 5 (1980), I-II; L. Leydesdorff, J. Ward, 'Science shops: a kaleidoscope of science–society collaborations in Europe', *Public Understanding of Science*, vol. 14, no. 4 (2005), 353-372.

After this, I will take a look at the procedures of science shops and the criticism they faced. I will focus on the science shops at Utrecht University and the University of Amsterdam.

The science shops in Amsterdam and Utrecht provide good cases for comparison: the chemistry shop in Utrecht was among the first science shop initiatives in the Netherlands. Amsterdam, on the other hand, had the scoop of having the first centralized science shop. The science shop in Utrecht remained fragmented across the faculties. In the third chapter, the goals of the science shops will be examined. To what extent was the science shop an effective means to change the university's research agenda and study curriculum, as was its second most important goal, after providing client groups with support through research? The fourth chapter deals with the difficulties faced by the science shops from the 1980s onwards. I will show how factors from within the university, as well as (political) developments outside of the university led to the marginalization and, in many cases, eventually the closing down of the science shops. In the last chapter, I will compare the initial goals of the science shops to public science activities organised in recent years, as well as the science shops that are left in the Netherlands.

I will not only place the science shop in a historical context of political movements within and outside of the university, but I will also look at the wider goals of the science shops: did the shops manage to reform the university policy like they wanted to, and what happened to this goal when all but three science shops closed down? Are there other initiatives that took up this task, perhaps in a more effective way? And how do these activities compare to the underlying idea of the science shops?

This study shows where current ideas and practices of Dutch universities regarding socially oriented research and education originated and how these ideas have changed in the last decades. Taking a look at the emergence and – in most cases – disappearance of science shops as a means of conducting socially relevant research in the Netherlands, provides a broader picture of post-war Dutch science policy, as well as the effects of the post-war protest movements and initiatives on science and society.

## Chapter I

### From democratization movements to the first science shops

It is hard to identify one clear starting point of the science shop. Although the first central science shop, operating on behalf of all faculties, opened in 1978 at the University of Amsterdam, students and volunteers had been running similar initiatives since the early 1970s. These initiatives can be seen as a continuation of post-war concerns about the direction of scientific research and a wish for democratization both within and outside of the university.

In this first chapter, I will look at the origins of science shops in the Netherlands. First, I will examine and the concerns that caused scientists and students to organize themselves and argue for a more socially oriented direction of scientific research in the post-war Netherlands. After this, the establishment of science shops at two universities, the University of Amsterdam and Utrecht University, will be examined: what were the motives to start these institutions, what were the goals expressed by the officers in these science shops and what criteria did they apply for research requests?

These two universities are suited for comparing, since they both started their science shops in the course of the 1970s, mutually influenced each other, but at the same time were very different in their set-up. The University of Amsterdam chose for one central science shop – the first one – while a decentralized approach, divided by faculty, was maintained in Utrecht.

#### Organizations concerned with the function of science in society in the Netherlands

After the Second World War, the social aspects of science increasingly became a point of interest. Courses dealing with ‘science and society’ were organized at universities, while discussions on science and social responsibility were fuelled by student protests in the late 1960s and a growing concern for the exhaustion of natural resources following the Club of Rome report.<sup>7</sup> Rip and Boeker made a distinction between the ‘heroic age’ of science, that lasted well into the sixties, and the ‘age of reflection’, that started somewhere around that point.<sup>8</sup> Despite this distinction, the discussion on the social responsibility of scientists has been described as a “debate with no fixed agenda”, depending on individual views on the role of the scientist.<sup>9</sup>

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<sup>7</sup> A. Rip, E. Boeker, ‘Scientists and social responsibility in the Netherlands’, *Social Studies of Science* vol. 5, no. 4 (1975): 457-484, 472-473.

<sup>8</sup> *Ibidem*, 462.

<sup>9</sup> *Ibidem*, 462.

The concerns with the social aspects of science resulted in various initiatives. The *Bond van Wetenschappelijke Onderzoekers* (Association of Scientific Researchers, VWO) was established in 1946, with the British Association of Scientific Workers (ASW) as one of the inspirations.<sup>10</sup> Both scientific development and social responsibility were among the goals of the VWO.<sup>11</sup> Following the example of the 1935 ASW report on the 'frustration of science', the VWO put similar concerns in a report in 1954, although publication would not take place until 1967.<sup>12</sup> The absence of a fixed agenda becomes clear when one looks at the various subjects that were seen as part of this 'frustration of science': investments in research that was considered unnecessary, science communication (and the language of this communication) and the lack of students from the working class. Although the VWO was critical of the existing scientific practice, there was an underlying faith that these problems could be overcome. In principle, social problems were solvable with science. However, science was being held back by obstacles that should be put aside by an increasing rationalization of science itself. Among these obstacles were ideologies, interests, wastage and routine.<sup>13</sup>

The VWO was occupied with the relation between science and society, but its most important function was that of a professional union for scientists, disengaged from the abovementioned obstacles. The report created for the foundation of the VWO stated that the organization would refrain from any connection with political parties.<sup>14</sup> The association mentioned social responsibility of the scientific worker and an increased social function for the scientists among its objectives. For instance, the VWO campaigned against the development and use of an atomic bomb. However, the variation in political orientation among its members made the organization hesitate to take a stance in political issues.<sup>15</sup>

The VWO published a magazine on the social role of science called *Wetenschap & Samenleving* (Science & Society, W&S), which would also become the title of a university programme on this issue. The W&S movement was very active during the late 1960s and early 1970s, when it was still, but only loosely, connected to the VWO and the *Bond voor Wetenschappelijke Arbeiders* (Union for Scientific Labourers, BWA), of which the latter will be discussed below. It has been described as a colourful collection of critical scientists concerned with various issues, such as university democratization, emancipation and the Vietnam War.<sup>16</sup>

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<sup>10</sup> L. Molenaar, *'Wij kunnen het niet langer aan de politici overlaten'. De geschiedenis van het Verbond van Wetenschappelijke Onderzoekers 1946-1980* (Delft 1994).

<sup>11</sup> Rip, Boeker, 462.

<sup>12</sup> Ibidem, 463.

<sup>13</sup> Molenaar, *'Wij kunnen het niet langer aan de politici overlaten'*, 191.

<sup>14</sup> Ibidem, 50.

<sup>15</sup> Rip, Boeker, 463.

<sup>16</sup> H. Bodewitz, *'Wetenschapswinkels en Wetenschap & Samenleving.'*, in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 78-84, 79-80.



## Research for client groups

Less hesitant to take a political stance regarding the role of the scientist was the BWA, which was established as an alternative for the VWO and mainly consisted of younger scientists. They did not agree to the underlying faith in (frustrated) science and were aiming to change the university with critical science.<sup>17</sup> The socialist BWA positioned itself more politically than the VWO. The BWA aimed at confrontation rather than conviction.<sup>18</sup> In 1969, the 'Manifest' of the union was presented, on 'science versus capitalism'. The manifest stated that scientific labour is hard to replace and that, therefore, academics had a strong potential to function as a strong force against a neo-capitalist society. According to the BWA, to become this force, science should be subservient to society. The ideas the BWA expressed about how science could serve society resembled the later practice of the science shops with regard to research commissioned by (action) groups. The 'Manifest' mentioned possible examples of the utilization of science for society: people should be able to come to the BWA with requests for research about the effects of the construction of a factory or the business operation of the company they worked at.<sup>19</sup> These were exactly the type of questions that would later find their way to the science shops.

The BWA and the VWO collaborated in establishing the Institutes for Socially Oriented Research (IMGOs), which can partly be seen as an execution of the plans that the BWA expressed in their 'Manifest'. Starting around 1978, the IMGOs operated parallel to the science shops and sometimes cooperated with the shops. The approach of the IMGOs was different in a couple of ways. Firstly, they wanted to conduct research with direct governmental support instead of university support, and to conduct the research together *with* their clients instead of *for* their clients. Furthermore, they distinguished themselves with a focus on four themes: agriculture, mental health, regional development and occupational safety and –health, with each specialization located in one IMGO (in respectively Wageningen, Rotterdam, Middelburg and Utrecht).<sup>20</sup> Their specific mediation model and the similarities with the existing science shops eventually caused the IMGOs to either close down or merge with a science shop. The latter was the case in Middelburg, where a science shop was opened in 1986 as a joint project of the University of Rotterdam, the Tilburg University of Applied Sciences and the Rotterdam IMGO for regional development. This science shop was the first one to open in a city without a university.<sup>21</sup>

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<sup>17</sup> Bodewitz, 'Wetenschapswinkels en Wetenschap & Samenleving', 468; Molenaar, 243.

<sup>18</sup> A. Rip, 'De ambivalente maatschappelijke rol en taak van wetenschapsstudies', *GEWINA/TGGNWT* vol. 25, no. 1 (2012): 60-69, 62.

<sup>19</sup> Molenaar, 242.

<sup>20</sup> A. Jacobs, 'Van IMGO naar Wetenschapswinkel; kleine stappen op een lange weg', in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 51-62, 53-54; Farkas, *Bread, Cheese, and Expertise*, 61-62.

<sup>21</sup> Jacobs, 'Van IMGO naar Wetenschapswinkel; kleine stappen op een lange weg', 58-61.

## The establishment of a science shop at the University of Amsterdam

As had been clear during the students' protests in the late 1960s, criticism and ideas on the reorganization of science were anything but restricted to scientific staff. The student protests led to a reform in the organizational structure of Dutch universities. In 1970, the Bill for University Board Reform (*Wet Universitaire Bestuurshervorming*, WUB) passed. The organizational reform led to an increase of the influential power of students and supporting staff.<sup>22</sup> In the 1970s, student initiatives calling for a more socially relevant function of the university led to the first initiatives that resembled science shops and looked for cooperation with social groups. In the W&S programme at the University of Amsterdam Faculty of Mathematics and Physics, the idea of opening a science shop came up in 1977. In the first instance, the shop was meant for 'Biology and Society'. Besides the goal of doing research for action groups, it aimed at informing local residents on issues such as green areas and keeping pets. A grant for the project was awarded by the university council, with support of the students' council. This science shop was seen as the university's answer to the call for IMGO's. Although the shop was initially aiming at the natural sciences, other faculties joined during the first year.<sup>23</sup>

Loet Leydesdorff, one of the founders of the science shop in Amsterdam, distinguished four motives for the opening of the science shop. The first motive was the fact that there already were several activities and plans for chemistry- and biology shops. Towards the end of the 1970s, there were plans at all major universities in the Netherlands to set up science shops, or there were departmental science shops that had already been opened.<sup>24</sup> Although a clear starting point cannot be traced for the science shops initiatives, the Amsterdam chemistry shop had been active before the opening of the central science shop. As early as November 1977, there was a communist party's newspaper report of research conducted in association with the 'chemistry shop' in Amsterdam. The research showed that a chemical company had been discharging carcinogenic substances into a ditch. The research was requested by local residents. In the first years after the opening of the central science shop, the chemistry shop was located at a different address than the central science shop.<sup>25</sup> There were several law stores, that were not connected to universities and served individuals. The law stores were established by law students with the idea to do something in return

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<sup>22</sup> D. Hellema, *Nederland en de jaren zeventig* (Utrecht 2012), 39-41.

<sup>23</sup> J. Weerdenburg, 'Tien jaar wetenschapswinkels', in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 29-41, 32-33.

<sup>24</sup> Initiatiefgroep Wetenschapswinkel Technische Hogeschool Delft, 'Inventarisatie Wetenschapswinkels aan de Nederlandse universiteiten en hogescholen', in: Initiatiefgroep Wetenschapswinkel Technische Hogeschool Delft, *Symposium Wetenschapswinkel* (Delft 1978), 1-13, 1.

<sup>25</sup> 'Uithoorns bedrijf lost kankerverwekkers', *De Waarheid* (29-11-1977), <http://resolver.kb.nl/resolve?urn=ddd:010376789:mpeg21:a0101>, consulted 15-2-2017; Wetenschapswinkel Amsterdam, *De Wetenschapswinkel*, vol. 3, no. 3 (March 1982), 27.

for society, which contributed to their education through taxes.<sup>26</sup> These initiatives lacked the aim to change the university curriculum or science in general. This, and the fact that they were not specifically aimed at (disadvantaged) groups sets them apart from the science shops addressed in this study.

The second motive for the opening of a science shop expressed by Leydesdorff was the fact that a working group at the University of Amsterdam had suggested to open an office for regional contact. The plan for a regional office was inspired by the W&S group, who wanted to put their ideas on socially oriented science into practice. Finally, the BWA had proposed the establishment of *Instituten voor Maatschappelijk Gericht Onderzoek* (Institutes for Social Research, IMGO's).<sup>27</sup> A third motive can be described as a broader need for a practical implementation of the ethical questions about the responsibility of the scientist, raised by the W&S movement. The fourth and last motive was the wish of the government to restructure science- and research policy.<sup>28</sup> This wish was expressed by Minister of Science Policy, Boy Trip, who held a speech at the official opening of the Amsterdam science shop several months after the end of his term as minister. In his speech he stated that the initiative "fits entirely with the urgency of the socialization of scientific research as expressed by the entire parliament."<sup>29</sup>

The Amsterdam science shop expressed two goals in the first year of their existence: external democratization of science policy and a spread of knowledge, power and income. There were three criteria that the client groups had to fulfil. The group was unable to pay for the research, the group was not allowed to have commercial purposes and the groups should be able to use the results of the science shop research to develop activities that would advance the particular situation.<sup>30</sup> The Amsterdam science shop emphasized that the research projects were assessed on the basis of these criteria. However, no selection took place; any proposed research question that met the criteria was accepted as a research project for the science shop.<sup>31</sup> A member of the university's executive board emphasized the importance of the science shop in a short article in the first edition of the Amsterdam science shop's magazine, expressing the university's social significance as "production

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<sup>26</sup> 'Utrechtse juridische studenten beginnen wetenschapswinkel', *De Waarheid* (21-10-1971), <http://resolver.kb.nl/resolve?urn=ddd:010374917:mpeg21:a0038>, consulted 28-2-2017; 'Wetswinkel in Bijlmer', *Het vrije volk* (31-07-1973), <http://resolver.kb.nl/resolve?urn=ddd:010958184:mpeg21:a0152>, consulted 1-3-2017.

<sup>27</sup> Weerdenburg, 'Tien jaar wetenschapswinkels', 29-30.

<sup>28</sup> Ibidem, 29-30.

<sup>29</sup> F.H. Trip, 'Toespraak van F.H.P. Trip 10 maart 1978. Samenvatting', *De Wetenschapswinkel*, vol. 1, no. 0 (July 1978), 7-9, 8.

<sup>30</sup> Initiatiefgroep Wetenschapswinkel Delft, *Symposium Wetenschapswinkel* (Delft 1978), 1-13, 2.

<sup>31</sup> 'De Wetenschapswinkel van de Universiteit van Amsterdam' in: Initiatiefgroep Wetenschapswinkel Delft, *Symposium Wetenschapswinkel* (Delft 1978), 14-22, 15.

factor of scientific knowledge necessary in this society”, which should apply to people who had not had access to this knowledge.<sup>32</sup>

To achieve a far-reaching cooperation with the client groups, the client groups were included in the general management of the science shop. The management consisted of twenty-four members. Half of them came from the university: members of the science shops, faculty representatives and university council members. The other twelve came from client groups: six seats were reserved for representatives of the labour movement, the other six for representatives from other client groups.<sup>33</sup>

### Decentralized science shops in Utrecht

On 8 and 9 March 1978 a science shop symposium took place in Delft, where the possibilities and support for a science shop at the Technical University in Delft were investigated. An assessment showed that science shop initiatives existed at most universities in the Netherlands. Apart from the Amsterdam science shop, that would open its doors one day after the symposium, there were plans for central science shops in Leiden, Nijmegen, Rotterdam and the Free University of Amsterdam. The model of the science shop as one central point where organizations could head to with all their questions was not adopted at all universities. Initiatives divided by faculty or theme were already operative in Utrecht, Leiden and Wageningen and a similar set-up was in a planning phase in Groningen.<sup>34</sup>

### Chemistry and physics

The first (decentral) science shop in Utrecht was formed earlier in the 1970s in the form of a chemistry shop.<sup>35</sup> The Utrecht chemistry shop emerged from the *Werkgroep Projekt Onderwijs* (Workgroup Project Education, WPO). The group existed from 1972 to 1976 at the sub-faculty of Chemistry at Utrecht University. The WPO was a practical application of ideas that came from the student protest movement: a combination of education and research with room for discussion about the social implications of science. In 1972, a chemistry shop was included by the WPO group. Research was conducted for, among others, action groups, labour unions and neighbourhood committees. The chemistry shop expressed the goal of providing support to disadvantaged groups, but did not elaborate on their aims and criteria in the first years of their existence.<sup>36</sup>

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<sup>32</sup> W. Zijlstra, ‘Waarom de wetenschapswinkel?’, *De Wetenschapswinkel*, vol. 1, no. 0 (July 1978), 6.

<sup>33</sup> T. van Dijk, ‘Wat heeft de Amsterdamse Universiteitsraad besloten?’, *De Wetenschapswinkel*, vol. 1, no. 0 (Amsterdam 1979), 18.

<sup>34</sup> Initiatiefgroep Wetenschapswinkel Delft, ‘Inventarisatie Wetenschapswinkels aan de Nederlandse universiteiten en hogescholen’, in: Initiatiefgroep Wetenschapswinkel Delft, *Symposium Wetenschapswinkel* (Delft 1978), 1-13, 1.

<sup>35</sup> Farkas, 55.

<sup>36</sup> Initiatiefgroep Wetenschapswinkel Delft, ‘Inventarisatie Wetenschapswinkels aan de Nederlandse universiteiten en hogescholen’, 1-13, 9.

The political stance of the WPO was visible in the selection of research projects. For instance, the group worked together with the anti-Vietnam War movement and a Rotterdam communist group.<sup>37</sup> According to staff members of Utrecht University, this procedure clashed with their idea of a 'value-free science'. The sub-faculty therefore shut the project down in 1976.<sup>38</sup> According to science shop officer Jan Weerdenburg this was a sign of the university 'showing her conservative side'. On the other hand, a newspaper report on the politicization of project education claimed that the workgroup in fact had only little support among the faculty of chemistry.<sup>39</sup> The project was nevertheless continued without university support and expanded with a physics shop.<sup>40</sup> After cooperation with the university staff increased again, the chemistry shop again was granted an official status by the subfaculty in March 1981.<sup>41</sup>

### Biology

The biology shop in Utrecht was a student initiative inspired by the plans to open the central science shop in Amsterdam. In 1978, science shop officers from Amsterdam met with interested parties in Utrecht to investigate the possibilities to set up a science shop in Utrecht. During these meetings, it was decided that a central science shop, like the one in Amsterdam, would have little chance of success. This estimation was based on the differences between the political environments in Utrecht and Amsterdam. The history of the short-lived WPO can be seen as an indication that the university of Utrecht tried to avoid the image of a strong connection between the university and – especially left-wing - politics.

A group of ten biology students decided to form a biology shop. They were divided into three subgroups. One was dealing with the assessment of the questions of potential clients, another subgroup investigated the possibilities for cooperation with the subfaculty of biology and the third subgroup was occupied with the practical organization of the shop, the procedures to be followed and the contacts with other shops.<sup>42</sup> According to the first annual report of this science shop, the structure and goals of science shops should be dynamic and subject to change: the aim was to have a "continuous discussion about the work and policy of the biology shop." The possibility to change the

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<sup>37</sup> P. Cley, H. Govers, 'De Chemiewinkel Utrecht (CWU)', in: Initiatiefgroep Wetenschapswinkel Delft, *Symposium Wetenschapswinkel* (Delft 1978), 24-26, 24.

<sup>38</sup> Weerdenburg, 'Tien jaar wetenschapswinkels', 30.

<sup>39</sup> Ibidem, 30; G. van de Wetering, 'Vrees voor politisering remt projectonderwijs', *NRC Handelsblad* (26-10-1977), <http://resolver.kb.nl/resolve?urn=KBNRC01:000026201:mpeg21:a0098>, consulted 17-2-2017.

<sup>40</sup> Weerdenburg, 30; Initiatiefgroep Wetenschapswinkel Delft, 1-13, 9.

<sup>41</sup> H. Eerens, 'Tien jaar aktie onderzoek', in: *Chemiewinkel Utrecht, Tien jaar Chemiewinkel: aktie, reaktie* (Utrecht 1983), 4-6, 5-6.

<sup>42</sup> Initiatiefgroep Biologiewinkel Utrecht, *Jaarverslag 1978* (Utrecht 1979), 2-3.

structure was used in the same year, when it turned out that the group dealing with the sub-faculty and the group occupied with the shop organization did not function well.<sup>43</sup>

The influence of the Amsterdam science shop is clear when looking at the goals expressed by the biology shop in Utrecht. The Amsterdam science shop expressed two goals in the first year of their existence: external democratization of science policy and the spread of knowledge, power and income.<sup>44</sup> The goals of the Utrecht biology shop were to make scientific research accessible to groups who had not been able to utilize science, critically monitoring science policy and change it to meet the needs of these groups, and finally, to establish a structural relationship with the client groups.<sup>45</sup> In the criteria of the Utrecht biology shop it was stated that the client should not have any access to research other than the science shop. Next to that, they should not have the means to finance the research, should have no commercial purpose and should be willing to accept the consequences that the research could have. The biology shop implemented the criteria that the expected results of the research should be regarded as an advancement both by the biology shop and the client. Furthermore, the question should be manageable for the client group, the results should in principle be public and the question should be in the domain of the discipline of biology.<sup>46</sup>

#### Humanities

The Utrecht humanities shop was initiated as a joint project by enthusiastic students, and the faculty council. The humanities shop did not mention specific motives for the establishment of a science shop at the Faculty of Arts in their first annual report, but the existence of the institutions at other faculties and universities must have played an important role. At the Amsterdam science shop, research questions in the field of humanities were already researched by that time. A lot of these questions consisted of requests for translations.<sup>47</sup> It appears that the students involved in Utrecht had some doubts about the demand for a shop for questions in the field of the humanities. When they started their initiative in August 1980, science shops of other faculties had been operating for several years. Despite this, half a year was spent investigating the potential for questions and researchers. After a positive evaluation of this investigation and a two-year pilot phase, the humanities shop saw its definitive opening in June 1983.<sup>48</sup>

This shop too made the 'two goals' of science shops, both external and internal democratization, explicit. In a report of the shop it was stated that the first goal of science shops (in

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<sup>43</sup> Ibidem, 4, 8.

<sup>44</sup> Initiatiefgroep Wetenschapswinkel Delft (ibidem), 1-13, 2.

<sup>45</sup> Initiatiefgroep Biologiewinkel Utrecht, *Jaarverslag 1978*, 6.

<sup>46</sup> Ibidem, 6-7.

<sup>47</sup> Wetenschapswinkel Amsterdam, *Wetenschapswinkel tussen samenleving en faculteiten. Waarin opgenomen het jaarverslag 1979/1980 van de Wetenschapswinkel* (Amsterdam 1980), 164.

<sup>48</sup> Letterenwinkel Rijksuniversiteit Utrecht, *Verslag periode april 1983 – december 1984* (Utrecht 1985), 1.

general) was to contribute to the accessibility of scientific research to groups who normally do not have the means to conduct research. The second goal was to “contribute to the quality of education and research by fostering contact with social practice.”<sup>49</sup>

#### Veterinary Medicine

A less common motive for the establishment of a shop can be seen in the science shop project of the Faculty of Veterinary Medicine. Students, supported by several staff members, opened a science shop in 1985. Instead of an initiative by veterinary medicine students, the shop was opened at the request of the existing science shops in Utrecht, who had banded together in the ‘Utrechts Winkeloverleg’ (Utrecht shop consultation) and the rest of the Netherlands. The demand was strengthened by the fact that Utrecht is the only place in the Netherlands with a faculty of veterinary medicine. Hence, existing science shops at other universities were unable to do research on this terrain.<sup>50</sup>

The veterinary medicine shop adopted more or less the same goals as existing shops: making knowledge available to the targeted groups in order to help them. The second goal was formulated as to make the university of Utrecht more accessible for the targeted groups, by creating possibilities to include the needs of these groups in the research programme and by solving their questions at the faculty of veterinary medicine.<sup>51</sup>

#### Social sciences

At the faculty of social sciences, there had been an initiative by first-year students in 1977: the *Wijkwerkgroep* (Neighbourhood Working Group). The goal of this working group was to spend part of the curriculum on activities supporting the labour movement. Although a similarity can be seen in the way the group tried to change the university curriculum from within by starting a group, the working group differed from science shops in its goals by stating it could support the working class with means other than research. Furthermore, breaking down the isolation of the student protest movement by allying with non-student groups was mentioned as a secondary aim.<sup>52</sup> The science shop of the faculty of Social Sciences was opened relatively late, around the same time as the Veterinary Medicine shop. The shop implemented the same criteria as other shops – the clients should be non-profit, unable to conduct the research and willing to adjust their question in

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<sup>49</sup> Ibidem, 6.

<sup>50</sup> Diergeneeskundewinkel Utrecht, *Jaarverslag 85-88* (Utrecht 1988), 7.

<sup>51</sup> Ibidem, 8-9.

<sup>52</sup> F. Veldkamp, R. Vleugels, ‘Wijkwerkgroep Sociologie (WWG) (Utrecht)’, in: Initiatiefgroep Wetenschapswinkel Delft, *Symposium Wetenschapswinkel* (Delft 1978), 29-30, 29.

cooperation with the researcher. The shop aimed for requests on the terrain of education, welfare, labour and leisure.<sup>53</sup>

## Centralization

Although the shops in Utrecht were decentralized, by the beginning of the academic year 1985 there was a coordination centre for the various faculty shops in Utrecht.<sup>54</sup> In a 1981 report in which the necessity of a coordination centre was investigated, it was stated that the decentralized setting of the Utrecht science shops had many benefits. It was easier to stay in touch with students and the faculties than at a centralized science shop. Correspondingly, the decentralized setting made it easier to adjust the shops to the characteristics of the faculties: in some science shops, volunteers were active in conducting the requested research, whereas other science shops mainly served as a mediator between the client and the faculty. The benefits of a decentralized set-up were seen by the Amsterdam science shop officers as well. They moved towards decentralization from 1980 on by striving for the realization of project centres in order to achieve a more structural change in the university's research program.<sup>55</sup>

In Utrecht, however, the lack of a central point impeded interdisciplinary research and sometimes confused clients for whom it was unclear to which faculty they had to turn with their question. Furthermore, the absence of a central shop made it more difficult for existing science shops to provide support for beginning science shops. Moreover, the existence of the shops was often very little known to the staff and students of the faculties without a science shop.<sup>56</sup>

Before a central desk was opened in Utrecht, there was cooperation between the science shops in Utrecht in the form of a counsel. Aside from representatives of the faculty shops, a member of the university's public lecture programme, *Studium Generale*, took place in the counsel as well. The shops for biology, chemistry and physics collaborated on questions that overlapped with another faculty.<sup>57</sup> Looking at the categorization of the research requests to the Amsterdam science shop in 1979-1980, many questions did indeed not seem to fit one particular faculty. In the annual report, the questions were categorized by 'sector' – such as 'agricultures and fisheries', 'culture' or 'traffic' –

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<sup>53</sup> 'Wetenschap kort', *De Waarheid* (10-10-1985), <http://resolver.kb.nl/resolve?urn=ddd:010471792:mpeg21:a0043>, consulted 27-2-2017.

<sup>54</sup> Ibidem, 17; 'Wetenschapswinkel', in: *De Waarheid* (12-9-1985), <http://resolver.kb.nl/resolve?urn=ddd:010471768:mpeg21:a0037>, consulted 22-2-2017.

<sup>55</sup> Wetenschapswinkel Amsterdam, *Wetenschapswinkel tussen samenleving en faculteiten*, 6-7.

<sup>56</sup> Utrechts Winkeloverleg, 'Voorstel voor een Utrechtse wetenschapswinkel' (June 1981), Het Utrechts Archief (HUA), inv. IC48, 3.

<sup>57</sup> F. Pennings, F. v.d. Valk, *Wetenschapswinkels aan de R.U.U. Rapport inzake het onderzoek naar de organisatie van Wetenschapswinkels aan de R.U.U. en de mogelijkheden van een coördinatiepunt* (Utrecht 1983), 10.



rather than by faculty. The questions corresponding to a particular sector could be answered by research at different faculties. For instance, questions categorized in the sector 'care, social work' were generally investigated at the faculties of psychology and pedagogy, but could also find their way to the faculty of planning and demography, for example when the question was about the establishment or functioning of a community centre.<sup>58</sup>

It was suggested that a central point for the science shops in Utrecht should serve as a place to gather questions from clients, a coordination point for the existing faculty shops and an incentive for the establishment of new (decentralized) science shops. The shop would not serve as an independent science shop, but immediately passed on questions to the relevant faculty shop.<sup>59</sup> According to the report, the new central shop should find a place in the university's organizational structure.<sup>60</sup> Following the example of Amsterdam and science shops in the rest of the Netherlands, an interdepartmental structure was adopted, with room for representatives of university faculties, the science shops and client groups.<sup>61</sup>

## Conclusion

Both the science shops in Utrecht and in Amsterdam emerged as a logical and practical continuation of ongoing concerns about the social role of science. The goals and criteria they handled had many similarities and influenced each other, which shows that the different science shops can be seen as the same movement. Looking at the science shops in Utrecht and Amsterdam, there were gradual differences. Leydesdorff stated that the science shops in Utrecht were more heavily involved in politics, as opposed to the science shop in Amsterdam, which from its beginning tried to be incorporated in the context of the university.<sup>62</sup> The predecessor of the chemistry shop in Utrecht, the WPO, reprimanded by Utrecht University for its radical political stance, supports this view. The decentralized set-up in Utrecht showed a variety of the extent to which students at different faculties seemed to be concerned with the political and social side of science. While especially the chemistry shop, that emerged early in the 1970s, was explicit about its political stance, the shops at the faculty of humanities and veterinary medicine seemed to be following a practice that was well established at universities in the Netherlands. Compared to Utrecht, the Amsterdam science shop was ahead in its institutionalization within the university, but this also meant that action groups were sooner given a voice within the university context.

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<sup>58</sup> Wetenschapswinkel Amsterdam, *Wetenschapswinkel tussen samenleving en faculteiten*, 67-146.

<sup>59</sup> *Ibidem*, 4.

<sup>60</sup> *Ibidem*, 8.

<sup>61</sup> Utrechts Winkeloverleg, 'Voorstel voor een Utrechtse wetenschapswinkel' (June 1981), Het Utrechts Archief (HUA), inv. IC48, 56-58.

<sup>62</sup> L. Leydesdorff, J. Ward, 'Science shops: a kaleidoscope of science–society collaborations in Europe', 359.

## Chapter II: Science shops in practice

As seen in the previous chapter, the criteria handled by science shops were clear and highly similar in the various science shops. However, the wish of an action group did not automatically lead to a scientifically valid project. Their question had to be 'translated' into scientific research by the shop mediators. In this chapter, the procedures of science shops will be examined. I will look into what happened when an action group came to a science shop and how strictly the criteria were applied. Furthermore, in this chapter the perceived scientific value of the science shop projects within the first years of its existence will be discussed: what was the typical role of the science shop and how were the science shops perceived within the university?

### Acquiring projects

#### Chemistry shop

In the Utrecht chemistry shop that was part of the WPO, there was no fixed procedure for clients to make a request for research. By April 1974, the WPO was handling three projects. The 'Lombok' project, dealing with lead pollution near a zinc- and lead fabric, started with contacts between WPO members and a neighbourhood committee in Utrecht. The 'Ede' project, dealing with waste discharges in a forest area ended up at the WPO via an environmental action group. The third project, 'Rijnmond', dealt with the working conditions in a chemical factory in Southern Holland. Contact between a group of organized workers and the WPO was established through the BWA. Although the projects did serve societal needs, the projects were started more as a cooperation than as an answer to a request.<sup>63</sup> This may have been caused by the fact that the model of a science shop was a new phenomenon at that time: many client groups did not know about the possibilities for science shop research yet.

#### Biology shop

The first annual report of the Utrecht biology shop gives some insight in the way requests were handled at shops with more structural procedures. Many of the requests in this first year of the Utrecht biology shop were sent in by workgroups occupied with environmental issues or groups that were centred around a certain region. The requests often emanated from worries about the environmental impact of certain materials or actions.<sup>64</sup> However, the biology shop, in its first year, had to actively look for clients with questions. The inventory group of the biology shop, as was mentioned in the first chapter, tried to acquire clients by sending out a questionnaire. When groups did not reply, an additional phone call was made. Initially, neighbourhood committees and

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<sup>63</sup> Werkgroep Projekt Onderwijs, 'Chemiewinkel: onze klanten', *WPO-Krant*, no. 3 (April 1974), 8-10.

<sup>64</sup> Biologiewinkel Utrecht, *Jaarverslag 1978* (Utrecht 1979), 14-15.

environmental groups were approached. Other groups that were approached were women's groups and action groups on nuclear energy.<sup>65</sup>

Although science shops were principally established to fulfil an existing demand of any client that met the criteria, there were predetermined ideas on the kind of research and subjects to be handled in the science shops. At the Utrecht biology shop, the initial lack of interest in the shop led to an evaluation of why this was the case. Possible reasons mentioned were unfamiliarity with the biology shop, absence of any biology-related questions at the approached groups, a lack of understanding about what type of questions could be submitted to the biology shop and 'disappearance' of sent letters in bureaucracy.<sup>66</sup> The lack of publicity was caught up by an active, but not optimally coordinated, publicity programme through prints, flyers and a newspaper for client groups.<sup>67</sup>

#### Humanities shop

Established several year later, the Utrecht humanities shop did not have the same problem as the biology shop regarding the acquisition of research projects. Although the shop also gained attention through advertisements and press publications, an important way of recruiting clients was through informal contacts between client groups and science shop workers. Furthermore, client groups often found their way to the science shop by word of mouth.<sup>68</sup>

The humanities shop showed a decline in questions after the first two years of its existence. While both in 1981 and 1982 more than 50 requests were handled, the following years saw the number of requests drop to below 30 a year.<sup>69</sup> Although this could indicate a decline of interest in the humanities shop, it should be mentioned that in the first two years of the shop, there were client groups that seized the opportunity of having 'their' research conducted by sending multiple requests to the humanities shop in the first years. An example of one of the first clients was the solidarity movement against the South African apartheid regime, which requested research on five topics, such as Dutch politics regarding South Africa or the reasons why apartheid ideology was successful. Another group that sent multiple questions to the humanities shop was a workgroup on the viability of old neighbourhoods in Utrecht, which requested literature research of various buildings.<sup>70</sup> Although the number of submitted questions was higher in the first year, there were also more questions that turned out not to be suitable for a science shop project. Approximately half of the

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<sup>65</sup> Ibidem, 12-13.

<sup>66</sup> Biologiewinkel Utrecht, *Jaarverslag 1978*, 13.

<sup>67</sup> H. Severiens, S. Wartena, 'Voorlichting door wetenschapswinkels.', in: F. Pennings, J. Weerdenburg, J. (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 117-124, 118.

<sup>68</sup> Letterenwinkel Rijksuniversiteit Utrecht, *Verslag periode april 1983 – december 1984* (Utrecht 1985), 6.

<sup>69</sup> Ibidem, 3.

<sup>70</sup> Ibidem, appendix 1.

questions submitted before the end of 1981 were either withdrawn, rejected, unplaceable or forwarded to another institute, whereas the majority of questions submitted in 1983 and 1984 could be turned into a science shop project.<sup>71</sup>

There were other factors than the question itself that could lead to a project being unfit for science shop research. In an annual report of the humanities shop it was stated that one of the problems they encountered was that scientific staff typically conducted research within big projects, causing the science shop questions to stay outside of the university curriculum.<sup>72</sup> This problem indicates that it was easier for science shops to provide action groups with science than to translate social needs into the university's program.

#### Science shop of the University of Amsterdam

The Amsterdam science shop had set up a fixed procedure to deal with the requests that came in. An inventory committee checked whether the question met the science shop criteria. If the answer was positive, an advertisement was placed in the university's student magazine. Both students and researchers could react. The research committee then took over the question for the mediation work. In the mediation phase, this committee looked out for a researcher who could conduct the research and provided the client with information about the research that had already been done. After this, a meeting between the researcher and the (representative of the) client group took place, in which the agreements were noted down. Eventually, if still necessary, the research was conducted. Within the research period, the researcher and client were supposed to stay in touch. After the research was done, a (public) presentation and an evaluation closed the process.<sup>73</sup>

It turned out that in practice science shop mediation was more difficult than the description of the procedure shows. There could be a long waiting list, finding a researcher could take a while and when the research finally took place, the researchers' tendency to modify the original question could require further mediation.<sup>74</sup>

#### Handling criteria

At the Utrecht biology shop, there were discussions about the grounds on which a request was rejected. It appears that the criteria were important, but not handled as strict as they were written down. In some cases the criteria were clear enough. For example, a question by someone who wanted to know how to make agriculture in a certain area sustainable, both in economic and environmental terms, was rejected. Although the question itself appeared to be suitable for the

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<sup>71</sup> Ibidem, 3-4, appendix 1.

<sup>72</sup> Ibidem, 4.

<sup>73</sup> M. Kuys, 'De werkwijze van de Amsterdamse wetenschapswinkel', *De Wetenschapswinkel*, vol. 1, no. 0 (July 1978), 20.

<sup>74</sup> F. Pennings, F., 'Het deurtje in de toren. Inleiding op de bundel', in: F. Pennings, J. Weerdenburg, *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 13-25, 18.

science shop, the inquirer was employed at the State Forestry. During a meeting of the biology shop, it was concluded that the financially healthy State Forestry should be able to conduct the research with its own means and that the shop would not get involved in the research until further notice.<sup>75</sup> In other cases, the criteria were not applied so strictly. An Utrecht neighbourhood committee came up with a question on how to beat the rat plague in their district. According to the biology shop, questions of this kind were actually not included in their tasks as they did not help with their goal of making scientific research more accessible to target groups. Although it was stated that scientific research had not played a role in handling the question, the gained experience and good contacts with the particular committee were mentioned as benefits of this project.<sup>76</sup>

This loose way of dealing of criteria seems to be a trend that continued in the first ten years of the science shops. Weerdenburg described various problems with the criteria. The first criterion, which stated that the client should not have the means to conduct the research, was ambiguous. The trade union was an important client of the science shop – it occupied a quarter of the council seats of the Amsterdam science shop – but there was discussion about the extent to which it had sufficient means to conduct research by itself. A possible solution to only conduct research for subgroups of the *Federatie Nederlandse Vakbeweging*, Federation of the Dutch Labour Movement, FNV), but not for the FNV itself was considered controversial. Furthermore, the practical implementation of the criterion was difficult: how to decide or even make sure whether an institution had enough financial strength to conduct research by itself or not?<sup>77</sup> The second criterion, that the client should be non-profit, was easier to maintain, but had to be weakened or bypassed in order to be able to help certain groups, such as small farmers and socially and environmentally friendly businesses. The third criterion, which stated that the outcomes of the research should be useful for a social struggle, was the least problematic one: although requests from action groups were more likely to meet this criterion, it did not exclude individual clients in principle. After operating for several years, many shops had built a steady client base by intuitively deciding which clients could be served, without paying much attention to their criteria.<sup>78</sup> By the end of the 1980s, the financial situation of the client was generally considered to be less important than the (social) goal of the research and whether the question could lead to an interesting topic for researchers and students.<sup>79</sup>

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<sup>75</sup> Ibidem, 21-22.

<sup>76</sup> Ibidem, 21.

<sup>77</sup> J. Weerdenburg, 'Criteria... of geen criteria?', in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 129-135, 132-133.

<sup>78</sup> Ibidem, 133-134.

<sup>79</sup> Farkas, 66-67.

## Role of the science shop

The largest part of the second edition of the science shop magazine, published one year after the official opening in Amsterdam, was used to show some examples of typical science shop research projects. It was mentioned that not every project ran as smoothly as the ones described. In the first year, 350 questions had been submitted.<sup>80</sup> Questions were submitted on noise pollution, youth unemployment, radioactivity and nuclear energy, environment, traffic and occupational health.<sup>81</sup> In one of the featured projects, the role of the science shop was that of a kind of arbiter within a labour conflict. A printing office employee suffered from physical symptoms after a new technique with polymer had been introduced. These complaints made him refuse to stay working at the same department. However, both the company association and the company doctor did not acknowledge his physical complaints, which impacted the amount of his unemployment benefits.<sup>82</sup>

The report on the project in the magazine of the science shop provides an informative insight in the practice of the science shop. The project started with literature research and a visit to the factory, where the researchers concluded that the precautions regarding the use of polymer were insufficient. Furthermore, the existing report on skin irritations caused by polymer was rejected, since, according to the researchers, essential matters of the research had been cut out. A new literature study was carried out, confirming the relationship between the physical symptoms of the employee and the material used in the factory. Although the science shop research was not met with enthusiasm by the factory, the hygiene procedures were changed and the employee was vindicated.<sup>83</sup>

A project that gained considerable attention for the Utrecht chemistry shop took place in 1980. The research, requested by concerned residents, revealed the presence of toxins in the soil of the Griftpark, a public park. Shortly after chemistry shop officers had taken samples of the soil, the park was closed down. The chemistry shop had a typical role of confirming suspicions of local residents, caused by skin irritations and fuelled by a newspaper report about a printing office that had been discharging toluene at the ground of the park for twenty years.<sup>84</sup> One of the science shop officers referred to the park project as a good example of what distinguished the chemistry shop from other projects: an approach that aimed for research in participation *with* client groups, rather

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<sup>80</sup> 'Over de toonbank', *De Wetenschapswinkel*, vol. 1, no. 1 (March 1979), 3.

<sup>81</sup> 'Spreiding van kennis door wetenschapswinkel', *De Waarheid* (22-3-1979), <http://resolver.kb.nl/resolve?urn=ddd:010376886:mpeg21:a0073>, consulted 20-3-2017.

<sup>82</sup> P. van Broekhuizen, 'Een nieuw procedé voor het drukken van kranten', *De Wetenschapswinkel*, vol. 1, no. 1 (March 1979), 4-5, 4.

<sup>83</sup> *Ibidem*, 4-5.

<sup>84</sup> W. de Bruin, 'Gifcomité over sluiting Utrechts Griftpark: "Gemeente holt voortdurend achter de feiten aan"', *De Waarheid* (23-8-1980), <http://resolver.kb.nl/resolve?urn=ddd:010985000:mpeg21:a0121>, consulted 10-3-2017.

than research *for* client groups. This was manifested in the fact that the chemistry shop participated in meetings of the neighbourhood committee or meetings between the local residents and governmental institutions and wrote pieces for the newspaper.

Contact with the client group was mentioned as a challenge for the chemistry shop: according to the personnel, research projects in the chemistry shop could often lead to scientific discussions between experts. These discussions were hard to understand for the client groups that caused them in the first place.<sup>85</sup> This was the case in a project in Rotterdam, in which the Utrecht chemistry shop participated with a neighbourhood committee. While the committee argued for a long rather than a short railway tunnel under the Maas river – to reduce noise pollution, among other reasons – the contribution of experts shifted the focus of the action group. The chemistry shop workers were concerned about the possible risks of transporting hazardous substances through the tunnel and ultimately displaced the original purpose of the action group.<sup>86</sup>

Both in the case of the polymer research at the Amsterdam science shop and in the case of the Utrecht chemistry shop research on park pollution, the science shops served to scientifically ‘prove’ a problem that had been already identified by the requesting party. The client group met obstacles – the direction of a printing office that is reluctant to revise its working procedures, or a municipality that has not conducted research on the possible pollution of a park – and approached the science shop, hoping that they will confirm and recognize their problem. In this matter, science shops could help with, as Alan Irwin describes, “scientific authentication of a problem rather than a ‘curiosity-driven’ information request.”<sup>87</sup> This touches upon the question how to assess the scientific value of the science shops: when a group approaches the science shop for such a ‘scientific authentication’, the research either legitimates what the group already suspects to be true – which makes the research “unilluminating” or it might contradict what they think to be true. In the latter case, the result is unlikely to become widely spread and might even be suppressed.<sup>88</sup>

A case study of a science shop project with less satisfying results can be found in a 1981 report on the composition of the emissions of Abbel, an ironworks factory and the effects on neighbours and the environment. The research was conducted as a cooperation between the chemistry shop and the biology shop in Utrecht, both represented by two volunteers. A neighbourhood committee called *Soestdijk geen stankwijk* (which can be translated as ‘Soestdijk no stench district’), established for this occasion, requested the research. The research mainly served as

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<sup>85</sup> ‘Chemiewinkel Utrecht timmert al tien jaar aan de weg’, *De Waarheid* (23-11-1983), <http://resolver.kb.nl/resolve?urn=ddd:010378187:mpeg21:a0039>, consulted 10-3-2017.

<sup>86</sup> *Ibidem*, 67-68.

<sup>87</sup> A. Irwin, *Citizen science: a study of people, expertise, and sustainable development* (London – New York 2002), 159.

<sup>88</sup> *Ibidem*, 160.

inventory to gather what was already known. The report was probably not satisfying for the neighbourhood committee, since the main conclusion was that there was not enough data to assess the possible harmfulness of Abbel, the ironworks company. In the report, it was recommended to get more specific data of Abbel, to have measurements done through governmental research and to discover what the exact plans of the government were with regards to restructuring Dutch ironworks.<sup>89</sup>

In the report, emission data were derived from general data about cupola furnaces combined with data about the amount of time each week spent melting irons and the melting capacity. Because of the lack of data, the science shops were unable to give a definitive conclusion about the emission of the ironworks company. The report does mention that the municipality made a promise to acquire the data. This could indicate that the science shops were able to influence or stimulate research, although the report does not mention whether it was the science shop or the action group that convinced the municipality to acquire the data. It was stated in the report that the science shops for biology and chemistry could help set up a survey on complaints about emissions or critically watch governmental research on the matter.<sup>90</sup> The project is another example of research in which the science shop served as a kind of arbiter, deciding whether the complaints of local residents were justified or not. Although science shops typically chose the side of the action group, this project suggests that science shops were certainly careful in their research: they did not jump to conclusions without the necessary data.

Not every science shop project was based on a conflict between two parties that required a quick solution, like the ones mentioned above. One example of this was research requested by a women's movement of the trade union. The question, why the rate of sick leave of female workers was relatively high, went to the Amsterdam science shop. After literature study, the problem was translated into a scientific research question. Although the research was supposed useful for the trade union, it was not expected that there immediately would be a practical application for the results.<sup>91</sup> Another example is the role of the science shop in a 1979 exposition about the 90<sup>th</sup> anniversary of an industrial labour union, which was partly created by history students.<sup>92</sup>

## Criticism

While science shops could be a useful partner for action groups, their approach also evoked criticism, mainly within the faculties where they operated. One line of criticism was a discomfort with the

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<sup>89</sup> Chemiewinkel, Biologiewinkel Utrecht, *Samenstelling van de uitstoot van een ijzergieterij en de effecten ervan op mens en milieu* (Utrecht 1981), 3.

<sup>90</sup> *Ibidem*, 4.

<sup>91</sup> R. Kwakkenstein, 'Is vrouw-zijn nu echt zo ongezond?', *De Wetenschapswinkel*, vol. 1, no. 1 (March 1979), 8-9, 8.

<sup>92</sup> N. Wisman, 'Tentoonstelling 90 jaar strijd', *De Wetenschapswinkel*, vol. 1, no. 2 (August 1979), 8-9, 8.



explicit political stance of some shops. As discussed in the previous chapter, this was the reason why the WPO, predecessor of the Utrecht chemistry shop, initially clashed with the sub-faculty of chemistry. In the spring of 1974, the WPO was awaiting an evaluation by the chemistry faculty council. The sub-faculty was hesitant to support the WPO because of the WPO's political stance and the scientific quality of its chemistry shop research. Anticipating a negative assessment of their activities, the WPO spread a pamphlet with a demand for better facilities and an expansion of personnel. When surveyed, sixty percent of the students and staff at the chemistry faculty supported these demands of the WPO, that presented this outcome as a sign that a majority of the students and staff stood behind the group. The fact that this majority was quite small could indicate that the WPO was met with much opposition from within the faculty, although it should be noted that in this particular survey a vote against particular demands of the WPO was not necessarily a vote against the WPO itself.<sup>93</sup>

More substantive criticism came from two staff members of the University of Amsterdam, Duco Hellema of the Sociology department and Meindert Fennema of the Political Science department. Shortly after the Amsterdam shop had opened its doors, they criticized the Amsterdam science shop's underlying idea of 'progressive science'. The discussion was initiated in a student magazine and then picked up by communist newspaper *De Waarheid*. Hellema and Fennema recognized that science shops could be useful in an educational function for those who wanted to get in touch with certain research projects and were unknown with the university's "opaque ways."<sup>94</sup> However, they stated that it would be dangerous to focus on the shops in the defence of science. This defence of science referred to restructuring and budget cuts that took place at universities, and – according to the authors – led to centralized and business oriented science. They stated that the battle against this direction should not be waged with an oversimplified, populist notion of socially oriented science, replacing the force of business with the force of progressive action groups.<sup>95</sup> Furthermore, they argued against the idea that fundamental research was in the hands of big corporations. There was a task to defend existing research programmes without immediate utility, that were unsuited to fit the popularized notion of socially relevant science as present in the science shops.<sup>96</sup> They argued that students and researchers should decide their research agenda for themselves and not have this dictated by external groups.

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<sup>93</sup> Werkgroep Projektonderwijs, '60% staat achter WPO', *WPO-Krant*, no. 3 (April 1974), 4-5, 5.

<sup>94</sup> D. Hellema, M. Fennema, 'Verdediging van het onderzoek', *Student*, no. 143, vol. 14, no. 8 (April 1978), 4-5, 4.

<sup>95</sup> *Ibidem*, 4.

<sup>96</sup> 'Progressief onderzoek niet beperkt tot Wetenschapswinkel', *De Waarheid* (25-4-1978), <http://resolver.kb.nl/resolve?urn=ddd:010376529:mpeg21:a0106>, consulted 17-3-2017.

Another point of criticism, which resonates with Irwin's discussion on the scientific value of science shop research, was that the shop valued organizational criteria higher than criteria about the actual content of research. As is visible in some of the examples of questions submitted to the science shops, a social, 'on-demand' approach of science did not necessarily lead to ground-breaking research. Health questions, like the ones about the harmfulness of materials used at a printing office or the presence of toxins in an area, often had a simple and straight-forward answer.

The criticism was mainly countered by pointing out the demand for research at the science shops and the inspiring function of the shops. A student associated with the science shop reacted against Hellema's and Fennema's criticism by stating that the legitimacy of existing research was not being questioned. He pointed out how the science shops made students enthusiastic about science, which would influence the democratization of science. He also expressed his displeasure with the fact that staff members criticized a student initiative, rather than looking at their own role in defending and democratizing science.

Another student pointed out that the 1969 wave of democratization had affected education and administration of the university, but not the research program. He saw the science shop as a means for students and progressive staff members to change the power relations within the university and move the direction of research into a more progressive direction.<sup>97</sup> It is notable that the science shop was not only being defended for its intrinsic value, but even more for its additional advantages of fostering enthusiasm for science and influencing the research policy into a more social direction – the 'second goal' of science shops.

Another route of – internal - criticism on science shops can be found in the 1983 report of the Utrecht chemistry shop, celebrating its tenth anniversary. The chemistry shop had strong ideological roots in the WPO. A point of criticism was that the science shop was losing its touch with the ideals of the student democratization movement, with its critique on both content and structure of the university and their wish to radically break with 'bourgeois' science. In this line of criticism, the science shops got too much embedded within the establishment of the university, weakening a true 'revolutionary battle'.<sup>98</sup>

## Conclusion

Although science shops were established as a way to provide groups outside of the university with the information they needed, this task proved to be more complex than a simple matter of supply and demand. Science shops actively had to reach out to the groups they had in mind to support.

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<sup>97</sup> 'Kritiek op Wetenschapswinkel roept reacties op', *De Waarheid* (3-5-1978), <http://resolver.kb.nl/resolve?urn=ddd:010376536:mpeg21:a0107>, consulted 20-3-2017.

<sup>98</sup> R. Bökkering, 'Wetenschapswinkels en het vraagstuk van de tegenmacht', *Chemiewinkel Utrecht, Tien jaar Chemiewinkel: aktie, reaktie* (Utrecht 1983), 10-16, 10.

Furthermore, the initial criteria proved to be too strict to use when trying to build up a customer base or supporting financially healthy social groups.

When a project was taken up by a science shop, the scientific value of the project was not always evident: in many cases, the shop served as an arbiter aiming at confirming the findings of an action group. This influenced the way science shops were perceived within the university: the scientific value and the political stances of the shops invoked criticism. However, criticism was not limited to external parties. At the chemistry shop in Utrecht, the integration within the establishment of the university and the gap between researchers and the client groups were criticized.

## Chapter III: Challenges for science shops

### Introduction

As discussed in previous chapters, science shops generally had two goals. Not only did they aim at providing a service for disadvantaged groups by doing research on questions that could help those groups in their battle for improvement of their social position, they also had the goal of changing the general research programme of the university in a more social direction. In this chapter, the influence of science shops on scientific research will be discussed. Firstly through their own evaluations of the continued effect of the science shop projects. Secondly, the university's criticism and evaluations of the science shop will be examined: how did the universities judge the practices of the science shops and how was this translated in their policies? Following budget cuts and a decrease of support in the 1980s, several science shops were closing down in the 1990s. Especially in this period, in which science shops were confronted with a decrease in support and funding and in which they tried to restructure their practices to keep operating, it is of interest to see how the goal to influence the university's curriculum was dealt with and evaluated.

To answer this question, I will take a look at a number of different reports, articles and publications, written by members of the science shop community. I will show that science shops were not undividedly successful in their self-imposed task to change the university's curriculum and research agenda in a more social direction.

### Decline and changes in the science shops

#### Difficulties for science shops

The increasingly tough circumstances for doing socially oriented research cannot unambiguously be seen as the consequence of negative judgements by administrative or faculty layers from within the university. It should also be viewed in the light of a changing political situation in the Netherlands, in which the social democratic dominance of the 1970s ended. The first center-right-wing Lubbers cabinet had been installed by the end of 1982 and pushed for deregulation, privatization and a strong reliance on market forces.<sup>99</sup> Financial cuts were made in wages, unemployment benefits, health care, culture and education. Universities had been ordered to take substantial austerity measures already before this cabinet was installed, which practically meant that thousands of jobs at Dutch universities had to be cut. According to Hellema, these developments contributed to a shifting university climate, in which the criticism of the 1960s and 1970s fell quiet and made way for a more competitive atmosphere. Hellema describes the 'conservative counter-forces' that reversed part of the critical university reforms in the 1970s, following the WUB. By the end of the 1970s, university staff became

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<sup>99</sup> D. Hellema, *Nederland en de jaren zeventig* (Utrecht 2017), 261-262; 272-273.

increasingly displeased with the power of student organizations and left-wing colleagues, resulting in a magazine called *Wetenschap en Democratie* ('Science and Democracy'). In this magazine, the conflicts and problems surrounding the WUB were described by university staff who were critical of the increased power of students.<sup>100</sup>

In the late 1980s, governmental influence on universities changed into what Verweel calls "guidance from a distance", which gave universities more direct power over their budgets.<sup>101</sup> Universities had to be market oriented, resulting for example in conditional financing of research.<sup>102</sup> The competitiveness was not limited to institutions: the generation of students following the generation of student activists was, in general, more competitive in studying and less focused on social relevance.<sup>103</sup>

In line with his criticism during the early phase of the science shops, Hellema, in his account of the 1970s, contrasts socially relevant activities not only to fundamental research, but also to objectivity and scientific quality.<sup>104</sup> Hellema opposes the socially oriented research that emerged in the 1970s to the competitive and marketing-oriented approach of the universities of the 1980s, contrasting socially relevant research with scientific values such as objectivity and fundamental research. In his narrative, the call for university reforms and critical education grows more silent from the end of the 1970s onwards, although he states that this did not mean that the changes from the 1970s had been reversed.<sup>105</sup> In Baneke's account, there is indeed a change in ideology between the 1970s and the 1980s. However, he states that the movements of social relevance and commercialization of university research were actually part of the same process. In both cases, universities tried to strengthen their connection to society, either through socially relevant research in the 1970s or through new forms of financing and cooperation with commercial parties in the 1980s.<sup>106</sup>

It is not hard to imagine what the position of the science shops was in this climate. In many ways, they were not compatible with the idea of market oriented research. The shops clearly belonged to the democratization movement and were affected by the competitive environment as sketched by Hellema. A 1986 newspaper article on the problems of the science shops of the Free University in Amsterdam illustrates this well: students were less inclined to work for the shop, since the new study structure left less room for extracurricular activities. Furthermore, students preferred

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<sup>100</sup> Hellema, 211.

<sup>101</sup> Wachelder, 256; P. Verweel, 'There is no business, like show business', in: J. Weerdenburg, F. Pennings, *Wetenschapswinkels in de jaren negentig* (Utrecht 1991), 115-126, 117.

<sup>102</sup> Hellema, 270-271.

<sup>103</sup> *Ibidem*, 211.

<sup>104</sup> *Ibidem*, 43.

<sup>105</sup> *Ibidem*, 212.

<sup>106</sup> Baneke, 52.

to cooperate with corporate parties in their research projects for reasons of employment perspective.<sup>107</sup> However, most of the shops, although rooted in the democratization movement, were established after the peak of the democratization movement. Therefore, the shops are slightly deviant from Hellema's narrative in which the critical student movement lost power in the early 1980s.<sup>108</sup> The establishment of the shops shows that not all democratization efforts were reversed from the late 1970s on. The fact that many shops opened in the 1980s confirm Baneke's notion that social relevance, although in different forms, was still an important theme in the organization of universities. In the case of the science shops, the consolidation of the university's reorganization in the 1980s – or 'reversal' of the democratization movement of the 1970s – happened in the 1990s. The culmination of this can be seen in the introduction of the *Wet Modernisering Universiteitsbestuur* (Bill for Modernization of the University Administration, WUB) of 1996. After this bill, universities had to be organized as companies, without for example university councils with decisive power for student representatives.

The various reasons for closing the shops show how the ideas of the university's governing bodies regarding the spread and accessibility of knowledge changed since the shops had become small but fully fledged university institutions. In the case of the closure of the Leiden science shop in 1998, the shop was regarded as a well-functioning unit and the university's chancellor attributed the decision to close down the shop to financial cuts.<sup>109</sup> Closing down the shop would save half a million Dutch guilders.<sup>110</sup> Another argument for closing down the shop was that the shop did not connect to the core activities of the university: education and research. One science shop worker defended the science shop with the claim that it was certainly compatible with the university's core activities, since the science shops generated new research, made the university accessible and attracted new students.<sup>111</sup> However, the level of internationalization of the university was another factor that influenced the feasibility of keeping a science shop open. In the case of Leiden in the 1990s, the university increasingly chose to present itself as a competitive international player, among the ranks of famous foreign universities. Science shops typically served local groups and were therefore not directly contributing to the university's international agenda.<sup>112</sup>

The silence in which the Amsterdam science shop closed in the course of the 1990s formed a big contrast with its prominent opening some two decades earlier. Although the science shop had

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<sup>107</sup> 'Wetenschapswinkels moeten misschien sluiten', *NRC Handelsblad* (24-6-1986), <http://resolver.kb.nl/resolve?urn=KBNRC01:000029362:mpeg21:a0020>, consulted 26-11-2017.

<sup>108</sup> Hellema, 212.

<sup>109</sup> Wachelder, 255.

<sup>110</sup> M. Traa, 'Wetenschapswinkel', *Trouw* (10-4-1996), <http://academic.lexisnexis.eu/??lni=48MV-VPX0-0150-Y27M&csi=263237&oc=00240&perma=true>, consulted 17-4-2017.

<sup>111</sup> Ibidem.

<sup>112</sup> Wachelder, 266.

been one of the largest science shops in the Netherlands, the Amsterdam science shop, just like science shops at other universities, faced financial cutbacks and the changing political climate.

#### Science shops reacting to changing circumstances

There were efforts at science shops to adjust the shops to new circumstances. Joseph Wachelder, who was involved with the science shop of Maastricht University between 1988 and 1997, described how science shops reacted to changes in divergent ways and how this reflected divergent views on the relation between science and democracy.<sup>113</sup> One of the main reasons he mentioned for the changes in science shops was the fact that the left-wing political climate from the 1960s and 1970s was not as strongly present within the university anymore. According to Wachelder, this caused science shops to leave their goal of internal democratization of university research behind, reinforced by the insight that science shops had not reached this goal.<sup>114</sup> He stated that the goal of democratization had been moving to the background. Wachelder examined the various routes taken by the adjusting science shops during this period and what this tells us about their views on democratizing science. The article is both retrospective on the changing role of science shops, as well as relevant for the period in which the article was published, 2003.

Science shops had tried to adapt to changing circumstances by altering their modus operandi. According to Wachelder, four models of changing science shops can be discerned. The first model is a nonprofit service provided by students. This was for example the case in Eindhoven and the chemistry and physics shop in Utrecht. This science shop refused to become a part of the university structure and therefore remained a free service provided by students. Although this set-up made the shop more or less independent from the whims of university boards, the research conducted there was typically not embedded within the study curriculum, which made it harder to gather enough students and caused constraints in terms of time.<sup>115</sup> The second model, the science shop as a specialized-, market-oriented research centre and consultancy, was adopted by the Amsterdam science shop in the 1990s. This was mainly caused by factors like the growth and professionalization of (traditional) client groups and the increased complexity of the requests. In a third model, the science shop was transformed into a university public relations tool, meant for public outreach. This was the case in Maastricht, Nijmegen and Tilburg, where student research for the shop was accredited in the study programme and where the criteria were softened in order to reach a broader client group. The last model Wachelder discussed was the science shop as a professional broker mediating between science and society. This was the case in the first continuation of the central science shop in Amsterdam: the goals were to become a profitable

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<sup>113</sup> Ibidem.

<sup>114</sup> Ibidem, 253-254.

<sup>115</sup> Ibidem, 258.

institute, to specialize in a range of topics, to loosen ties with the university and to operate as a mediator between research and clients.<sup>116</sup>

## Amsterdam

Efforts were made to adjust the Amsterdam science shop to the changing environment of Dutch universities, but the shop eventually closed down. In the course of the 1990s, the Amsterdam science shop merged with the Agency for Advancing Social Research. The agency started to concentrate on fundamental research and allied itself with other, commercial, university research agencies. The science shop in its original form disappeared gradually after an increasing number of shop employees left for other positions without being replaced. The fact that the Amsterdam science shop was slowly disappearing did not receive much attention.<sup>117</sup> This reveals that the political climate had indeed changed at the disadvantage of the science shops in their original form.

The transformation of the Amsterdam science shop into a more specialized institution started in 1993.<sup>118</sup> The shop started to specialize in the themes of 'backlog policy' (mainly targeting unemployed people, women, migrants and suburban residents) and urban development. Instead of a mediator between questions from client groups and students or academic staff, the shop started to present itself differently from 1994 on. In their newsletter it was stated that the science shop wanted to contribute in solving concrete social problems in Amsterdam through coordinating and setting up research, giving advice and organizing workshops, discussions and forums. Furthermore, a selection of requests that were handled by the science shop was made: questions (by social organizations) related to the two main themes of their shop were prioritized, with limited room for other questions.<sup>119</sup> The shop still aimed for non-commercial questions.

Specialization of science shops did not only happen at the shop of the University of Amsterdam. A science shop employee of the Amsterdam Free University commented on science shop specialization and asked whether this was the right choice in times of financial cutbacks.<sup>120</sup> She mentioned various reasons for the tendency of specialization and the corresponding decrease of encyclopaedic questions reaching the science shops. The main reasons for this were the fact that the Dutch government was more active in stimulating science education and that the action groups that were typical clients of science shop opened their own information centres. These institutes changed the task of the science shops and took over some of the questions that would normally end up at a

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<sup>116</sup> Ibidem, 259-261.

<sup>117</sup> Ibidem, 260-261.

<sup>118</sup> Wetenschapswinkel Amsterdam, *Nieuwsbrief*, vol. 10, no. 3 (March 1994).

<sup>119</sup> Ibidem; Wetenschapswinkel Amsterdam, *Nieuwsbrief*, vol. 11, no. 1 (October 1994), 8.

<sup>120</sup> J. de Bruin, 'Hoe klantgericht is langerlopend onderzoek?', in: J. Weerdenburg, F. Pennings, *Wetenschapswinkels in de jaren negentig* (Utrecht 1991), 159-167, 159.



shop.<sup>121</sup> The danger she saw in the focus on long-term research and specialization of science shops was the fact that not every client group question could be expected to give rise to long-term research. As this should not be a criterion in the acceptance or rejection of questions, she feared that valuable questions would be overlooked in the new science shop model. She therefore recommended that isolated questions should remain welcome in science shops.<sup>122</sup>

## Utrecht

In Utrecht, science shops had been operating longer than in Amsterdam. Various factors contributed to the differences in longevity of the science shops of Utrecht University and the University of Amsterdam. Perhaps the decentral set-up worked in favour of the Utrecht science shops and made it easier to keep the various small shops running with fewer resources. Another difference was that, unlike Amsterdam, there was only one university in Utrecht, so potential client groups had only one institution to go to.

First in 2008, the science shops were transformed into a different institution, the *Kennispunten* ('knowledge desks'). The science shops for biology, physics and chemistry were merged into one knowledge transfer desks, next to three separate knowledge transfer desks for the faculty of humanities, the faculty of social sciences and the faculty of law, governance and economics. Apart from the name change, the science shop was now explicitly including small- and medium-sized businesses in its scope.<sup>123</sup> Serving smaller commercial clients was not new: in 2006, Caspar de Bok, head of the biology shop of Utrecht University mentioned that they occasionally had been doing projects for commercial clients since approximately five years. There were certain conditions for commercial clients: the question should be of interest for a larger group than the clients' company and the results were to be made public.<sup>124</sup> By the turn of the century, most science shops in Utrecht maintained this criterion. Only the chemistry shop and the physics shop in Utrecht remained strict in providing a free service. They accepted every question, even when the questions came from individuals, which was mostly the case.<sup>125</sup> This approach made it harder for the shops to be affiliated with the research agenda or study curriculum, since the projects were often too far removed from the scientific expertise at the faculty.<sup>126</sup>

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<sup>121</sup> Ibidem, 160.

<sup>122</sup> Ibidem, 162.

<sup>123</sup> Living Knowledge: The International Science Shop Network, *Newsletter January 2008* (January 2008), [http://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Newsletter\\_Archiv/26-LK-newsletter-January-08.pdf](http://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Newsletter_Archiv/26-LK-newsletter-January-08.pdf), consulted 7-6-2017.

<sup>124</sup> I. Weel, 'Wetenschapswinkel is brug tussen burger en universiteit', *Trouw* (10-4-2006), <https://www.trouw.nl/home/wetenschapswinkel-is-brug-tussen-burger-en-universiteit~a693f6c5/>, consulted 7-6-2017.

<sup>125</sup> C. de Bok, *Wetenschappelijke dienstverlening in de etalage. Onderzoek naar de kwaliteit en het perspectief van de wetenschapswinkels van de Universiteit Utrecht* (Utrecht 2003), 37-38.

<sup>126</sup> Ibidem, 37.

The changes in criteria can be traced back to a report written by De Bok In 2003, five years before the transformation of the shops into the knowledge transfer desks. In the report, an evaluation of the quality and perspective of the science shops at Utrecht University, it was concluded that the science shops were functioning well, but needed more visibility and an expansion of their tasks.<sup>127</sup>

For this evaluation, not only science shop employees, but also external contacts of the shops were questioned about the functioning of the shops. Two of the groups that were questioned were the scientific staff members that had supervised science shop projects and the faculty policy officers. In their perception, the science shop operated more or less as an entity separated from the faculties they were affiliated with. They stated that the science shop was not well embedded within the faculties and that the distance to the study curriculum was often big. Furthermore, they claimed that the research groups at faculties were focusing on their regular research agenda too much, with too little regard for the social application of their work. An image problem of the science shops was also mentioned by both groups: they identified an outdated and negative view of the science shops at their faculties.<sup>128</sup> The suggestion that science shops provided their services for small- and medium-sized businesses was made by the responding Utrecht University central policy officers. Besides making the scope of the science shops broader than the traditional client groups, the policy officers stated that the shops could have a wider function of teaching scientists to translate their knowledge for social application.<sup>129</sup>

#### Changes in possibilities for socially oriented research

The most important external developments that affected the science shops were a changing political climate and financial cutbacks. The professionalization of traditional client groups was another factor that forced science shops to reinvent themselves. The transformation of the Amsterdam science shop to a more specialized institute that provided services for paying non-profit organizations and eventually even commercial organizations was partly caused by the fact that many groups that were formerly science shop clients, had professionalized and were able to pay their own experts. Questions that could not be answered by those experts, tended to be too complex for students as well, which was why the traditional science shop approach did not connect with the activist groups they used to cater for anymore.<sup>130</sup>

The question whether the changes and the closing down of science shops indeed marked a big change in the possibilities to do socially oriented research largely depends on the alternatives for this kind of research. If the institutions that were presented as successors to the science shops

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<sup>127</sup> Ibidem, 69.

<sup>128</sup> Ibidem, 45-46.

<sup>129</sup> Ibidem, 49.

<sup>130</sup> Wachelder, 259.

offered equal possibilities in conducting research for disadvantaged groups, closing down the science shops would mainly be an organizational procedure, not the end of a democratizing era within the university. The closing down of the science shops could even prove that they had been working as intended, if the socially oriented agenda of the science shop had indeed managed to reach the university's decision-making. It would mean that their agenda had been internalized in the university's policy. Even if client groups would not be able to directly pose their questions to a science shop, the university would be socially oriented enough to represent their questions and needs as well.

From Wachelder's article, however, two arguments against this assessments can be extracted. First of all, the fact that the groups that initially counted as 'disadvantaged groups' had transcended this categorization does not mean that there were no other groups that had a distance to scientific research and could benefit from research. Wachelder mentioned migrants, ethnic groups and political refugees as the deprived groups in Dutch society anno 2003.<sup>131</sup> Furthermore, he describes how the shop in Amsterdam eventually refused service to client groups that did not generate additional funding, after its transformation into a profit-oriented agency.<sup>132</sup> He stated that the goal of transforming science and society grew less prominent by the 1980s, when the science shops were professionalizing and institutionalized within the university. Although there were individual science shops that were maintaining the initial criteria more strictly, most were mainly mediating between client groups and students' research.<sup>133</sup> Thus, most Dutch science shops failed to adapt to the changing climate in the 1980s.<sup>134</sup>

## Evaluations of the impact of science shops on the university curriculum and research agenda

### Internal commentaries on the changing courses of science shops

The FNV, an important client of the science shop, was worried that the science shops would not manage to cause a broader change in the university's research program. In a report in 1981, they stated that they had problems with the long waiting time when working with a science shop and claimed they had better results when they worked directly with faculties. This claim is very remarkable: the FNV was very well-represented in the organizational structure of the science shop in Amsterdam, but still they claimed that cooperation with faculties, where the FNV was an external party, worked better for them. This document, with a demand to set up organizational structures for

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<sup>131</sup> Ibidem, 267.

<sup>132</sup> Ibidem, 261.

<sup>133</sup> Ibidem, 254.

<sup>134</sup> Ibidem, 257.

better cooperation, caused the University to react with plans to spend 15 percent of the budget on socially oriented research – even though the actual spending would never reach 15 percent.<sup>135</sup>

To decide how the budget for socially relevant research should be spent, the *Fonds voor Maatschappijgericht Onderzoek* (Fund for Society-Oriented Research, FMO) and its executive organ, the *Commissie voor Advies Fonds voor Maatschappijgericht Onderzoek* CAFMO (Advisory Committee for the Fund for Society-Oriented Research, CAFMO) were established. The initiative would last until 2002.<sup>136</sup> In this case, the goal of the science shop to make the university's curriculum more socially relevant was pushed forward by client group evaluations, rather than judgement from the university. According to Farkas, similar developments happened in Amsterdam with the environmental groups and third world development groups.<sup>137</sup> In the case of the FNV, it is notable that a client group's evaluation was apparently more powerful in achieving a broader 'science shop influence' on the university than the science shop itself. This was presumably because the FNV, although non-profit, was a powerful actor in the labour union movement. Other, smaller client groups would not have had the same effect on the university's policies.

The advisory committee was not the only initiative to improve the impact of science shop projects. In 1987, the *Universitair Steunpunt voor Arbeidsvraagstukken* (University Supporting point for Labour Issues, USvA) was established by the Utrecht science shops. This initiative is a good example of an effort to influence the university's research agenda into a more social direction, in this case specifically regarding labour issues. The USvA was meant to co-exist with the science shops. Their aim was to generate more research requests and better means to answer them. Moreover, the USvA had the task to build up expertise on certain research areas and stimulate more longer-lasting research than the single science shop projects did. The supporting point was established in response to certain problems faced by the science shops. Some labour issues were too complex to be researched as a science shop question and therefore remained unexplored, even when science shop personnel agreed that the problem itself was a valuable research subject.<sup>138</sup>

Stef Weijers, who worked on the USvA, stated at that time that long-term research was beneficial both for the science shops and for the client. It could revive the innovative function of the science shops. Furthermore, for client groups – in this case employee representatives – it could be more effective, since research that was future-oriented and more fundamental could reveal deeper problems before a concrete question would come up with the client.<sup>139</sup> Evaluating the project,

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<sup>135</sup> Farkas, 78.

<sup>136</sup> Farkas, 78-79.

<sup>137</sup> Farkas, 78.

<sup>138</sup> S. Weijers, 'Wetenschapswinkels in de jaren '90: te star voor vernieuwend onderzoek?', in: F. Pennings, J. Weerdenburg (eds.), *Wetenschapswinkels in de jaren negentig* (Utrecht 1991), 89-104, 89-90.

<sup>139</sup> *Ibidem*, 96.

Weijers recommended a new approach for the science shops, with an aim for specialization in certain research areas and future-oriented research. Interestingly, he also wrote that he was not convinced that the science shops could meet these demands for changes he proposed, since science shops lacked the flexibility for this change.<sup>140</sup>

### Science shop research continued in the university curriculum

The influence on the university curriculum and research agenda was discussed in various publications from the science shop or its staff. An example of this is research by science shop worker Rolf Zaal, which led to an article, co-written by Leydesdorff, published in *Science and Public Policy*. Like the 2001 SCIPAS report, Zaal and Leydesdorff acknowledged that any science shop project directly affects research and science policy in some way, since the subjects investigated in these projects were different from those that would normally appear in research. At the same time, they stated that this was “just a by-product of the service the academic community renders to the outside world” and that the effect did not involve the cognitive dynamics of science.<sup>141</sup> Zaal investigated the science shop as a policy instrument by examining the results of ten years of science shop research in Amsterdam. He looked into the question whether the science shop at the University of Amsterdam had further-reaching influence on scientific research, other than through a specific science shop project itself. A second question he asked was the role science shops played in the increase of knowledge and other ways of influencing research.<sup>142</sup> In his research, Zaal stated that influence on the scientific research programme could occur after the fulfilment of two conditions. The first condition was that the science shop had to receive projects that could be legitimized scientifically and therefore could be conducted as science shop projects. The second condition was that, when the first condition was fulfilled, the projects should bring new and interesting theoretical aspects to light that could not be answered satisfactorily within the theoretical framework of the science shop project. If this was the case and a science shop project gave rise to further research, one could speak of influence on scientific research.<sup>143</sup>

Zaal investigated 162 science shop projects. 22 were continued in further research after the project, leading to 33 scientific publications: 14 of those were directly published, 13 led to further research and 8 were directly published and also led to further research. He states that the chance of

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<sup>140</sup> Ibidem, 101-102.

<sup>141</sup> R. Zaal, L. Leydesdorff, ‘Scientific mediation. Amsterdam Science Shop and its influence on university research: the effects of ten years of dealing with non-academic questions’, *Science and Public Policy*, vol. 14, no. 6 (December 1987), 310-316, 311.

<sup>142</sup> R. Zaal, ‘Doorwerking van sociale problemen in onderzoek en wetenschap aan de Universiteit van Amsterdam. De Wetenschapswinkel als beleidsinstrument’, in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 89-96, 90.

<sup>143</sup> R. Zaal, *De Wetenschapswinkel en het Universitair Onderzoek. Een systematische evaluatie uit oogpunt van wetenschapsbeleid*. (Amsterdam 1986), 31-32.

a science shop question to be continued in further research was significantly higher when a researcher had accepted the question for scientific reasons rather than for social ones.<sup>144</sup> In Zaal's investigation on the motivation for doing science shop research, the respondents gave four main motives: feelings of engagement with the subject, didactic considerations, the fact that it became a habit at some faculties (after a while) and scientific considerations. However, only 30 of the 160 respondents mentioned scientific reasons for doing science shop projects.

The projects that were accepted for their expected scientific value were the most likely to be published and give rise to further research.<sup>145</sup> In this light, it is important to note that many of the science shop questions were of limited scientific value. However, there were different opinions the scientific value of questions that could easily be solved through routine research by students, such as taking soil samples in order to decide whether an area had been contaminated. Eventually, routine cases like this were rejected by the Amsterdam shop because they were not challenging enough for students.<sup>146</sup> In other science shops, such as the one in Groningen, it was argued that students had to master these skills anyway. The science shops were appreciated for their educational value rather than their actual contribution to the existing body of research.<sup>147</sup> To be able to influence the research agenda through further research, however, the questions often had to be reformulated. Zaal and Leydesdorff's study suggests that not many of the questions were reformulated, but if they were, they were more likely to be published and/or continued into further research.<sup>148</sup>

Although other factors than scientific relevance could play a role in the scientific reception of a science shop problem, Zaal claimed that cognitive factors were the most decisive for this, only influenced by other factors.<sup>149</sup> According to the Amsterdam respondents, a lack of connection with the existing research programme and the too applied character of the question were the most important factors why a question did not lead to further research.<sup>150</sup> An important factor in fitting a science shop project in the research programme was the reformulation of the question into something more suitable for scientific research beyond the individual case of the science shop.<sup>151</sup>

Leydesdorff concluded, after the Amsterdam science shop had been operating for ten years that, in general, science shops were important for their exemplary function and were not very strong as instruments to change science- and research policy. He stated that cooperation between groups within and outside of the university often did not lead to a coalition that was powerful enough to

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<sup>144</sup> Ibidem, 90-92.

<sup>145</sup> R. Zaal, *De Wetenschapswinkel en het Universitair Onderzoek*, 51-54.

<sup>146</sup> Wachelder, 259.

<sup>147</sup> Ibidem, 259; 264.

<sup>148</sup> Zaal, Leydesdorff, 313-314.

<sup>149</sup> Ibidem, 314.

<sup>150</sup> Ibidem, 313.

<sup>151</sup> Ibidem, 314.

influence science policy.<sup>152</sup> Zaal, in his inventory of the motives for expanding science shop questions into further research, concluded something similar: the singularity of the questions and the fact that those question often targeted short-term goals, made it challenging for scientists to reach beyond those short-term goals. An adequate ‘scientific translation’ of the questions was necessary to have them playing in a role in science policy.<sup>153</sup>

### SCIPAS Report

Fifteen years after the article by Zaal and Leydesdorff, the impact of science shops on the university curriculum was examined in a 2001 report by the SCIPAS project (Study and Conference on Improving Public Access to Science through science shops). The report painted a picture of how (international) science shops experienced the impact of their practices. Coming from the international cooperation of science shops, the SCIPAS investigation had an international scope. The organization was a result of the international following of the example of the Dutch science shop. However, by the time the report was published there were already many Dutch science shops that were either shut down or threatened with being closed.<sup>154</sup> The report was covering science shops in The Netherlands, Germany, Austria, Northern Ireland, Denmark, Israel, Romania, South Africa and the USA and was carried out through questionnaires and follow-up interviews.<sup>155</sup> In the survey conducted for the report, 30 percent of the respondents stated that science shops had had some effect on the university’s research agenda, with only 1 out of around 45 science shops claiming that the research agenda had changed a lot because of the science shops.<sup>156</sup>

In the report, one of the ways in which science shop projects could have an impact on university curricula was distinguished as *direct* impact. When a science shop question was investigated by a student, incorporating it in his or her study program, the very project itself was considered as contributing to a more socially oriented university curriculum. Various mechanisms were described, such as science shops offering students the possibility to do a shop project and work together with citizen groups as a part of an established course, or science shops taking away some of the workload of scientific staff that had goals similar to those of the science shop.<sup>157</sup> Direct impact on the research agenda or study curriculum was not self-evident at all science shops. At the science shops for economy and chemistry at the Free University, a lack of co-ordination and recognition by

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<sup>152</sup> L. Leydesdorff, ‘Het wetenschapsbeleid na tien jaar wetenschapswinkel.’, in: F. Pennings, J. Weerdenburg (ed.), *Een deurtje in de toren. Tien jaar Wetenschapswinkels* (Utrecht 1987), 85-88, 86-87.

<sup>153</sup> Zaal, Leydesdorff, 315.

<sup>154</sup> From the 1980s on, science shops were established in Germany, Denmark, France and Belgium, <http://www.livingknowledge.org/science-shops/about-science-shops>, consulted 22-5-2017.

<sup>155</sup> M. Hende, M.S. Jørgensen, *SCIPAS Report no. 6. The Impact of Science Shops on University Curricula and Research* (Utrecht 2001), 8-9.

<sup>156</sup> *Ibidem*, 35.

<sup>157</sup> *Ibidem*, 23.

the academic staff caused problems in 1986. The improvements proposed by the science shop employees were rewards for science shop projects in the form of accreditation and reservation of a part of the faculty research agenda for science shop projects. It was stated that these measures were necessary for the science shops to stay open.<sup>158</sup>

The other form of impact mentioned in the report was more indirect. It was probably closer to the goal initially expressed by the science shops: changing the university's curriculum and research programme in a more social direction. Among those types of impact were inclusion of community topics raised by science shop projects and science shop case studies in teaching activities, initiated either by science shop staff members or scientific staff. Another way in which the science shops could affect the university curriculum was through the development of courses by science shop staff or a role for science shop staff in the university's curriculum planning activities.<sup>159</sup> In addition, the science shop aimed at (permanently) influencing the university's research program. According to the SCIPAS report, this could happen when the science shop acted as an incubator for new research areas, when the science shop staff conducted research by themselves or when science shop themes were integrated in regular projects by researchers. Other ways in which the research agenda could be influenced was through university funding for science shop research, the introduction of participatory research methods into regular research by science shop staff or when a science shop developed into a research centre for participatory research.<sup>160</sup>

Although it was stated in the report that mechanisms of influencing university curricula and research programmes were possible and had been recognized by science shop employees, it did not specify the information in relation to the locations of different science shops, nor did it show a development in time regarding the science shops' influence on research agendas.

## Conclusion

In general, science shops could and did cause some changes in the university curricula and research agendas, for example through continuation of research projects initiated in science shops. However, it proved to be difficult to have a far-reaching impact on the university's research agenda and curriculum. The limitations of the science shops were also acknowledged by its own actors. Furthermore, it is hard to see where the science shop research was influential beyond continued research of singular science shop questions.

Both the SCIPAS report and the earlier evaluation by Zaal and Leydesdorff seem to suggest that the influence on the university's curriculum and research agenda was possible and did happen.

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<sup>158</sup> 'Wetenschapswinkels moeten misschien sluiten', *NRC Handelsblad*, 24-6-1986, <http://resolver.kb.nl/resolve?urn=KBNRC01:000029362:mpeg21:a0020>, consulted 7-6-2017.

<sup>159</sup> Hende, Jørgensen, *SCIPAS Report no. 6*, 19.

<sup>160</sup> *Ibidem*, 35.



However, it seems that the impact of science shops was relatively small. Moreover, the impact was hard to measure.

Both in Utrecht and Amsterdam, efforts were made to adjust the shops to a more market-oriented university. However, the reports made near the end of the existence of the science shops were still occupied with the question on how to enhance the work done in the science shop into broader programmes. Furthermore, the institutions that arose from the shops did not seem to offer the same possibilities for client groups, for example in the case of the Amsterdam Agency for Advancing Social Research, which gradually lost its non-commercial character.

## Chapter IV: Closing down science shops

In the previous chapter, the increasingly hard circumstances faced by the science shops in the 1980s and 1990s were described. In this chapter, the development (and often closure) of science shops from the 1990s onwards, as well as the institutions that were presented as successors or additions to the science shops will be examined. While the opening and development of science shops had gained considerable attention in media outlets, the end of the science shops was less well documented and sometimes even unclear. Both in Utrecht and Amsterdam, this is partly caused by the fact that the shops were reorganized or incorporated into other institutions. Nonetheless, a general outline regarding the transformations and endings of the science shops in Amsterdam and Utrecht can be sketched.

As mentioned in the previous chapter, the science shop questions that could be answered by consulting existing research became less frequent in the 1980s. This was mainly caused by the professionalization of typical science shops clients, such as environmental or development aid organizations, who started to hire their own experts. A similar development was the establishment of initiatives which had this function, such as consumers organizations and phone services for science (*Wetenschapslijn*) and the environment (*Milieutelefoon*). The national *Milieutelefoon* was instituted in 1987 and was restricted to encyclopaedic questions and targeted individuals with questions instead of groups. The phone service largely succeeded in reaching their targeted groups, which made their overlap with the science shops limited.<sup>161</sup>

### Amsterdam

One way in which the goal of fostering more socially oriented research was pursued was through the FMO. In Amsterdam, the FMO was already established in 1984, motivated by the wish of the University of Amsterdam to seek direct cooperation with social organizations. One of the organizations with which the FMO sought cooperation was the labour union, although the head of the university's centre for labour issues emphasized that it would be undesirable for the university to produce pleasing results for the labour union.<sup>162</sup> While the science shop closed down in 1995, it is unclear for how long the FMO continued to exist. As it appears, the FMO existed for at least several years after the closing of the shop. In 1997, an essay prize for socially relevant scientific essays was

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<sup>161</sup> H. Schoor, 'Milieutelefoon en wetenschapswinkels', in: J. Weerdenburg, F. Pennings, *Een deurtje in de toren* (Utrecht 1991), 35-43, 35-36; 39-40.

<sup>162</sup> J. Scheerman, 'FNV en universiteit: een pril huwelijk', *De Waarheid* (5-11-1984), <http://resolver.kb.nl/resolve?urn=ddd:010378759:mpeg21:a0110>, consulted 12-6-2017.

issued by the FMO.<sup>163</sup> The Amsterdam chemistry shop operated somewhat separately from the ‘regular’ science shop and has existed a bit longer, with the latest publication dating from 2002.<sup>164</sup> As mentioned earlier, the closing down of the science shop in Amsterdam happened quietly and sources dealing with the actual process of closing down are rare. It seems that it was the result of financial cuts and staff reduction (called *kanteling* or ‘tilting’ of the office) at the Office of the University, the department that supports the university management and takes care of public affairs. After the ‘tilting’, the Office of the University was supposed only to be occupied with tasks regarding the university as an enterprise. The rest of the tasks would be moved to the suitable faculties.<sup>165</sup> Although the reorganization was widely discussed within the meetings of the university council, it appears that the existence of the science shop as a separate element within the organization was not an important point of discussion at the council meetings. The shutting down of the shop was mentioned in December 1994 as an example of the consequences of establishing new entities of the Office of the University and shutting down others was still not entirely clear and needed further calculation. However, there was no mention of any substantive concerns regarding the disappearance of the science shop.<sup>166</sup>

One possible explanation for the lack of debate on the existence of the science shop, besides a more general decreased interest in the science shops, is an apparent lack of protest from within the shop. According to one former employee working at the Amsterdam science shop in the last two years before closing, the science shop had trouble representing itself. Therefore, an effective protest to maintain the science shop remained absent.<sup>167</sup> In 1993, one faction of the university council reported an ‘enthusiasm’ within the University Office for the reorganization.<sup>168</sup> The science shop handed in a work plan for 1994 at the university council in which they presented their plans within the process of change that was happening. In this work plan, it was stated that the science shop would consider with which section of the University Office it should cooperate. Next to that, the science shop had been asked to develop policies to generate its own income. This request was called reasonable, although there should be no high expectations.<sup>169</sup>

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<sup>163</sup> Curriculum Vitae of Professor of Sociology M. Crul, [http://nesetweb.eu/wp-content/uploads/2015/10/Maurice\\_Crul\\_NL\\_CV.pdf](http://nesetweb.eu/wp-content/uploads/2015/10/Maurice_Crul_NL_CV.pdf), consulted 26-6-2017.

<sup>164</sup> WorldCat, search term ‘Chemiewinkel Amsterdam’, [http://www.worldcat.org/search?q=chemiewinkel+amsterdam&fq=&dblist=638&qt=sort&se=yr&sd=desc&qt=sort\\_yr\\_desc](http://www.worldcat.org/search?q=chemiewinkel+amsterdam&fq=&dblist=638&qt=sort&se=yr&sd=desc&qt=sort_yr_desc), consulted 14-7-2017.

<sup>165</sup> Universiteit van Amsterdam, ‘Ontwerp Instellingsplan’ (29-4-1994), 16, archive University of Amsterdam.

<sup>166</sup> *Notulen van de 442<sup>e</sup> vergadering van de Universiteitsraad van de Universiteit van Amsterdam, gehouden op op dinsdag 13 december 1994 in de hal van het Maagdenhuis*, archive University of Amsterdam.

<sup>167</sup> Telephone conversation with Carla Vriend, 14-6-2017.

<sup>168</sup> *Notulen van de 419<sup>e</sup> vergadering van de Universiteitsraad van de Universiteit van Amsterdam, gehouden op dinsdag 6 april in de hal van het Maagdenhuis*, archive University of Amsterdam.

<sup>169</sup> Wetenschapswinkel UvA, ‘Jaarwerkplan 1994’ (Amsterdam 1994), 7, archive University of Amsterdam.

## GIO

The number of employees at the University Office, the organization where the science shop was accommodated, dropped from 515 to 469 in 1994.<sup>170</sup> Shutting down the science shop was presented as a change in the organization of the university's communication department, which merged with the central support for internationalization and contract funding, according to plans made in 1994. This meant that the science shop merged with the Organization for Communication and Development, the Abroad Office and the Transfer Point. In the annual report of 1994 it was stated that this new communications organization was named the *Groep Institutionele Ontwikkeling* (Group for Institutional Development, GIO). In a section of the report, which further elaborated on the activities of the communications organization, it was suggested that the science shop would be embedded in activities with an informative character. Furthermore, it was stated that the communication efforts were "unabated or even increased" despite the re-organization of the University Office.<sup>171</sup> Among those activities were information markets about study programmes to keep the number of incoming students at a stable rate and cooperation with the local television broadcasting AT5, consisting of public lectures to make the general public aware of "what happens behind those countless university facades."<sup>172</sup> The merging of the science shop with the university's communication organization shows that the science shop's task of conducting research commissioned by the public was traded for a top-down approach in which scientists presented (finished) research: input by the audience or client groups was not mentioned or implied in the plans for the centralized communication activities.

The position of the GIO can be illustrated by a newspaper article from 1997. The article deals with an advice by the GIO regarding the university's magazine *Folia*. According to the GIO, the magazine should be transformed into a popular-scientific magazine, inspired by *National Geographic*, for an audience beyond students and university staff: it was suggested that the magazine was outdated and reflected the politicized university of the 1970s and 1980s.<sup>173</sup> This plan did not proceed. A year later, in 1998, new commotion arose at the university magazine, when plans were made to house the magazine at the GIO. The fact that promotional activities and the recruitment of new students took place at the GIO as well, caused concerns about the possibilities for critical

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<sup>170</sup> Universiteit van Amsterdam, *Algemeen en Financieel Jaarverslag 1994* (Amsterdam 1995), 181.

<sup>171</sup> *Ibidem*, 26.

<sup>172</sup> *Ibidem*, 27.

<sup>173</sup> F. Weeda, 'UvA wil goodwill in Folia', *NRC Handelsblad* (16-12-1997), <http://academic.lexisnexis.eu/??lni=48MW-10D0-0150-W0FD&csi=280434&oc=00240&perma=true>, consulted 28-6-2017.

journalism in *Folia*. According to a newspaper article, *Folia* editors frequently mocked the GIO in their magazine.<sup>174</sup>

It should be noted that client-based and socially oriented research is not necessarily incompatible with the public relations department of a university. More recently, good publicity and a social image has been mentioned as one of the reasons why the university valued the science shop at Wageningen University.<sup>175</sup> The GIO published various annual reports, newsletters and overviews of the university until 2000. Two popularizing books can be found that have mentioned the GIO as one of the organizations that made publication possible: one collection about the Amsterdam school of social psychology and one about genetic engineering.<sup>176</sup> However, a search for publications does not indicate that client-based research has taken place on a large scale as part of the GIO.<sup>177</sup> One publication on research conducted by the GIO can be found, which is a 1996 report on the future of community work agencies.<sup>178</sup> Combined with the aforementioned impression that the GIO was more concerned with the recruitment of new students and presenting regular research to the public, it appears that the possibilities for client-based research diminished with the closure of the science shop in Amsterdam. The possibilities were not offered by the organization in which the science shop was incorporated. This is reinforced by the impression that the GIO distanced itself from the ‘politicized’ university from the 1970s and 1980s. This suggests that client-based research for disadvantaged groups, which was emancipatory in origin, was not a priority in this new institute. It can be concluded that, at least on an organizational level, the closing down of the science shop implied that the possibilities for socially oriented, client-based research were diminishing at the University of Amsterdam.

## Utrecht

### Science shops in the 1990s

The science shops at Utrecht University were operational much longer than the science shop of the University of Amsterdam. Although the shops in Utrecht did not follow the example of Amsterdam, a

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<sup>174</sup> M. Wiegman, ‘Vijftig jaar kritiek en ruzie. Van Stalinistische meelopers tot verrechtsende fans van het bestuur’, *Het Parool* (10-10-1998), <http://academic.lexisnexis.eu/??lni=48MV-V9T0-0151-035V&csi=280434&oc=00240&perma=true>, consulted 28-6-2017.

<sup>175</sup> R. Didde, ‘Krities’is praktisch geworden’, *De Volkskrant* (3-7-2010), <http://academic.lexisnexis.eu/??lni=7YW0-RH40-Y9M6-H1P3&csi=280434&oc=00240&perma=true>, consulted 30-6-2017.

<sup>176</sup> M. Schilder, M. Lebouille (eds.), *De evolutie de baas: Oude en nieuwe visies op soortvorming en gentechnologie* (Amsterdam 1998), title page; D.A. Stapel, J. Pligt (eds.), *Een tijd van Koomen: ontwikkelingen in de Amsterdamse Sociale psychologie* (Amsterdam 2001), title page.

<sup>177</sup> Search results for “Groep Institutionele Ontwikkeling” in the catalogue of the University of Amsterdam, University of Utrecht and Google Scholar, consulted 30-6-2017.

<sup>178</sup> H. van de Graaff, J.J. Boonstra, *Toekomst voor wijkopbouworganen: resultaat van een onderzoek naar het functioneren van Amsterdamse wijkopbouworganen en enige aanbevelingen voor hun functioneren in de toekomst* (Amsterdam 1996).

slow disappearance in the 1990s, there seems to have been a turn in the perception of the science shops within the university, at least in terms of university-wide marketing. The science shops no longer seemed to be presented as examples of the university's social involvement. This shift fits well with the view that the science shops were increasingly seen as an outdated relic of the politicized university from the 1970s and 1980s.

In Utrecht University's annual report of 1994, a section within a chapter on the university and social development was reserved for the science shops. In this section, the goal of making research available for social groups without the knowledge and means to conduct research themselves was expressed. Besides providing these groups with knowledge, the shops were hailed because they increased the social relevance of research and education, therewith contributing to the knowledge transfer from university to society. The seven faculty shops were involved with around 100 projects a year, leading to approximately 50 reports.<sup>179</sup> In the 1995 annual report, both the chapter and the section on the science shop had disappeared. Furthermore, plans to foster contract research were mentioned and it was stated that (commercial) contracted research had become increasingly important for the primary tasks of the university.<sup>180</sup> The omission in the university's annual report of the following year, 1996, is more striking. In a section on 'knowledge transfer to society' it was stated that the university saw "research sent by questions from society" as one of its most important tasks and that politics and society rightly demanded a justification for the use of public money. The section continues to mention various examples of ways in which research groups were looking for a connection with social themes as appointed by the Ministry of Education, Culture and Science and how research groups entered strategic alliances with companies and ministries. However, there is no mention of the seven existing science shops that answered the mentioned questions from society in a literal and relatively direct way.<sup>181</sup>

The science shops in Utrecht managed to escape troubles that had led to the closing of the science shops in Leiden and Amsterdam. The science shops still received relatively good funding, despite the decentralization of the funding to the faculties. Only the faculties of humanities and social sciences had tried to scale down the budget.<sup>182</sup>

In the physics shop at Utrecht University, the goal of the shop remained similar throughout the 1990s. In the annual report of 2004, the shop stated that the goal of science shops was to provide scientific knowledge and experience, by request, to social organizations that did not have

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<sup>179</sup> Universiteit Utrecht, *Jaarverslag 1994* (Utrecht 1995), 36.

<sup>180</sup> *Ibidem*, 61.

<sup>181</sup> *Ibidem*, 15-17.

<sup>182</sup> K. Volkers, 'Wetenschapswinkel wordt multinational. Van maatschappijkrities naar maatschappelijk relevant', *Ublad*, vol. 32, no. 9 (26-10-2000), <http://www.ublad.uu.nl/WebObjects/UOL.woa/2/wa/Ublad/archief?id=1015439>, consulted 7-7-2017.

sufficient knowledge and means to conduct the research or have the research conducted themselves. Furthermore, it was stated that the science shop aimed for contribution to the social relevance of education and research.<sup>183</sup> These goals had remained more or less the same for many years, with the difference that, from the annual report of 1998 onwards, the addition that the shop served 'non-commercial' groups had been omitted and replaced with the formulation mentioned above.<sup>184</sup> It is likely that this was related to the inclusion of small and medium-sized enterprises in their clientele, which would follow in 2000. This widening of their potential clientele was requested by the university's executive board and could be seen as a continuation of the university being increasingly oriented towards cooperation with parties that could take care of a part of the funding.<sup>185</sup> The budget of the physics shop remained relatively stable. In 1996, the shop received f. 39.300 from Utrecht University's central administration, plus f. 17.000 from the Faculty of Physics and Chemistry.<sup>186</sup> In 1998 and 2000, the shop received f. 52.000 from the university's central administration and the faculty combined.<sup>187</sup>

When comparing the Utrecht physics shop with the Amsterdam science shop, it should be noted that the development of the science shops proceeded quite differently. While the Amsterdam science shop already had merged with the university's communication department, the Utrecht physics shop, at the same time, seemed to remain stable in its organization and practice. The annual reports of the biology shop show that science shops at the different faculties in Utrecht accentuated their tasks in different ways. In the 1990s, the biology shop did not specify a lack of financial means as a criterion for accepting a question at the biology shop. Clients were asked to contribute financially if they had the means to do so.<sup>188</sup> In the annual report of 2001, the condition that "there are no possibilities (financially or otherwise) to have research conducted outside of the science shop" was mentioned.<sup>189</sup> However, it was still added that a client would contribute financially if possible.<sup>190</sup>

### Closing down the science shop in Utrecht

The science shops in Utrecht were transformed into the *Kennispunten* (knowledge transfer points) from 2008 onwards. While the science shops in Utrecht had existed longer than the one in

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<sup>183</sup> P.M. Huisman-Kleinherenbrink, *Jaarverslag 2003 en 2004. Wetenschapswinkel Natuurkunde* (Utrecht 2005), 7.

<sup>184</sup> H.F. Broersma, *Jaarverslag 1996. Wetenschapswinkel Natuurkunde* (Utrecht 1997), 5; P.M. Huisman-Kleinherenbrink, *Jaarverslag 1997. Wetenschapswinkel Natuurkunde* (Utrecht 1998), 4.

<sup>185</sup> P.M. Huisman-Kleinherenbrink, *Jaarverslag 2000. Wetenschapswinkel Natuurkunde* (Utrecht 2001), 6-7.

<sup>186</sup> Broersma, *Jaarverslag 1996*, 26.

<sup>187</sup> Huisman-Kleinherenbrink, *Jaarverslag 1998*, 13; Huisman-Kleinherenbrink, *Jaarverslag 2000*, 13.

<sup>188</sup> Wetenschapswinkel Biologie Utrecht, *Jaarverslag '94* (Utrecht 1995), 7-9; Wetenschapswinkel Biologie Utrecht, *Jaarverslag '95* (Utrecht 1996), 5-7.

<sup>189</sup> Wetenschapswinkel Biologie Utrecht, *Jaarverslag 2001* (Utrecht 2002), 14-15.

<sup>190</sup> *Jaarverslag 2001*, p.21.

Amsterdam and were even transformed into a similar institution, the closing down of the Utrecht shops resembles the shutting down of the science shop in Amsterdam: after downscaling in terms of budget and personnel, the desks gradually disappeared with apparently no fuss.

By 2012, their position was challenged and in 2013 and 2014, the desks were closed. The knowledge transfer point for the humanities was closed after financial cuts by the faculty in 2013.<sup>191</sup> Other *Kennispunten* had likely followed this example in the same year and the *Kennispunten* were omitted from the sections on valorisation in the annual reports from 2012 onwards.<sup>192</sup> An article in the university's online magazine suggests that - similar to the University of Amsterdam, although ten years later - Utrecht University saw community-based research as an outdated and limited method of stimulating socially relevant research. The dean of the faculty of humanities stated that although the work of the transfer desks was good, it was no longer compatible with the faculty board's vision. Valorisation should be approached more broadly, "with large-scale international research projects that sometimes run into millions, like the history of Shell."<sup>193</sup> An employee of the *Kennispunt* Beta Sciences stated that the transfer point would continue, although scaled down, with a focus on job orientation and in cooperation with the Utrecht Valorisation Centre.<sup>194</sup>

It is hard to pin down the reason why the science shops in Utrecht remained open with a relatively stable funding throughout the 1990s, while the science shop in Amsterdam had already been closed in 1995. One beneficial factor for the survival of the Utrecht shops that has been mentioned by an employee of the central organization for science shops was that the university council in Utrecht had always supported the shops.<sup>195</sup> This did not seem to be the case in Amsterdam. According to Leydesdorff, who was involved with the Amsterdam science shop in the 1970s and 1980s and who was laterally involved with the organization of science shops later on, differences between science shops in Dutch cities were only gradual and it was not so much the university's administration, but rather policy on a governmental level that caused the shutdown of the shop at the University of Amsterdam.<sup>196</sup> However, the fact that the science shops in Utrecht remained open suggest that the stance of the university council with regard to the shops was a decisive factor.

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<sup>191</sup> X. Bronkhorst, 'Reorganisatie Geesteswetenschappen: 15 medewerkers weg', <https://www.dub.uu.nl/nl/nieuws/reorganisatie-geesteswetenschappen-15-medewerkers-weg>, consulted 19-7-2017.

<sup>192</sup> Universiteit Utrecht, *Jaarverslag* 2010, 56; Universiteit Utrecht, *Jaarverslag* 2011, 39; Universiteit Utrecht, *Jaarverslag* 2012, <https://www.uu.nl/organisatie/profiel/cijfers-en-feiten/jaarverslag>, consulted 19-7-2017.

<sup>193</sup> H. van Rijn, 'Kennispunten van UU staan onder druk', *Digitaal Universiteitsblad DUB* (5-7-2013), <https://www.dub.uu.nl/nl/nieuws/kennispunten-van-uu-staan-onder-druk>, consulted 25-7-2017.

<sup>194</sup> Ibidem, consulted 25-7-2017.

<sup>195</sup> K. Volkers, 'Wetenschapswinkel wordt multinational'.

<sup>196</sup> Interview with Loet Leydesdorff, 3-7-2017.



One possible factor that could have benefited the science shops in Utrecht was the fact that they were divided by faculty, which may have heightened the engagement between the researchers and the science shop. In contrast to the University of Amsterdam, the Utrecht science shops' stronger connection to the faculties may have made them less likely to be affected all at once by financial cuts.

### Conclusion

Universities took the task of cooperation with external parties increasingly serious in the 1990s. However, science shops were not entirely suited to fit this development, as external funding and cooperation with more commercial parties played an increasing role for the university's socially oriented research agenda. This change in focus of the university did not automatically mean that the university reduced its support for science shops. The differences between the universities of Amsterdam and Utrecht are notable. The science shops in Utrecht, as opposed to the Amsterdam science shop, remained open in the 1990s, caused by a continuing support from the university and a lack of reorganizations. In the early 2000s, the shops in Utrecht had a revival, connected to the start of an international science shop network. However, as reflected in the university's presentation of the shops, science shops as a means for socially oriented research became less prominent in Utrecht as well in the course of the 1990s.

In general, despite the different routes the science shops in Amsterdam and Utrecht have taken, both cases show the role of social relevance in science has shifted. In the 1970s, the social relevance had as strong element of empowerment: socially oriented research was conducted to improve the social position of the groups concerned. This element seemed to have disappeared with the incorporation of the Amsterdam science shop in the university's public relations apparatus. In Utrecht, the absence of empowerment can be seen both in the loosening of criteria (i.e. the explicit incorporation of more commercial groups into the group of potential clients) and in the university's marketing tools. Whether this was a choice or whether the university was forced to commercialize its tasks because of a more neo-liberal political climate, the emancipatory or empowering element of socially oriented gradually disappeared from the university's publications. Third parties involved with research were now seen as more equal shareholders who had to take care of the funding. Socially oriented research shifted in a direction where it became subject to commercial conditions.

## Chapter V: Socially oriented research in the 21<sup>st</sup> century

### Introduction

In this chapter, recent initiatives on socially oriented research will be compared to the practice of the science shops. First, an outline of recent science shop activities will be given, focusing on the international network of science shops that arose in the early 2000s and the few existing Dutch science shops that are still operating at the universities of Groningen, Twente and Wageningen. In addition, through the work of Jacqueline Cramer, former organizer of the science shop in Amsterdam, I will show how the goal of making science more socially oriented was also pursued beyond the science shop from within larger institutions. Finally, the science shops will be compared to the National Science Agenda. This agenda is a more recent initiative to increase public engagement with science, which also involves research inspired by questions from the public.

### Science shops worldwide

A 2000 article in Utrecht University's magazine for staff and students paid attention to the science shops. The occasion was the establishment of an international network of science shops. This international network, the SCIPAS, of which reports have been mentioned in an earlier chapter, was commissioned by the European Union, who funded the project with f. 450,000. The Utrecht science shops were presented as shops that had managed to evade the "malaise" that had hit the science shops, according to the article, three years earlier.

The existence of science shops at universities in the Netherlands was not self-evident anymore by the turn of the century. However, there was a renewed spark of international interest in the concept of science shops. This interest for Dutch science shops emerged in the very same period as in which many science shops had either closed or were threatened in their existence. The head of the biology shop, the shop that was chosen to function as a secretary for the SCIPAS, stated that it was "a little weird" that the Dutch science shops suddenly were presented as an example for the rest of the world, while they were actually being closed.<sup>197</sup>

International cooperation had already begun in the 1980s and 1990s, when science shops were struggling to receive funding and stay operative. Dutch shops served as an explicit example for similar initiatives in other countries. The establishment of shops in countries outside of the Netherlands was often preceded by a visit to Dutch science shops.<sup>198</sup> Furthermore, when the science shops were more institutionalized, there were active attempts from the Netherlands to establish science shops in foreign countries. This was the case for the chemistry shop in Utrecht, that helped setting up a similar shop in the Czech Republic. The Dutch Ministry of Housing, Physical Planning and

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<sup>197</sup> K. Volkers, 'Wetenschapswinkel wordt multinational'.

<sup>198</sup> Farkas, 84.

Environment even contributed to the funding of some science shops, in a project to foster science and technology in former East Bloc countries.<sup>199</sup>

In 2004, the SCIPAS network resulted in a commissioned article by Leydesdorff on the then-current developments of science shops and the future routes they could take. According to him, these were building up an international network, investigating new forms of (profitable) research or going back to their ideological roots.<sup>200</sup> In 2006, an article was issued by Mulder and De Bok, coordinators of respectively the Groningen chemistry shop and the Utrecht biology shop. They emphasized the communicative function of the science shops: science shops were said to be an “independent, trusted source” that provided “independent, participatory research support to civil society.”<sup>201</sup> Given the fact that the article appeared shortly before some of the Groningen science shops were closed and the Utrecht shops were transformed into the Knowledge Transfer Points, it is notable that, in this article, science shops were explicitly presented as a successful institution. Besides stating that the science shops were a trustful source, they stated that the shops were “independent, and paid only by the university,” that “there are now science shops at more than two-thirds of Dutch universities, which fully fund their shops” and that “[science] shops in Europe got to know each other, and their network, ‘Living Knowledge’, is constantly enlarging.”<sup>202</sup>

In the article, the science shops were not only called a success because of their expanding number, but also in terms of influence on research policy. The authors stated that “after the research project, science shops help to define interesting follow-up research.”<sup>203</sup> Science shop research had an impact on scientific research by helping to find interesting research topics and raising scientists’ awareness of the public.<sup>204</sup> The authors also positively assessed the influence of science shops on the study programme: the projects provided the students with valuable skills in communication and project work, raised the social awareness of the students and reformed the curriculum.<sup>205</sup> This assessment differs from earlier reports on the effect of science shops in which it was stated that the impact of the shops was limited. Furthermore, the science shop in Utrecht was closed two years after this article had been published. The mentioned influences on the study curriculum and research agenda can mostly be categorized as direct influence, such as the students’ experience with project work and community-based research. This type of work is inherent to conducting science shop

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<sup>199</sup> Farkas, 84.

<sup>200</sup> Fischer, Leydesdorff, ‘Science shops in Europe: the public as stakeholder’, 200.

<sup>201</sup> H.A.J. Mulder, C.F.M. de Bok, ‘Science shops as university-community interfaces: an interactive approach in science communication’, in: D. Cheng, J. Metcalfe, B. Schiele (eds.), *At the Human Scale – International Practices in Science Communication* (Beijing 2006), <http://www.crepeweb.net/wp-content/uploads/2010/10/mulderdebok.pdf>, 1, consulted 12-7-2017.

<sup>202</sup> Ibidem, 6-8, consulted 12-7-2017

<sup>203</sup> Mulder, De Bok, 5.

<sup>204</sup> Ibidem, 12.

<sup>205</sup> Ibidem, 12.

projects. Another form of direct influence mentioned by the authors was in Utrecht and Groningen, where science shops were teaching classes on community-based research and risk communication.<sup>206</sup>

The authors base some of their findings on the 2001 SCIPAS report. In hindsight, the evaluation of the influence of science shops on university policy seems to be too positive. It is doubtful whether it can be said that the science shops in the Netherlands had a lot of impact on the university curriculum and the research agenda. Apart from the SCIPAS report, there are no clear indications that this was the case, especially not after 2000, when many science shops were closing down. Furthermore, the SCIPAS report also mentioned that in many shops, it was not known *how* to influence the research policy and study curriculum.

### Current science shops in the Netherlands

Currently, there are science shops active at three universities in the Netherlands: in Groningen, Twente and Wageningen. Groningen has a decentral model with several shops divided by faculty, while the ones in Twente and Wageningen have a central shop (although the scope of the questions is limited by the specialized nature of the universities). The shops vary in size. In the fall of 2016, the Twente science shop celebrated answering its 2500<sup>th</sup> question.<sup>207</sup> The science shop in Groningen handled approximately 100 to 200 questions a year in the last few years.<sup>208</sup> The Wageningen science shop has been finishing approximately ten projects a year in the last few years, mainly on questions regarding landscape and agriculture.<sup>209</sup>

The science shop in Groningen explicitly holds on to the title of a science shop, instead of choosing a “trendy name” as has been the case at other universities where shops were transformed or merged with other university activities.<sup>210</sup> However, looking at the current mission of the Groningen science shop, the shop does not seem to be a science shop only by its name. It states that

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<sup>206</sup> Ibidem, 11.

<sup>207</sup> ‘Wetenschapswinkel UT brengt voor 2500ste keer vraag en aanbod samen’, *Tubantia* (1-9-2016), <http://www.tubantia.nl/nieuws/wetenschapswinkel-ut-brengt-voor-2500ste-keer-vraag-en-aanbod-samen~ac75699e/>, consulted 16-8-2017.

<sup>208</sup> Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2012* (Groningen 2013), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/wwc26-2012.pdf>, consulted 16-8-2017; Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2013* (Groningen 2014), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/wwc27-2013.pdf>, consulted 16-8-2017; Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2014* (Groningen 2015), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/wwc28-dig.pdf>, consulted 16-8-2017; Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2015* (Groningen 2016), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/jaarbericht-2015.pdf>, consulted 16-8-2017; Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2016* (Groningen 2017), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/wwc30.pdf>, consulted 16-8-2017.

<sup>209</sup> Wageningen University & Research, ‘Projects Science Shop’, <http://www.wur.nl/en/Education-Programmes/science-shop/Projects.htm>, consulted 29-8-2017.

<sup>210</sup> RuG, *Wetenschapswinkel Courant. Jaaroverzicht 2016*, 3.

the shop handled questions that require short-term research emanating from societal partners without sufficient funding.<sup>211</sup> Their marketing also stresses the non-profit nature of the science shop research by promoting their results as “free social impact”.<sup>212</sup> In 2006, the university administration planned to close the shops for biology, chemistry, physics and pharmacy, for financial reasons. The debate on this plan shows that the science shops still depended on the support of their faculties. In this case the dean of the faculty of mathematics and natural sciences stated that, even though it was a pity that the shops had to close, the social impact of the shops should not be exaggerated.<sup>213</sup> Parliamentary questions were asked about the abolition of the Groningen science shops, after which the then Minister of Education endorsed the shops, but stated that she had no influence on individual decisions.<sup>214</sup> The shops were eventually merged into one science shop for exact sciences, which is still active.

The Wageningen science shop also seems to be a science shop in the traditional sense. The criteria for accepting a request at the shop are similar to those of the early science shops: the question should be wide enough for a more general social interest and individual questions are not eligible for science shop research. The client should not have the means to have the research conducted, but is nevertheless expected to make a (financial) contribution to the project.<sup>215</sup>

The science shop of the University of Twente tries to attract a broader audience by aiming for entrepreneurs, small- and medium sized enterprises and non-profit organizations. In the criteria of the shop, commercial purposes of the science shop research are not excluded. Clients can approach the shop for questions on sustainability or social goals, but also for questions on modernization or improvement of products and technology.<sup>216</sup> The Twente science shop seems to have changed into a more commercial knowledge transfer agency. According to a report on valorisation by the *Kennispark Twente* (Knowledge Park Twente), an organization similar to the science parks in Utrecht and Amsterdam, the science shop had been focusing on non-profit organizations for a long time.<sup>217</sup> At the turn of the century, the former coordinator of the science shop of Twente already stated that small

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<sup>211</sup> Wetenschapswinkel Groningen, ‘Wat doen de Wetenschapswinkels?’, <http://www.rug.nl/society-business/science-shops/wat-doen-dewetenschapswinkels>, consulted 16-8-2017.

<sup>212</sup> Wetenschapswinkel Groningen, ‘Our shop is open’, <http://www.rug.nl/society-business/science-shops/our-shop-is-open.png>, consulted 16-8-2017.

<sup>213</sup> M. Trimbach, ‘Steun, maar weinig hoop voor de wetenschapswinkels’, *Dagblad van het Noorden* (30-3-2006), <http://academic.lexisnexis.eu/??lni=4JKW-HXN0-TWS7-1351&csi=263237&oc=00240&perma=true>, consulted 29-8-2017.

<sup>214</sup> ‘Steun van de minister’, *Dagblad van het Noorden* (6-5-2006), <http://academic.lexisnexis.eu/??lni=4JWK-6YW0-TWS7-129W&csi=263237&oc=00240&perma=true>, consulted 30-8-2017.

<sup>215</sup> Wageningen University & Research, ‘Voorwaarden bemiddeling’, <http://www.wur.nl/en/Education-Programmes/science-shop/Projects.htm>, consulted 29-8-2017.

<sup>216</sup> University of Twente, ‘Science shop Twente’, <https://www.utwente.nl/nl/az/wewi/>, consulted 29-8-2017.

<sup>217</sup> Kennispark Twente, *Kennispark & Koplopers. Zes jaar valorisatie in Twente: de mensen en hun verhalen* (August 2017), 72.

and medium sized businesses were welcomed by the science shops. The science shop even charged a higher fee for traditional client groups, such as the labour movement or environmental organizations – which had increasingly become financially stronger since their establishment - than for small businesses.<sup>218</sup> By 2008, it was stated in the shop's newsletter that there was an emphasis on small- and medium sized enterprises and that individuals can also approach the science shop with questions.<sup>219</sup> Extra budget for small local businesses became available to the science shop in 2011.<sup>220</sup> The regional function of the science shop is emphasized nowadays and the shop also provides what they call "a new form of service" by organizing thematic events or providing expert panels.<sup>221</sup>

The science shops in Wageningen and Groningen can be said to have adjusted the shops to fit the contemporary university system while keeping the original goals of the science shops in mind. Although the criteria for science shop questions changed, the shops remained focused on non-profit groups. In Twente, the science shop seems to have transformed into a broader knowledge agency, with an explicit regional function rather than an emancipatory function.

Wachelder's 2003 analysis of the science shops assessed the formal position of the science shop in the university, the extent to which main positions at the shops were held by professionals, whether the shops were conducting research or merely brokering and whether the shops served disadvantaged groups only or social groups. Looking at the science shops that are still active now, these factors do not seem to be of an overriding importance for the 'survival' of the shops. For example, the main staff position of the science shops in Groningen and Twente were in both cases held by professionals, but this was also true for the former science shop in Amsterdam.<sup>222</sup> However, Wachelder also pointed out the importance of local and regional activities for the ideological underpinning of science shops.<sup>223</sup> This is the case for the science shops in Groningen, Twente and Wageningen. The universities are located outside of the Randstad urban area. The Twente science shop presents itself as a mediator between regional questions and Twente University.<sup>224</sup> The science

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<sup>218</sup> R. Didde, 'Wetenschapswinkelier snuffelt aan groot geld', *De Volkskrant* (15-4-2000), <http://academic.lexisnexis.eu/??lni=48KK-NTR0-0150-V1KW&csi=280434&oc=00240&perma=true>, consulted 30-8-2017.

<sup>219</sup> Wetenschapswinkel Universiteit Twente, 'Wetenschapskrant' (March 2008), <https://www.utwente.nl/nl/az/wewi/nieuwsbrief-wewi/Oude%20Nieuwsbrieven/digitale%20nieuwsbrief%20mrt2008.pdf>, consulted 30-8-2017.

<sup>220</sup> Kennispark Twente, *Kennispark & Koplopers. Zes jaar valorisatie in Twente: de mensen en hun verhalen* (August 2017), 72.

<sup>221</sup> Wetenschapswinkel Universiteit Twente, 'Wetenschapskrant' (February 2017), <https://www.utwente.nl/nl/az/wewi/nieuwsbrief-wewi/wewi-nieuwsbrief-feb2017-digitale-versie.pdf>, consulted 29-8-2017.

<sup>222</sup> J. Wachelder, 262.

<sup>223</sup> Ibidem, 266.

<sup>224</sup> 'Mijlpaal Wetenschapswinkel: 2500ste vraag' (September 2016), <https://www.utwente.nl/nieuws/!//2016/9/231680/mijlpaal-wetenschapswinkel-2500ste-vraag>, consulted 5-9-

shops in Wageningen and Groningen are less explicitly emphasizing their regional function, but their (recent) projects reflect an interest in regional issues as well.<sup>225</sup>

Another distinctive feature of the universities in Wageningen and Twente is the fact that they are specialized universities, focused on agricultural (Wageningen) and technical research (Twente). Both Wageningen and Twente were not called universities until 1985, as they were traditionally 'colleges'. Until 1985, the term 'university' was reserved for institutions that hosted all academic faculties.<sup>226</sup> The agricultural college of Wageningen (predecessor of Wageningen University) traditionally had a high degree of external contacts, because of the problem-solving character of the conducted research. Adding to this was the fact that the university left a great mark on the city of Wageningen: the amount of students and scientists made up a great deal of the population. Until 1970, when the law for university management reform was introduced, the mayor of Wageningen took a seat in the board of the agricultural college of Wageningen.<sup>227</sup> In the case of Twente, where the university was initially called a technical college, practical application was an argument to establish a new technical college in Enschede. The fact that a large industrial production system had been developing in the region of Twente was one of the motivations to open the technical college.<sup>228</sup>

These factors might have played an advantageous role in the continued existence of the science shops at Wageningen and Twente. Since the research conducted at these universities has arguably always been focused on application, a science shop might be easier to fit in the everyday research practice. Nevertheless, the applied character of the universities of Wageningen and Twente cannot be seen as a decisive factor in the continued existence of the science shops there. The university of Delft, for example, started out as a technical college as well, but the science shop in Delft has been closed around the turn of the century.<sup>229</sup> Furthermore, the science shops still exist at the classical university of Groningen as well.

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2017; 'Wetenschapswinkel Universiteit Twente', <https://www.enschede.nl/inhoud/wetenschapswinkel-universiteit-twente>, consulted 5-9-2017.

<sup>225</sup> 'Projecten Wetenschapswinkel', <https://www.wur.nl/nl/Onderwijs-Opleidingen/wetenschapswinkel/Projecten.htm>, consulted 5-9-2017; Rijksuniversiteit Groningen, *Wetenschapswinkel Courant. Jaaroverzicht 2016* (Groningen 2017), <http://www.rug.nl/society-business/science-shops/over-de-wetenschapswinkels/jaarberichten/wwc30.pdf>, consulted 5-9-2017.

<sup>226</sup> J.M. Praamsma, *De universiteit als vormingsinstituut. Deel II: naar een moderne universiteit. Ontwikkelingen in het academisch onderwijs vanaf de jaren zestig van de 20e eeuw* (Utrecht 2006), 12.

<sup>227</sup> J.A. Faber, *De geschiedenis van de Landbouwwuniversiteit Wageningen, deel 3: van revolutie naar rendement, 1970-1990* (Wageningen 1993), 231-232.

<sup>228</sup> J.J. de Boer, *Een kleine en kwetsbare instelling. Een geschiedenis van de Universiteit Twente, 1961-2011* (Enschede 2011), 33-34.

<sup>229</sup> H. van Renssen, 'Science-shoppen; Kantlijn', *De Volkskrant* (22-3-2003), <http://academic.lexisnexis.eu/??lni=4869-F6D0-0150-V3YH&csi=280434&oc=00240&perma=true>, consulted 19-9-2017.

## Socially oriented research on an individual level

Impact on university policy can also be traced on a non-institutional level, when looking at the individual careers of people organizing the science shop. Jacqueline Cramer graduated in Biology at the University of Amsterdam in 1976. From 1977 to 1982 she worked as an organizer in the science shop of the University of Amsterdam. After that, she worked at the Dynamics of Science and Technology department at the same university. Later on, she worked at The Netherlands Organisation for Applied Scientific Research.<sup>230</sup> From 2007 to 2010, she served as the minister for Housing, Spatial Planning and the Environment for the Labour Party. After this term, she got involved with the Utrecht Sustainability Institute as a professor and strategic advisor.<sup>231</sup> The involvement with the Dynamics of Science and Technology workgroup at the University of Amsterdam can be seen as a continuation of her activities to reflect on scientific practice on a more institutional level.

In an interview, Cramer stated that the science shops were established in an environment in which the link between science and society was largely absent: students were primarily trained to become researchers or teachers. There was a need to make university education more socially relevant and to reflect on the role of science and its practical implications.<sup>232</sup>

Cramer advocated a science shop that aimed for more longer-lasting projects in the 1990s and acknowledged the changing position of the science shops since the 1980s. There was a shift in orientation of the university from fundamental research to applied research of which the science shops could not take advantage, as long as their research projects did not fit the regular research programme and were not sufficiently funded. The traditional client groups became increasingly professionalized and according to Cramer, the science shops should therefore not maintain the same role as they had in the 1980s. Instead, depending on the support from within the different universities, science shops should professionalize the answering of the short-term questions and start to set up longer-lasting research projects in cooperation with client groups. According to Cramer, these proposals did not necessarily conflict with the original goals of the science shops.<sup>233</sup>

These recommendations were written by Cramer in 1991, approximately nine years after she had been involved with the science shop. At that moment, she was working as a researcher at the Study Center for Technology and Policy, part of the Netherlands Organisation for Applied Scientific Research. Furthermore, within the University of Amsterdam workgroup of Dynamics of Science and

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<sup>230</sup> J. Cramer, A. van der Heijden, J. Jonker, *Balanceren tussen denken en doen. Het proces van operationalisering van het begrip maatschappelijk verantwoord ondernemen binnen bedrijven* (Nijmegen 2004), 57.

<sup>231</sup> <https://www.uu.nl/staff/JMCramer/0>, consulted 27-6-2017.

<sup>232</sup> Telephone conversation with Jacqueline Cramer, 23-8-2017.

<sup>233</sup> J. Cramer, 'De positie van de wetenschapswinkels in de jaren negentig', in: J. Weerdenburg, F. Pennings, *Wetenschapswinkels in de jaren negentig* (Utrecht 1991), 23-34, 27-32.



Technology, she worked as a professor by special appointment in environmental science.<sup>234</sup> Environmental science was still young at that time: in the Netherlands, it was only established as a serious discipline in the late 1970s and 1980s.<sup>235</sup> The institutionalization of environmental science can be seen as the result of growing environmental concerns, which also showed in the questions asked at the science shops: requests for research on environmental issues and pollution inspired a large part of the science shop projects. The establishment of environmental science as a discipline cannot be seen as a direct consequence of the science shops, however, since the environmental movement and the science shops in principle worked as two separate groups. Furthermore, there were differing visions on the role of science in the Dutch environmental movement.<sup>236</sup> However, a continuity can be seen in the person of Cramer. Whereas she first worked on (among other requests) environmental issues in the science shop, later on she dealt with those issues in more institutionalized surroundings. This is in line with her recommendations of professionalization and longer-lasting research for the science shop in the 1990s. Her work on environmental issues in a more institutional surrounding was further continued in her political work and her more recently acquired position as professor and strategic advisor at the Utrecht Sustainability Institute.

When asked about the effect of democratization of university research in an interview, Cramer is positive about the fact that universities now increasingly have to link their research to social issues and other scientific disciplines. However, she thinks that science is still very much focused on specialization, within research areas. Despite the fact that social questions are now much more important in science than they were around the time the science shops started, there is still a tension between science and its relation with society. It is hard to engage researchers with social themes and, as has been the problem with science shops, questions from society do not always lead to themes that are suitable for scientific research. The increased pressure to publish has reinforced this tension. Social themes can find their way to science if it fits into an existing framework of research themes. Cramer states that this can lead to a narrowed view, whereas innovation often emerges at the edges of scientific research areas.<sup>237</sup>

What has changed, according to Cramer, is that researchers and teachers are now more aware of social issues. These issues are embedded into university research in a more structural way than through the method of science shops. Social themes tend to be incorporated more easily at

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<sup>234</sup> 'Personalia', in: J. Weerdenburg, F. Pennings, *Wetenschapswinkels in de jaren negentig* (Utrecht 1991), 207-210, 208.

<sup>235</sup> B. Broekhans, *Hoe milieukunde geschiedenis werd* (Nijmegen 2003), 3-5; Quality Assurance Netherlands Universities (QANU), *Milieukunde* (Utrecht 2007), 17-18.

<sup>236</sup> J. Cramer, *De groene golf: geschiedenis en toekomst van de Nederlandse milieubeweging* (Amsterdam 1989), 85-87.

<sup>237</sup> Telephone conversation with Jacqueline Cramer, 23-8-2017.

universities of applied sciences and in the work of (master) students. The latter can use a social theme for research and assignments within the theoretical frame given by the research field of their education. Because of this more structural approach, individuals and action groups are less powerful than businesses, due to the fact that they are often unable to fund the research. Comprehension of social issues within the research area is now more important than directly answering questions *from* society.<sup>238</sup>

Judging from Cramer's experiences, it cannot be said that the process of university democratization has been fully realized, since she mentions an ongoing tension between research and social themes. However, there was a change in which university research became more socially oriented, of which the science shop was a part.

#### Recent examples of question-based initiatives to increase public engagement

Recent examples of other ways to engage the public with scientific research are an anniversary project of the University of Groningen and the National Science Agenda. In 2014, the University of Groningen organized a project which involved broader public participation, to celebrate the 400<sup>th</sup> anniversary of the university. In this project, *400 vragen voor 400 dagen*, 400 questions from the public were answered in 400 days. Additionally, the questions that remained unanswered were treated separately. Out of these, three were picked, after which the public, in this case 8000 people, could vote for one project to be turned into a PhD project.<sup>239</sup> The difference between questions asked for this project and the questions that were normally asked at the science shops was the curiosity that motivated the questions. Science shop clients are often organizations with a clear interest in the results of their request.<sup>240</sup> This also resulted in another difference with the regular science shop practice: the project received more trivial questions that did not require any actual research.<sup>241</sup>

A similar model of answering questions was used by the National Science Agenda, launched in 2015. The agenda was an initiative by the Netherlands Organisation for Scientific Research, aiming to improve the social relevance of scientific research. Like the science shop, the agenda was inspired by questions from the public. More than 12.000 suggestions for research were submitted, showing that there is an ongoing need for science as an instrument to investigate socially relevant issues.

Comparing the goal of the National Science Agenda or the anniversary project of the University of Groningen with those of the science shops, the agenda and the anniversary project did

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<sup>238</sup> Telephone conversation with Jacqueline Cramer, 23-8-2017.

<sup>239</sup> E. van den Berg, S. Visser, 'Inleiding: 400 dagen voor 400 vragen', in: A. Ramsteijn, R. Tukker, M. Veldman, S. Visser, *Waarom is een paard niet zindelijk? En 399 andere vragen aan de RuG* (Groningen 2015), 5-6.

<sup>240</sup> A. Ramsteijn, R. Tukker, M. Veldman, S. Visser, *Waarom is een paard niet zindelijk? En 399 andere vragen aan de RuG* (Groningen 2015), 56.

<sup>241</sup> *Ibidem*, 61.

not explicitly have the element of empowerment or emancipation that the science shops used to have. The National Science Agenda aims to “optimally utilize scientific research to solve relevant and challenging social and economic issues.”<sup>242</sup> The non-commercial element that science shops traditionally had was absent.

Although the question model used for the Agenda was similar, the differences with the science shop were more evident. Science shops had (and to a certain extent, still have) a model of representation through client groups and mediation, after which a suitable question would be formulated and the research would be conducted. The national science agenda started with gathering all kinds of questions from individuals. Mediation only took place after all the questions had been submitted. The criteria for the questions were another obvious difference: while the science shops were aiming for questions of an emancipatory and non-commercial nature, the National Science Agenda explicitly invited anyone in the Netherlands to come up with the question they would like to ask scientists.<sup>243</sup> These questions could come from individuals or on behalf of parties from science, business or social organizations.<sup>244</sup> Thus, the agenda was equally open both to groups and individuals who already had access to or influence on science (policy) and groups and individuals who did not. The questions were examined by a jury of scientists, who used criteria to determine which questions were suitable to be researched: the questions should be able to be researched within ten years, should be “innovative and challenging” and should either fit an existing Dutch research group or there should be convincing arguments to establish a research group for the theme.<sup>245</sup> In the process of the National Science Agenda, there had been contact with any individual submitter of questions during various events. Furthermore, like the science shop, there have been questions that did not require additional research and could therefore be answered quickly.<sup>246</sup>

Generally speaking, the effect of the National Science Agenda is indirect and long-term. The questions were clustered with similar questions, making it likely but not certain that all individual questions would be covered. Furthermore, the route from an individual question to a research group is long. Although the National Science Agenda resembles the science shops on some levels, such as the principle of answering every question and the goal of influencing research on a longer term, both the criteria and the process make it remarkably different from the science shops.

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<sup>242</sup> Nationale Wetenschapsagenda, <http://www.wetenschapsagenda.nl/faqs/>, consulted 15-8-2017.

<sup>243</sup> Nationale Wetenschapsagenda, ‘Dutch Research Agenda’ (video), <https://www.youtube.com/watch?v=Q8QAL8yFI3w>, consulted 9-8-2017.

<sup>244</sup> Nationale Wetenschapsagenda, <http://www.wetenschapsagenda.nl/faqs/>, consulted 15-8-2017.

<sup>245</sup> Koninklijke Nederlandse Akademie van Wetenschappen, ‘Elfduizend vragen in perspectief. Rapportage jurering Nationale Wetenschapsagenda’ (5 June 2015), <http://www.wetenschapsagenda.nl/wp-content/uploads/2015/06/elfduizend-vragen-in-perspectief-5-juni-2015.pdf>, consulted 9-8-2017.

<sup>246</sup> Nationale Wetenschapsagenda, <http://www.wetenschapsagenda.nl/faqs/>, consulted 15-8-2017.

The National Science Agenda did cooperate with the science shops: some of the science shops offered *Vraaghulp* (Question Help) for submitters, to stimulate the questioners to formulate their question more exactly or to find out whether their question had already been researched somewhere.<sup>247</sup>

With the (renewed) interest in public engagement in the process and orientation of scientific research, science shops have drawn attention from policy makers. In the 2014 'Science Vision 2025', a report by the Ministry of Education, Culture and Science, science shops were presented as a way to increase the contact between science and society. Science shops were mentioned as one of the ways to make science more visible and to increase the understanding of the scientific process, together with, for example, online courses, museums, exhibitions or lectures on television.<sup>248</sup>

At Leiden University, where the science shop had been closed in the 1990s, it was suggested in 2017 that the science shop could be re-installed again, during a symposium on 'Leiden as an international city of knowledge'. At this symposium, representatives of higher education institutions, the municipality and other partners of the city came together to set an agenda to improve their cooperation and knowledge production in Leiden. One of the points for the agenda was for the science shop to return as an "ideal way to bring residents [of Leiden] and students closer together."<sup>249</sup> It was even suggested that the shop could either have a digital form or a physical one, as long as it would be easy to find.<sup>250</sup> The idea was coined by the Rector Magnificus of Leiden University and supported by the Vice President of the university's board of directors.<sup>251</sup>

## Conclusion

While the activity of science shops in the Netherlands has decreased in the past two decades, the same cannot be said for science shops worldwide. The international science shop network is still active. At the same time, advancing the social orientation of scientific research also happened through other means, for example on an individual level.

As opposed to the situation in which the science shops started, social themes nowadays play a bigger role in the university curriculum and research agenda, which is caused by the broader movement of which science shops were a part. However, the idea that universities should pay more

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<sup>247</sup> Nationale Wetenschapsagenda, 'Wetenschapswinkels', <http://www.wetenschapsagenda.nl/wetenschapswinkels/>, consulted 6-9-2017.

<sup>248</sup> Ministerie van Onderwijs, Cultuur en Wetenschap, *Wetenschapsvisie 2025. Keuzes voor de toekomst* (The Hague 2014), 45.

<sup>249</sup> Leiden Municipality, *Leiden Internationale Kennisstad* (Leiden 2017), 20, <https://www.lumc.nl/cen/att/80813053317221/1519038/kennisstad-magazine>, consulted 7-9-2017.

<sup>250</sup> Ibidem, 20, consulted 7-9-2017.

<sup>251</sup> 'Maak mensen duidelijk wat ze aan de universiteit hebben', 1-5-2017, <https://www.universiteitleiden.nl/nieuws/2017/05/maak-mensen-beter-duidelijk-wat-ze-aan-de-universiteit-hebben>, consulted 7-9-2017.

attention to social issues remains as other projects to engage a broader audience with scientific research have been organized. These projects, such as the National Science Agenda, were question-based, but in many ways different from science shops: questions came from curious individuals rather than from representatives of disadvantaged groups. Recent initiatives thus do not have the same element of empowerment that science shops used to have. Nevertheless, these initiatives together with recent suggestions to revive science shop activities show an undiminished interest in initiatives that engage the public with the process of scientific research.

## Conclusion

### Emergence of science shops

Both the emergence and the gradual disappearance of most of the science shops did not occur in isolation of political developments in the Netherlands. While the emergence of the shops can clearly be linked to political movements within Dutch universities, similarly, the gradual disappearance of most of the science shops in the Netherlands resonated with a political development towards a more neo-liberal environment. Science shops were established out of a desire to translate the need for democratization into practice. The shops were part of a broader movement that has been characterized as an 'age of reflection' on the social implications of science. It should be noted that this was not a movement with a fixed agenda.<sup>252</sup> Concerns ranged from the moral implications of science to the lack of science communication. The Dutch student protests of 1969 were targeting a lack of democratization within universities. Scientists organized themselves as well, in education initiatives on science and society (*Wetenschap & Samenleving*) and labour unions for scientists (the *Verbond voor Wetenschappelijke Onderzoekers* and especially the *Bond van Wetenschappelijke Arbeiders*). These initiatives were a novelty: according to Cramer, universities predominantly educated their students to become either researchers or teachers. The social relevance of research and academic training was largely absent.<sup>253</sup>

From the late 1970s onwards, science shops were spreading at Dutch universities, helped by a symposium and consultations between science shops of different cities throughout the Netherlands. The science shops of Utrecht University and the University of Amsterdam were organized in two different models. In Utrecht, science shops were divided by faculty. Although inspired by other science shop initiatives, the shops at the different faculties were established as separate institutions and not simultaneously – the humanities shop and the veterinary medicine shop, for example, were established when the chemistry shop had been operating for almost a decade. This meant that there were also differences between the shops in terms of political engagement: some of the earlier shops, such as the biology shop or the chemistry shop, had a more outspoken activist nature than for example the humanities shop. In Amsterdam, the science shop was operating as one single institute, although with a chemistry shop that operated operating apart from the central shop.

The cooperation between science shops can also be seen in the criteria that were formulated for client groups to apply to the shops. In the science shops throughout the Dutch universities, the

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<sup>252</sup> A. Rip, E. Boeker, 'Scientists and social responsibility in the Netherlands', 457-484, 462.

<sup>253</sup> Telephone conversation with Jacqueline Cramer, 23-8-2017.

clients were generally required to lack the (financial) means to conduct the research, to be non-commercial and to be able to use the results of the research for their cause.

### Difficulties of the science shops

In his 1988 personal account of the science shops in France, John Stewart listed a negative synergy of three main difficulties leading to the decline of science shops in France, after a short-lived period of successful operation in the 1980s. The first difficulty was the decreasing support from the government. The second difficulty was the big workload of the science shops because they needed to connect “fragmented bits of knowledge” from scientists who did not want to get involved in the political and social context of this knowledge. The last difficulty he mentioned was the lack of support from client groups, who lost interest when they discovered the limits of the effectiveness of scientific research for their cause.<sup>254</sup> Although a personal account, this negative account of the shops provides material for comparison to the situation of the Dutch science shops.

The first difficulty, decreased governmental support, applied to the Dutch situation from the 1980s onwards as well. Universities had to become more self-supporting, cooperating with companies and turning research into profit. The science shops, based on the concept of doing research for free, did not fit into this concept. This was also true for typical client groups, such as environmental organizations, which became increasingly professional. They did not need science shops or similar services to provide research anymore as they started to have their own financial means and expertise.

The shops depended on the support of the faculty they were part of and the research was mainly conducted by students, leading to reports of varying quality. Although not all faculty staff members were supporting the science shops, there is no evidence that science shop researchers in the Netherlands tried to distance themselves from the political and social implications of their work. A possible explanation for this is that, different from the shops in France, Dutch science shops had been established as student-driven, outspoken political initiatives.

The third difficulty mentioned by Stewart, a lack of support from the client groups, is not something that can immediately be applied to the Dutch situation. Clients did not always have appropriate expectations of what the science shop could do for them and the science shop often had the task of confirming something a client group already suspected or assumed to be true. However, this has not been described as an insurmountable problem for Dutch science shops.

Nevertheless, like the shops in France, there were other factors that made it hard for Dutch science shops to obtain a more permanent and institutionalized place within the university. Science shop projects made it possible to have some influence on university policy, but a wider influence on

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<sup>254</sup> J. Stewart, ‘Science shops in France: a personal view’, *Science in Culture*, vol. 1, no. 2 (1988), 52-74, 58-62.

the research agenda and study curriculum of universities proved to be difficult. Although science shop publications sometimes were positive about the influence on university policy, the science shops were mainly the expression of a broader development towards social relevance at universities.

According to Leydesdorff, the emergence of internet, which increased the accessibility of knowledge, has also played a role in the gradual disappearance of the shops. However, although science shops often did receive questions that could be answered by consulting existing research, questions were often centred around specific organizations and sites and therefore required new research that could not immediately be replaced by an internet search. Furthermore, the science shops in Amsterdam and Leiden were shut down in the 1990s before the use of internet was widespread. Nonetheless, the availability of information on the internet might have played a role in accelerating the disappearance of science shops in the last two decades.

The developments in Dutch science policy in the 1970s and the 1980s seem to oppose each other. In the 1970s, universities tried to engage with society by focusing on social relevance and science ethics. The science shops were a product of this mode of engaging with society. In the 1980s, the university's means to engage with society shifted towards self-sufficiency and cooperation with companies. Baneke argues that science policy in both periods was directed against the idea of the scientist in the 'ivory tower', distanced from the rest of society and without taking social responsibility. This development was necessary to manage the university's post-war growth.<sup>255</sup> Another related development is the end of the almost unconditional funding of fundamental research that characterized the early years of the Cold War.<sup>256</sup>

The development of the science shops also mirrors a political shift. When the first science shops were established, a Labour Party-led coalition led the country, but in 1977, a coalition between the confessional-liberal coalition was installed.<sup>257</sup> In 1982, the Cabinet-Lubbers came to power, taking on the task of cutting government spending and centralized tasks.<sup>258</sup> During this development, the social-democratic movement disintegrated and the bond between the labour movement and the Labour Party loosened.<sup>259</sup> Parallel to the increasingly difficult position of the science shops in a more market-oriented environment, the Labour Party changed its ideological underpinning. 1986 marked a turning point for the party, following a failure to become part of the government coalition despite good election result. This caused the Labour Party to become increasingly pragmatic in its politics,

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<sup>255</sup> D. Baneke, 'Sterrenkunde na Oort. De veranderende bestuurscultuur in wetenschap en universiteit in de jaren zeventig en tachtig.', *BMGN - Low Countries Historical Review*, vol. 129, no. 1 (2014), 25-54, 52-53.

<sup>256</sup> D. Baneke, 'De vette jaren: de Commissie-Casimir en het Nederlandse wetenschapsbeleid 1957-1970', *Studium*, vol. 5, no. 2 (2012), 110-127, 111.

<sup>257</sup> P. Lucardie, *Nederland Stroomland. Een geschiedenis van de politieke stromingen* (Assen 2002), 73.

<sup>258</sup> *Ibidem*, 67.

<sup>259</sup> F. Becker, G. Voerman, *Zeventig jaar Partij van de Arbeid* (Amsterdam 2016), 173-178.



moving away from its ideological, socialist roots towards a synthesis of liberal and socialist politics.<sup>260</sup> This flattened ideological position became problematic after the national elections of 2002, when the party, after leading two government terms, lost votes and did not enter a new term.<sup>261</sup>

Science shops faced a similar problem with their ideological roots. When the environment in which the shops operated became less favourable towards the emancipatory goals of the shops, science shops had to reinvent themselves. Like the Labour Party, the relation between the shops and their ideological roots became hazier.

In the introduction I raised the question why science shops are no longer present at all universities in the Netherlands nowadays, despite the favourable environment towards socially relevant research. As I hope to have shown, there was not one development that caused science shops to close down. This can be seen in the temporal differences of the moments in which the shops closed down. There were various factors from the 1980s onwards that made the circumstances for science shops more difficult. The university reforms moved the research in a more commercial direction and made the study duration shorter, impeding students to complement their curriculum with science shop research. The university reforms alone were not enough to cause the science shops to close down. However, this was combined with factors like the lack of interest in science shops, which made the shops more marginal. Traditional client groups professionalized and were able to hire their own experts. Furthermore, the students after the generation of 'critical students' of the 1970s were less inclined to be politically active and work together with non-profit groups, which cannot be seen separate from the stricter policy on maximum study duration in the 1980s. In this light, the limited connection of the science shops to the existing curriculum, as shown in this study, will not have helped in keeping the shops viable. A final sign that the spirit for science shops was decreasing is the fact that there are no indications of substantial protests against the closing down of the science shops, whether in Amsterdam in 1995, Leiden in the late 1990s or Utrecht in the 2000s.

## Present

Not only influencing the university's research agenda and study curriculum proved to be difficult; the survival of the shops themselves was threatened from the 1990s on. There seem to be no clear common factors that explain the 'survival' of the current existing science shops at the universities of Groningen, Wageningen and Twente. In the case of Wageningen and Twente, the fact that the universities are agricultural and technical universities and therefore already more focused on application, or the fact that the science shops were organized in the centralized model, might have

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<sup>260</sup> Ibidem, 147-152.

<sup>261</sup> Ibidem, 155-157.

been beneficial to some extent. However, this does not account for the continuation of the decentralized science shops in Groningen as a broad university.

Compared to the environment in which science shops were established, social relevance of science is now more widely seen as a task for the university. This is seen in the valorisation centres or the requirement for social relevance in requesting research funding. It can be argued that science shops, as part of a broader democratization movement, made a contribution to this development. The notion of socially relevant science was limited when the science shops were established and has since become increasingly important in university research. Social relevance is nevertheless still dependent on how researchers fit social issues in an existing framework of research. Furthermore, cooperation with external parties seems to happen more as a commercial activity.

Recent initiatives, like the National Science Agenda or valorisation centres, help to fulfil a need for demand-driven research. However, the element of empowerment that characterized the early science shops has disappeared. This is partly because researchers are now more aware of social issues but also because non-funded research is hard to incorporate in a more market-oriented research climate. In his assessment of initiatives to increase the public participation of science, Irwin poses a series of questions for evaluating these kinds of initiatives. He states that it should be asked whether the initiative permits development and expression of wider social judgements concerning the credibility and trustworthiness of institutions, whether the role of the public group is that of knowledge generator as well as receptor, whether science is regarded as something apart from technical and social controversy and whether the form of public participation permits real policy change in governmental or industrial practice.<sup>262</sup> These questions can be applied to science shops on one hand and current initiatives on science and society on the other hand.

The individual questions that were posed at the National Science Agenda were gathered by a commission translating the questions into 140 questions that were suitable for future research. This method of the National Science Agenda makes a critical approach of institutions less likely than the method of the science shops, for example in the case of public health or worker's rights.

Regarding the second question, whether the role of the public group is that of knowledge generator as well as receptor, the role of the public as knowledge generator seems to have become rarer. As we have seen, there is cooperation between universities and external groups, but mainly as a business agreement in valorisation programmes. Apart from this, public groups are generally not involved in the creation of scientific research as knowledge generators.

Looking at Irwin's third question, the science shops were based on a notion of science being connected to its social context. As described in the fifth chapter, this notion has become more

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<sup>262</sup> Irwin, *Citizen Science* 84-85.

widespread since initiatives like the science shops and programmes on science and society have been introduced in the second half of the twentieth century.

The last question for evaluation, on the possibilities for policy change, can be applied to the science shops on a small level: research can lead to an improvement of the client's situation. However, on a larger scale, science shops have shown that it was difficult to foster significant change in terms of a more socially oriented research agenda and study curriculum at universities. This is perhaps not surprising: the research for many individual questions cannot plainly be translated into a broader agenda for research and education. For that matter, recently, centrally organized initiatives aligned with existing research groups, such as valorisation the National Science Agenda, seem to be more effective, by subordinating individual questions to a larger inventory of research topics. Nevertheless, where science shops have disappeared, their function of providing underprivileged groups with support in the form of research, has not been taken over by an equivalent initiative.

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## Appendix: Report of a telephone conversation with Jacqueline Cramer (23-8-2017)

Cramer vertelt dat haar werk voor de Wetenschapswinkel begon vanuit de beweging Biologie en Samenleving. Biologie en Samenleving hield zich bezig met het vermaatschappelijken van opleidingen, het reflecteren op de rol als wetenschapper en hoe dit in de praktijk kon worden gebracht. Opleidingen waren er destijds (1977) op gericht om studenten op te leiden tot leraar of onderzoeker: er waren weinig andere doelen bij de opleidingen.

Samen met anderen nam Cramer het initiatief voor een wetenschapswinkel, om meer vragen vanuit de maatschappij te beantwoorden. In Utrecht was er al een Chemiewinkel, waarna er een golf van andere wetenschapswinkels op gang kwam.

Op de vraag of wetenschapswinkels in hun opzet geslaagd waren, antwoordt Cramer dat het moeilijk was om onderzoekers te interesseren voor ad-hoc vragen vanuit de maatschappij. Daarnaast was er bij de wetenschapswinkels het probleem dat de onderzochte vragen vaak niet wetenschappelijk genoeg waren. Onderzoekers waren soms wel bereid om studenten te begeleiden in onderzoek voor wetenschapswinkels. Zelf onderzoek uitvoeren voor wetenschapswinkels deden ze selectief. Ze waren vooral geïnteresseerd in vragen die direct aansloten bij hun eigen onderzoek. In haar huidige positie als strategisch adviseur bij het Utrecht Sustainability Institute ziet ze een blijvend spanningsveld tussen wetenschappelijke onderzoeksterreinen en maatschappelijke vraagstukken. Er moet een match zijn met hun eigen wetenschappelijke onderzoek. Daarnaast stelt ze dat, hoewel ze zelf altijd interesse heeft gehad in maatschappelijke vraagstukken, je niet op elke vraag kan reageren. Het is nog steeds niet gebruikelijk in de wetenschap om maatschappelijk gemotiveerde vraagstukken te onderzoeken. Dit is alleen maar sterker geworden door de toegenomen publicatiedruk. Tegenwoordig is het gebruikelijker om te specialiseren in een onderzoeksveld waarin je al hebt 'gescoord'. Cramer merkt op dat het op hogescholen makkelijker is om maatschappelijke thema's te integreren.

Wat wel veranderd is, is dat onderzoekers en docenten (op universiteiten) meer oog hebben voor maatschappelijke vraagstukken. Ze laten masterstudenten bijvoorbeeld wel graag onderzoek doen naar maatschappelijk relevante thema's. Verder worden maatschappelijke thema's op een bredere manier meegenomen in onderzoek. Het beantwoorden van wetenschapswinkelvragen is vervangen door begrip voor maatschappelijke kwesties, die op een meer gestructureerde manier worden opgepakt. Dit gebeurt dan wel binnen het kader van een onderzoeksterrein. Ook wanneer masterstudenten onderzoek doen naar maatschappelijk relevante thema's, zijn theorieën uit hun onderzoeksveld leidend. Anders dan bij de (vroege) wetenschapswinkels, komen individuele actiegroepen minder snel aan de bak.

Actiegroepen kwamen vaak met concrete vragen naar een wetenschapswinkel, waarbij een gesprek nodig was om het verzoek te 'verwetenschappelijken'. De winkels hadden dus een functie om een vertaalslag te maken tussen de vragen uit de maatschappij en onderzoek, in een tijd dat onderzoek vaak nog geen link met de maatschappij had.

Tegenwoordig is die link er wel en dat is een verbetering. De tendens is toch om onderzoek te richten op maatschappelijke vraagstukken. Cramer noemt dit verheugend. Ondanks het feit dat er veel veranderd is, richt wetenschap zich echter nog steeds op specialisatie. Dat leidt tot een vernauwd blikveld. Volgens Cramer vindt vernieuwing veelal plaats aan de randen van een wetenschapsterrein en moeten we onze ogen openhouden voor kruisbestuiving tussen verschillende disciplines.

Geld is hierbij vaak een probleem, wat er toe leidt dat burgerorganisaties en actiegroepen minder mogelijkheden hebben om het onderzoeksterrein te beïnvloeden, aangezien ze vaak geen geld meebrengen. Bedrijven hebben dit geld wel.

De hoofdlijn is dus dat er vroeger geen maatschappelijke rol voor de universiteit was, de democratiseringsbeweging waarvan Cramer deel uitmaakte heeft dit ontwikkeld en daar hoorde een wetenschapswinkel bij. Tegenwoordig heeft de universiteit die maatschappelijke rol wel, maar alleen mits gekoppeld aan een onderzoeksveld.