



RETHINKING INNOVATION. TOGETHER.

THE SPARKS' HANDBOOK

A guideline of innovative formats
for participatory activities & more

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OPTIONAL
ACTIVITY:
POP-UP
SCIENCE SHOP

FACT SHEET

GENERAL DESCRIPTION

Science Shops mediate between citizens, citizen groups and research institutions. 'The Pop-up Science Shop' in Sparks refers to the way civil society's requests and problems can be transferred into a research setup and be linked to experts in Sparks' local partnerships. Citizens are called clients, in the context of the "shop". The methodology is described for 3 different levels:

- * **Sparks Level A** describes the minimum activities and results expected from applying the Science Shop methodology during the exhibition period.
- * **Sparks Level B** is expected to be initiated and implemented during the exhibition period together with local experts/local community of practice.
- * **Sparks Level C** is when research stemming from Pop-up Science Shops in Sparks is likely to last beyond the project's lifetime.

PARTICIPANTS – TARGET GROUPS

The activity is not connected to a specific event but runs throughout the whole exhibition period. All visitors of the exhibition – and an even broader audience, depending on the media activities of the local organiser – will be asked to express their requests, needs and concerns. This may include: citizens & local associations, researchers and scientists, local experts, students, policy makers, administration and civil servants, technical experts, SMEs, business people.

RRI CONTEXT

Science Shops can be seen as valuable and experienced actors to bridge the gap between research and society and mediate mutual learning and cooperation processes. Engaging different groups and organisations in dialogue and development processes reflects the idea of responsiveness and diversity. The research question development is based on anticipation, reflection, adaptation and reflectivity. The openness and transparency are obvious rules in outcome dissemination.

EXPECTED OUTCOME

Questions, concerns and requests from citizens, civil society organisations (CSOs) and other stakeholders are rephrased into topics and questions to be worked on or processed in scientific research. Researchers or students under the supervision of a professor then perform the research. The research will lead to a report (or other product) which is made public and will be of use to the client.

PREPARATIONS

- Mention the project's interest in generating research questions from visitors, or people that take part in its participatory activities.
- Introduce the idea of the Science Shop methodology and its possible impact in the local community.
- Emphasize the chance to express research needs, concerns or requests
- Develop new or customize existing tools for collecting open questions, requests and concerns from visitors and participants of the project.
- A facilitator to underline the opportunity to express requests.
- Calculate the time to convince possible local partners to cooperate already when developing local partnerships.

RESEARCH QUESTION DEVELOPMENT	<p>The 'intake' of the question is very important – finding out the question-be-hind-the-question, checking what information or hypotheses the persons asking the question may already have (Sparks Level A).</p> <p>Select, edit, and translate questions or topics to be further elaborated.</p> <p>In an initial meeting, the research objectives and time frame are agreed, expectations managed, and sources of knowledge identified. The CSO participates in the sounding-board of the project (Sparks Level A).</p>
EXPERTS	<ul style="list-style-type: none"> • To find a supervisor and a researcher/student, you have to promote the idea of piloting or experimenting with participatory approaches. • Find researchers to participate and create commitment. They should be invited to join the local group of experts (Sparks Level B-C).
FORMAT IN NUMBERS	<p>It varies, depending the scope of the question.</p>
VENUE	<p>Create a contact point for visitors to ask/place their questions/concerns/requests and provide a venue for a meeting with clients, researchers and stakeholders to further discuss their issue.</p>
CATERING	<p>No catering needed – although it's nice to offer a coffee when you invite the client to your office.</p>
RESOURCES	<p>Staff: One contact person from the local organiser as mediator of the process and students or researchers working on the research question.</p> <p>Equipment: Collect questions through a blackboard or a pinboard where participants either fill in a form or freely express their topic. Setting up a letter box or just providing a telephone number or e-mail address might work as well. If appropriate, make use of online dialogue tools developed for the exhibition (Sparks Level A).</p>
TYPICAL TIME FRAME	<p>When running the Science Shop activity from level A to C embedded in an already working infrastructure, projects may be set up in a time frame of about 3 months, though the availability of students may prolong the time frame by another 6-12 months.</p>
RUNNING THE EVENT	<p>Pop-up Science Shop Level A: Organise a first meeting with clients to understand the problem and shape the research question. Organise a second meeting with clients and local experts and stakeholders to work out a final shape of the research question.</p> <p>Pop-up Science Shop Level B: Find a researcher/student: 6 weeks of research or longer should be planned for working on the questions, depending on the problem/research question. Organise follow-up meetings with clients, local experts and stakeholders to update on process, reporting and dissemination. Present your results and evaluate your outcomes and findings.</p> <p>Pop-up Science Shop Level C: Support clients in implementing results and recommendations. Formulate follow-up actions and run an evaluation .</p>
	<p>There are 6 Appendices at the end of this chapter, with templates and examples that will be useful to have a meaningful Pop-up Science Shop experience.</p>

LET'S BEGIN FROM THE BEGINNING

Using this participatory activity in Sparks allows for a limited in time experimentation on how new and different approaches in research-society communication and interaction can be combined.

With the term 'Science Shop' we will refer to the methodology, the way civil society's requests and problems can be transferred into a research set up and be linked to experts in Sparks' local partnerships. Public Participation in Research through a Pop-up Science Shop is based on Science Shops' methodology of transferring requests from community groups to research organisations.

Local organisers that choose this activity will identify researchers willing to cooperate — meaning reading the questions received and reflecting on how to process them — as well as create commitment to ensure that they are formulated as research questions, transferred to researchers and followed up until a certain time after the activity. Using this participatory activity in Sparks allows for a limited in time experimentation on how new and different approaches in research-society communication and interaction can be combined. The Science Shop 'pops up' only for the duration of the exhibition.

A major requirement of the Sparks project is to facilitate discussion, prompt reflection, pose questions and share insights and opinions. The project does not want to create an oppositional debate with right and wrong answers or to reduce complex issues into simple facts and figures nor to develop an organisational structure for this mediation process within a research organisation. It is intended to enable people to comment and participate in ways that acknowledge the complexity and subtlety of the issues they are engaging with.

Thus the exhibition subject allows many important and pertinent questions to be raised – social, political and ethical – with regards to how the medical sciences are practiced, how innovation is encouraged, and about who is involved in the research process.

Sparks' Pop-up Science Shops aim at encouraging citizens to actively participate in science by formulating research requests and initiating the dynamics of community-based research to translate citizens and other stakeholders' issues into research questions, mobilising them to feed science and research with their real needs, expectations and ideas.

The Pop-up Science Shop activity will feed, complement and extend the exhibition, also providing experiences for Science Museums and Science Event organisers to engage with the general public at a deeper level.



More information about Science Shops at www.livingknowledge.org or more detailed in the Science Shop [Toolbox](#) offers a series of documents for download.

This brings together [relevant documentation](#) on Science Shop procedures, processes and guidelines, including:

- A - Community Based Research
- B - Science Shop Administration
- C - Public Awareness
- D - Preparing a Science Shop project
- E - Carrying out a Science Shop project
- F - Writing / Publication of a Science Shop Project

Science Shops as a way of transferring knowledge are innovative and effective and have a positive impact both on research and on civil society. They mediate between citizens / citizen groups and research institutions. These days many but not all Science Shops have structural links to universities and use the work of students under appropriate supervision to respond to the needs of civil society (mostly NGOs). This provides a symbiotic relationship between these two communities.

Science Shops operate under different names and in different ways throughout Europe and worldwide. What they share is that research is done on the basis of concerns of civil society, and that projects are governed in a partnership between civil society organisations (CSOs) and research institutes.

Science Shops as a way of transferring knowledge are innovative and effective and have a positive impact both on research and on civil society.



An example:

MISSING A PILL: SKIP IT, OR CATCH UP?

Pharmacists often find it hard to say whether a missed dosage should be compensated for or not. Students did research on a number of different medicines, for e.g. epilepsy, diabetes, asthma, cholesterol, pain, and more. Six articles were published.

(Science Shop Pharmacy, Groningen)



You will find more thriving examples in Appendix 6, at the end of this chapter!

SCIENCE SHOPS AND RRI: AN OVERVIEW

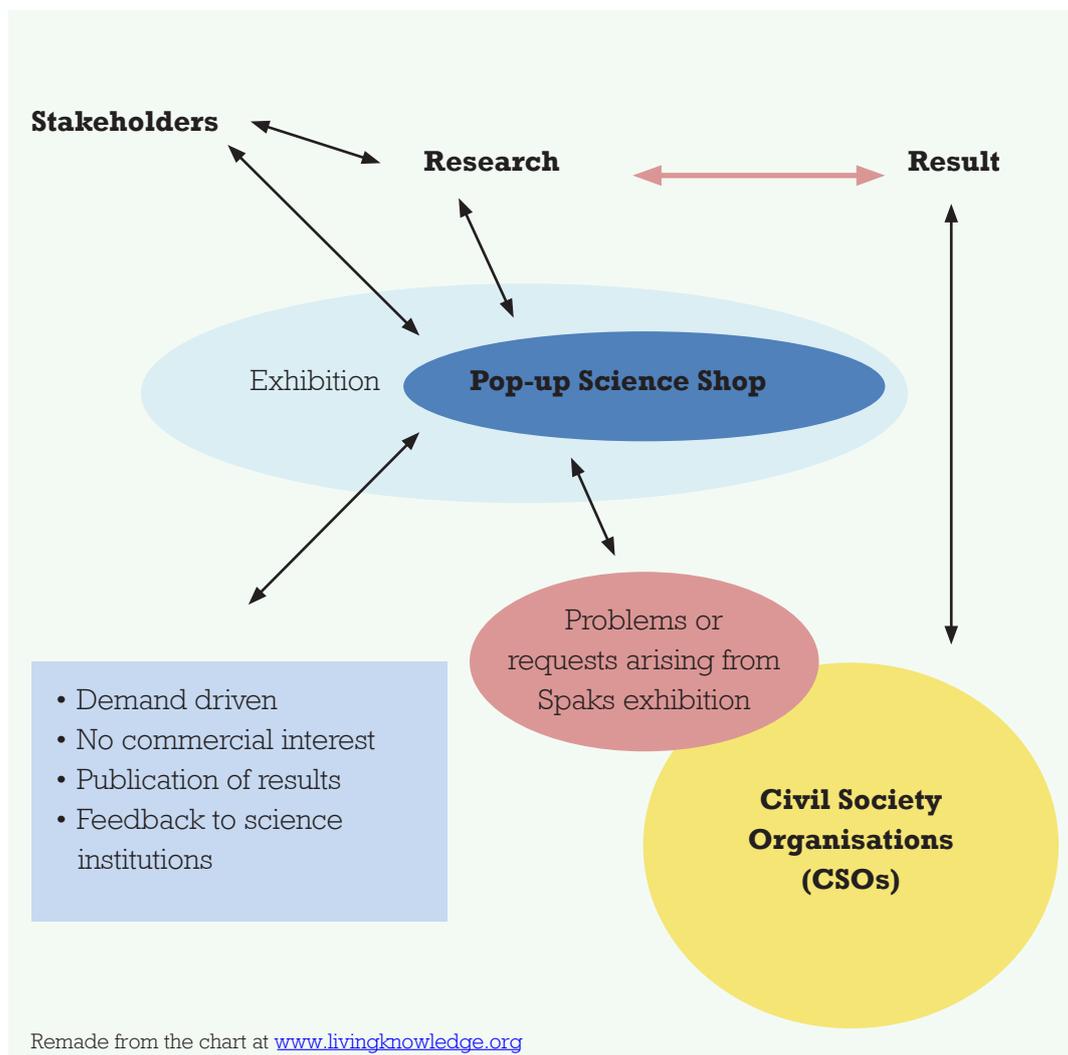


SETTING A SCIENCE SHOP

A Science Shop (is a unit that) provides independent participatory research support in response to concerns expressed by civil society.

CSO members can participate as a researcher themselves, or the CSOs perform the whole research, with some methodological support from researchers. Through Science Shops, CSOs have a direct say on the course of the research (or 'the research agenda') and are allowed full access to and use of the results.

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In setting up projects, existing research results will be discussed with all relevant stakeholders prior to starting the new research. Some questions from CSOs can also be initiated by their concerns about previous research findings. Also, after the research is concluded, its results are discussed. The researchers benefit from the contextual knowledge of the CSOs as well; thus, there is an interaction and joint development of new knowledge.

There are some general criteria for accepting a request that usually apply:

- There must be a scientific element in the request/problem
- It needs to be of general public interest, or the question must be relevant to a number of people
- The client is able to use the results
- The results have to be published
- There should be no commercial interest driving the request

EXPECTED OUTCOME

It is expected that numerous raw and un-edited and un-translated questions and requests will be received, through follow ups from the different participatory activities, such as the Reversed Science Café, the Science Espressos, the exhibition itself or the exchange within the local partnerships.



Announcing through your local communication channels that there is an opportunity to submit questions during the exhibition might lead to input as well.



At least 10 questions should be further elaborated with clients.

Please keep in mind to communicate to clients if and why it was not possible to consider their questions for prompt research. Discuss options for further processes after the exhibition or project period.

At least 2-3 questions should be processed through a research and their results reported.

THE MAIN ASSUMPTIONS OF THIS METHOD

- Questions, concerns and requests from civil society organisations (CSOs) are rephrased into topics and questions to be worked on or processed in scientific research.
- A researcher or student, under supervision of a professor, then performs the research.
- The research will lead to a report (or other product) which is made to be of use to the client.

In the following the methodology is arranged and described in 3 different levels of implementation:

* **Sparks Level A** describes the minimum activities and results expected from applying the Science Shop methodology during the exhibition period.

* **Sparks Level B** is expected to be initiated and implemented during the exhibition period together with local experts / local community of practice. The time needed to fulfil these steps might need to be continued after the exhibition period.

* **Sparks Level C** activities are not expected to be performed during the Sparks project period. Research stemming from Pop-up Science Shops in Sparks is likely to last beyond the project's lifetime. Nevertheless, if Sparks is intended to be the test field for pilots on new ways of engaging public audiences in a wide-ranging conversation around the medical sciences and about wider public involvement in the research and innovation process, it is clearly recommended to continue with and finish Level C activities.

SPARKS LEVEL A*

- Receive/solicit clients and (societally relevant) questions
- Together with client, articulate the problem (map the situation)
- Perform preliminary research as to whether the question is already answered somewhere, or if there is any societal relevance. This preliminary research then will lead to a refusal or a reference, a short advice for the client or and uptake as scientific research question

SPARKS LEVEL C*

- Support your client in implementing the research results and give recommendations and/or formulate follow-up actions (stakeholder meetings, legal procedures, conferences, follow-up research proposals)
- Make an inventory of possibilities for follow-up research or new research themes (options for scientific publications, interesting themes for further research (programs))
- Evaluate the process (with student, supervisor and client)

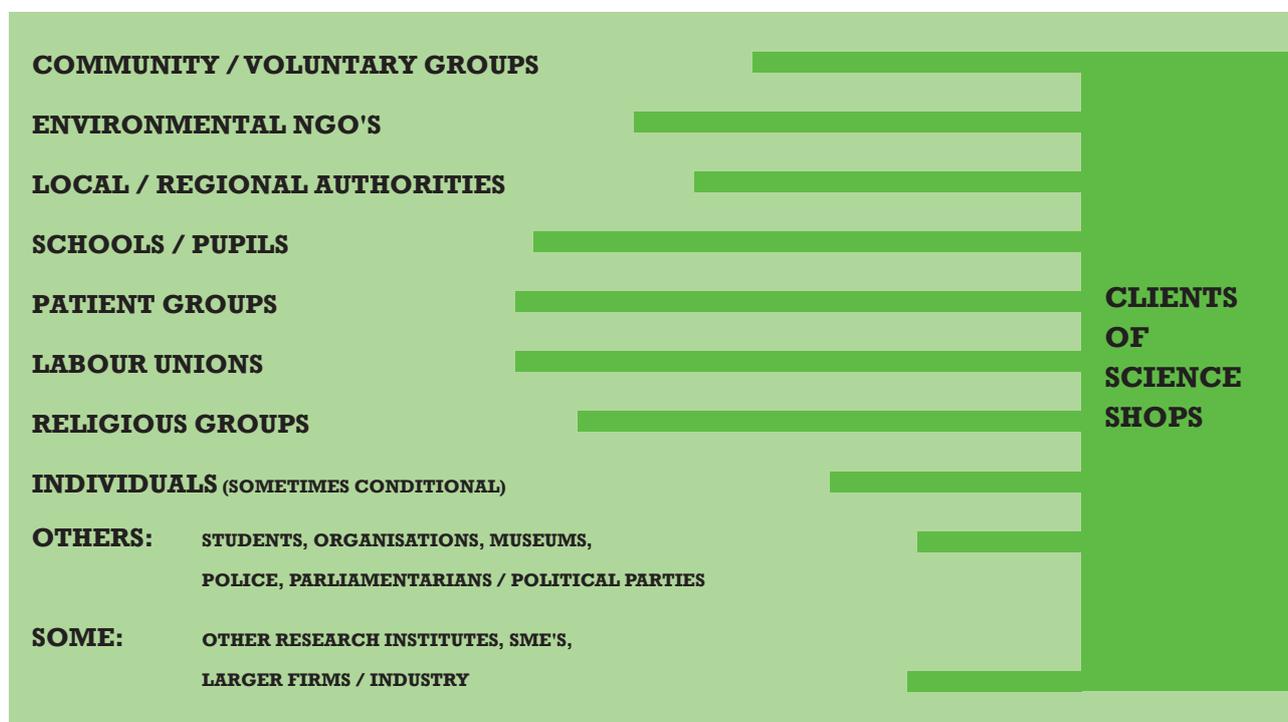
SPARKS LEVEL B*

- Find a scientific (co-)supervisor and/or suitable course/practical/thesis period at your local university of partnered research organisation
- Find a student (+ options for credit points) or researcher (+ funds if required)
- Maintain the communication and process, from the start to the end of the research process
- Facilitate a useable presentation/publication of the results (popular report, brochure, website, seminar, press release, etc.)



To answer many questions or questions that are less easily transferred into a research project is to give a scientific opinion or reflection from a certain angle on the question. This can be done instead of doing actual research, if time or supply of research capacity is unfavourable, or if the question does not lend itself to research, for instance because it is too broad.

The University of Groningen has done so in a project to answer [400 questions in 400 days](#), as a step-up to their 400 year anniversary



Remade from the chart at www.livingknowledge.org

GETTING READY

Science shops need preparation time to identify researchers willing to cooperate (means to read the questions and think about how to process them). It is necessary to create commitment here not only to create the questions but also get them into researchers' hands (for the period of the activity of the Pop-up Science Shop and a certain time after).

CHANCES AND OPPORTUNITIES OF THE SCIENCE SHOP METHODOLOGY

- Researchers facilitate the scientific approach
- Researchers produce (neutral) knowledge
- Researchers teach and educate
- Researchers have access to better resources
- Researchers have a better state of knowledge
- Researchers stand for systematic analyses, sceptical attitude, accountability, independency
- Funding awards are more and more depending on a flow of information to the public
- Addressing the public has become more popular with researchers
- Science Shops are ahead of researchers in addressing the public

(Please see Appendix 6)

STEPS TO BE UNDERTAKEN (SEE ALSO APPENDIX 2):

- Contact your local partners (Sparks Level A-B).
- Explain the idea of Sparks, the exhibition and its topics and which role you and your institution have in this project (Sparks Level A-B).
- Mention the project's interest in generating research questions from questions and problems expressed and experienced by visitors who come to the exhibition or take part in its participatory activities (Sparks Level A-B).
- Introduce the details of the idea of the Science Shop methodology and what impact it might have in the local community (you can ask for support material from Bonn Science Shop, livingknowledge@wilabonn.de) (Sparks Level A).
- Emphasize the chance to express research needs, concerns or requests and introduce this opportunity to your local community groups (e.g. patient's groups, health insurance companies, health service suppliers as well as community administration or researchers). This should also be mentioned in your promotional material for the exhibition. Develop new or customize existing tools for collecting open questions, requests and concerns from visitors and participants of the other project activities such as the Reversed Science Café, the exhibition itself and the Science Espressos (Sparks Level A-B-C).
- This can be done through a blackboard or a pin board where participants either fill in a form or freely express their topic. Setting up letter box or just providing a telephone number or e-mail address might work as well. If appropriate, make use of online dialogue tools developed for the exhibition. (See Appendix for a form to collect questions and suggestions) (Sparks Level A).
- A facilitator during the participatory events (Reversed Science Café, Science Espresso) can help to underline the opportunity to express requests. But please consider (and make clear) that this is not primarily intended to be about brainstorming about problems on the meta-level, but taking up real life problems and developing solutions for them.
- Make sure that participants understand that they have to provide contact details for their request to be further processed (Sparks Level A).
- The 'intake' of the question is very important, finding out the question-behind-the-question, and checking what information or hypotheses the persons asking the question may already have (Sparks Level A).
- Select, edit, and translate questions or topics to be further elaborated. This can be done also with the local group of experts or with the Sparks steering group. For the following process it might help to select questions according to the expertise of researchers willing to cooperate (Sparks Level A).
- To find a supervisor and a researcher/student, you have to promote the idea of piloting or experimenting

with participatory approaches for linking civil society and its concerns and questions with research resources (Sparks Level B).

- Find researchers (from health sector, but not exclusively) to participate. They should be invited to join the local group of experts (Sparks Level B-C).

The 'ideal' local expert to cooperate with when working with the Science Shop methodology:

- Has knowledge on health related topics
- Shows openness to questions from citizens
- Has the skills to reformulate the problems expressed into research questions
- Has access to research facilities
- Is able to involve students
- Is willing to supervise students

- Hold face-to-face meetings with the CSO or person that submitted the chosen question and the researcher willing to work on the issue to articulate the research question and define the required expertise and time frame (Sparks Level B-C).
- Maintain communication and process during research – including beyond your exhibition period (Sparks Level B-C).
- Facilitate a useable presentation and/or publication of results (Sparks Level B).
- Remember to evaluate your activities (Sparks Level C).
- If possible, help the CSO/client to implement results and formulate follow-up actions (Sparks Level C).

- Create commitment (Sparks Level B-C).
- Please keep in mind to communicate to clients if and why it was not possible to consider their questions for prompt research. Discuss options for further processes after the exhibition or project period (Sparks Level B-C).
- Set up a calendar for initial and feedback meetings and agree on communication channels with CSO and researcher (Sparks Level B-C).

WHAT IF...?

- *What if ... a problem is urgent but too complex?*

With complex research questions or topics it can sometimes help to either split the question in smaller parts for various research proposals, or to enlarge the question to tackle the problem in its broader context (by which it gets more interesting for research and fulfils more learning experiences for students; i.e. include more theory).



Visit livingknowledge.org

- *What if ... too many questions are submitted?*

The top priority of the Pop-up Science Shop in Sparks is to collect questions from visitors of the exhibition which can be transferred into research activity. One option for answering many questions or questions that are less easily transferred into a research project is to give a scientific opinion or reflection from a certain angle or perspective on the question. This can be done instead of doing actual research, if time or supply of research capacity is unfavourable, or if the question does not lend itself to research, for instance because it is too broad. This was done, for example, in Groningen university's project to answer 400 questions in 400 days.

- *What if ... the research takes too long for the intended period of activity in Sparks?*

The research can also be done outside of the project activities. Be aware that conditions might apply that can't be influenced by the project management (researchers are under time pressure and/or not used to target solutions or practical use, student work might be voluntary, the academic year might not fit into the exhibition period, or examination schedules might not fit into project time schedule).

ARGUMENTS TO CONVINC LOCAL EXPERTS TO COOPERATE

Enhanced learning for students:

The student will have gained valuable skills (problem definition, project based working, communicating, planning).

Case materials/networking for researchers:

The professor and/or the researcher will have case material for either direct publication or further theoretical analysis. Moreover, for the professor involved this supervision is part of the teaching obligation.

So, in fact all actors are doing what they are supposed to do: teaching, learning and researching. This is why the Science Shop Methodology can be implemented at relatively low additional costs.

When experimenting with the Pop-up Science Shop, consider how it will connect to *all* existing policies and strategies in the research organisation.

PR and social responsibility for institute:

Taking up societal needs underlines the social responsibility of the research institute and can be used for Public Relation activities and outreach. Argue that Science Shops meet the needs of HEIs (curriculum development, student skills and employability, research impact, science communication, and societal needs) in a cost effective way.

BOTTLENECKS AND PROBLEMS WHEN CONSIDERING SCIENCE SHOPS

- Researchers are under a constant time pressure
- Classical research has to lead to publications
- Most of the Science Shop projects contribute “only” to “grey” literature
- Projects might be seen as based on a practical problem rather than on a scientific problem
- Smaller projects are not attractive – universities are more interested in “big projects” with a high amount of external funding and co-operation with companies and governmental institutions
- Researchers generally only describe problems and do not target solutions or practical use
- Researchers speak their own language
- Researchers often have trouble keeping to time schedules
- If students do not get credit points for the research, they will have to do it as a voluntary project
- Students as researchers have their own ‘timelines’ and obligations
- Students are allowed to make mistakes

STRENGTHS WHEN CONSIDERING SCIENCE SHOPS

- Working on real life problems allows for enhanced learning for students
- The questions and requests deliver case materials/networking possibilities for researchers
- Working on community problems supports the PR of the research-performing institute and demonstrates its social responsibility
- The CSO can have varying degrees of involvement in the research process.
- The research can be done in the curricula, so there are low costs.



Helpdesk for local organisers through Living Knowledge Network (via WilaBonn, norbert.steinhaus@wilabonn.de, livingknowledge@wilabonn.de), Training available at Living Knowledge Summer School in June 2016 in Dublin (additional trainings to be confirmed), Mediation of contacts to researchers (or students) through local organisers

APPENDIX I: SUBMIT A QUESTION

Please fill in this form (Individuals don't have to answer questions 2-4). You can either leave this form at the exhibition desk or send it to [enter address of local organiser]

The local organiser has to decide how to design this form and how to submit this form (e-mail, download from local organisers' website, postal address)

1. Contact person

Name:

Phone:

Email:

2. Organisation

Name of organisation:

Address:

Phone:

Email:

Website:

3. Which is the main field of activity your organisation is working in?

4. Please describe your organisation and its key objectives.

5. What is your question?

6. What's the context of the demand?

7. What is the expected outcome? How will you use the results?

8. Is there a deadline for the answer to your question?

No

Yes:

9. Do you have resources available to support the research on your question?

10. Do you agree that the results will be published?

Yes

No because:

11. Comments

Variation for submitting questions and leaving them on e.g. a pin board in the exhibition space (this e.g. can be supplied by the local organiser on prepared cards)

Your question – your comment

Please write some lines about the background and context of your question

If you want to be contacted, please leave contact details

**APPENDIX II:
SCIENCE SHOP PROJECT MEDIATION PROCESS**

Project phase	Description	Process	Process	People
Initiation	Client and Science Shop communicate about potential request. Intake	Intake question	Written request	P, C, A
		Match with project - coordinator	Project number, dossier	P, C
Definition	Request will be framed and articulated. Intake meeting. Check with criteria for Science Shop projects. First thought about project results and dissemination.	Intake meeting	Report of meeting	
		Brainstorm on project results and dissemination	Overview contacts, ideas and options	
Concept	Preliminary research to assess research needs, options and opportunities	Scientific exploration of research options, including through literature review and expert judgements	Report of preliminary research and basic information (literature, experts and networks)	P
		Check for research options in the curriculum, recruitment of scientific supervisor	Scientific supervisor	P, S
		Preparation of draft project proposal	Draft project proposal	P, C, S
Preparation	Preparation of documentation and contacts to start the research	Recruitment and selection of researcher	Researcher(s)	R, P, S
		Discussion (and modification) of project proposal	Project proposal (incl. planning)	R, P, C, S
		Discussion of project conditions (costs, time frame etc.)	Agreement (including conditions)	R, P, C, S
		Discussion project expectations	Project proposal (including students motivation)	R, P, C, S

Project phase	Description	Process	Process	People
Realisation	Conducting the research and writing a final report.	Progress meetings	Progress reports	R, P, C, S,
		Reporting	Draft project report	R, P, C, S,
		Final Report or other product Editing and layout Reproduction	Final Report or other product	R, P, A
Finalization	Publication and dissemination of project results. Evaluation of project process and results	Evaluation (process, content, usability), assessment of student, publicity, dissemination and follow-up	Evaluation report, mark for student	R, P, C, S
		Publicity	Press release or other announcement in media	R, P, C, S, A
		Finalizing project files	Dossier cleaned and closed	P, A

A = Administration Science Shop

C = Client

P = Project coordinator Science Shop

R = Researcher (student or paid)

S = Scientific supervisor

APPENDIX III: PRINCIPLES OF SMALL-SCALE RESEARCH

Applied research on the small-scale with limited resources works well through a model of partnership with the service provider. How that partnership is worked out in practice leaves room for negotiation and for applying different models of collaboration and participation in the research. These 10 key principles can be elucidated as guidelines for the process:

1. Partnering

The research is based on collaboration between equals – researchers and organisation members. The relationship is one of mutual benefit. The research is conducted by negotiation, with respect being given to organisational goals and ethos and to the needs of the researchers and the researched.

2. Researcher's role

The researcher's role is largely that of an independent consultant, but with the flexibility to become a participant when the study requires this. The role involves collaboration with stakeholders to ensure that their interests and priorities are covered within the study.

3. Research for development

Because of its limited scale, small-scale research is less concerned with impact according to quantitative/monetary standards, and more concerned with service improvement through recommendations for manageable change.

4. Research for use

The research is designed to be used by an organisation to change its practice. It is not primarily evaluation for theory, and it is not research which exploits an organisation to collect data for academic publications without benefit to the organisation.

5. Ethics

The research should involve ethical decision-making through all its stages, with due adherence to professional codes and guidelines, and sensitivity to the resolving of dilemmas.

6. Scale

The research is small-scale and conducted usually in one or two locations, often with a small team of researchers providing feedback on the experience of a program, from the viewpoint of stakeholders. Feasibility studies in local neighbourhoods can also be conducted to help with service development. The research will be conducted over the course of a few months, usually by part-time researchers.

7. *Resources*

Monetary resources from organisations are likely to be limited to expenses (where students or volunteers are involved) along with the provision in kind of office space, computer access, photocopying or printing facilities, where these are available. The researchers provide research expertise and communication input.

8. *Rights to the report*

The details of rights to the report need to be covered in the negotiations, but broadly the organisation would normally receive the report with the right to disseminate it in full or part (with acknowledgement of authorship). Researchers and student supervisors should retain publication rights, which may include a proviso for informed consent from the organisation.

9. *Experiential learning*

The research should be a learning experience for all partners, with researchers acknowledging the expertise and wisdom of organisational members, and organisational members respecting the competency and knowledge of the evaluators. The research should be part of a reflective process, with researchers conducting their work with self-awareness and through regular contact with the people sponsoring the study.

10. *Students*

Where the research is being conducted by students, it will be assessed through clear criteria which have been made available at the start of the project. Students will have a right to regular supervision from their University and to support from the organisation. Students will be acting as representatives of the University in the community, and will conduct themselves appropriately. Students also have the right to a safe environment.

(Adapted from Hall I and Hall D [2004]. [Evaluation and Social Research](#), Palgrave Macmillan)

APPENDIX IV A: STATEMENT OF AGREEMENT

Hereby it is agreed that research will be conducted, in connection with the Sparks Pop-up Science Shop, a research is conducted.

The research design is based on an application submitted by: [name of the organisation] located at [street number, postal code, place], and represented by [name contact person] in his/her function as [function person], from now on referred to as <the client>.

The research will be carried out by: [name student], from now on referred to as <the student researcher>. He/she is a student of the [name research organisation] and will conduct the research in the context of the study programme: [...]

The research falls under the department: [name department], and is under the scientific supervision of: [name supervisor], from now on referred to as <the supervisor>.

For the Pop-up Science Shop, linked to the [name Sparks partner], [name] will act as a mediator.

The planned research period extends from: [month and year in which the research begins]; until [month and year in which the research is finished].

The student researcher hereby gives his/her permission to apply all property rights that are determined by copyright laws, including but not limited to: the reproduction of the resulting report/thesis, disseminating the results to the public and using them in a publication. The student receives no extra fee for this. The permission is not limited to any territory nor is it limited in time. However, acknowledgement of the author of the results is obligatory.

Any possible extension of the research or the expansion of the assignment will be the subject of an appendix hereto, approved and signed by all parties, and will come into effect on the date determined by the appendix in question.

The student researcher acknowledges and accepts that he/she cannot lay claim to any probably previously agreed fee if the research has not been finished and/or no research report (dissertation) has been delivered to the client and/or the dissertation does not meet the standards laid down by the university jury.

By signing, the parties below agree with the above provisions and also with the appendices that are an integral part of this statement of agreement

Agreed upon in [place] on [date]

For the student For the supervisor For the client For the Science Shop

APPENDIX IV B: AGREEMENT FOR RESEARCH

Sparks Pop-up Science Shop
[name of local organiser]
Applied Research Project

AGREEMENT FOR RESEARCH

The following is the outcome of a meeting on [date] between [name and organisation of contact person of Sparks partner], and [name(s)], students at the Department of [research organisation] and [contact name] of [CSO], [address], [telephone number & e-mail].

(All parties may comment on the agreement and if any section needs to be altered, a fresh agreement will be issued.)

1. **Project agreement**

between [name of student(s)]
and [name and organisation of contact
person of Sparks partner] and [contact
name] of [voluntary organisation].

2. **Duration of project:**

The project will run from _____
to _____:
fieldwork to be completed by _____
_____.

3. **About the organisation.**

[Name of organisation] is [insert brief
description]. It was established in [year]
in order to [insert brief statement of
aims and objectives]. It aims to provide
[services for clients etc., noting any
special characteristics, e.g. age, sex,
disability]. It is managed by [name
of manager] with the assistance of
[number of paid workers / volunteers],
and is funded by [names of grant giving
body or bodies].

4. **Issues identified:**

[Name of organisation] has identified
a need for research on [insert topic(s)]
in order to [evaluate services, feasibility
study, obtain funding etc.] for [type of
clients etc.].

5. **Proposed project:**

To [insert project objectives] by means
of [list of probable research methods
and information providers], and to report
on findings [with recommendations
(if appropriate)].

6. **Project outcome:**

[Name of student(s)] will produce a
report to be available in draft form by
[date] and in its final form in [date]. The
report will be word-processed. [Name of
organisation] will receive one copy of the
report and have the right to use and copy
the report as it wishes, with due acknowl-
edgement being made to the students
and to [name of research organisation].

7. Permission to reproduce the report:

The students and supervisor will have the right to use the report for academic publication, provided the [name of organisation] is first consulted, and has no objections.

8. Attendance:

[Name of student(s)] will commit [number of hours] per week to the project for fieldwork, analysis and writing reports.

9. Expenses:

The payment of travel expenses from the University to [place of research] will be provided by [name of organisation]. [Name of student(s)] will be responsible for keeping accurate records of all fieldwork journeys.

10. Supervision:

[name] will be available weekly for supervision throughout the course of the project. [Name of organisation contact] will be available for consultation by appointment during the fieldwork, and will expect to be consulted over questionnaires and interview schedules, and to be kept informed of progress.

11. Confidentiality:

[Name of student(s)] will respect the confidentiality of all information given and abide by the confidentiality procedures of [name of organisation]. Due attention will be given to the anonymity of informants, and the students will conduct the research in a sensitive manner.

12. Health and Safety:

The health and safety of students on placement is of paramount importance. [Name of student(s)] will on placement abide by and be covered by the health and safety procedures of [name of organisation], and the students will complete a safety assessment for fieldwork with the supervisor before engaging on their research.

13. Acknowledgements:

At any time when the report or any part of it is used, proper acknowledgement should be made to the students by name, to the [name of University] and to Interchange.

SIGNED

(Organisation)

SIGNED

(Students)

SIGNED

(Supervisor)

DATE

[A copy of this agreement will be sent to Sparks Partner]

APPENDIX V: PROJECT EXAMPLES FROM SCIENCE SHOP PROJECTS

Compiled by Dr. Henk Mulder in 2007-2010

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These examples give a broad over-
view of projects carried out by Sci-
ence Shops in the medical sciences,
natural sciences and engineering.¹

¹ - The overview is randomly-selected, incomplete and based on information available on the websites of the Science Shops. When longer information was available in English, this was copy-pasted into this document. Copyright for these summaries is with the publishing Science Shops. The overview was made in 2007; a few examples were added in 2010. These examples can be used to illustrate the type of projects that Science Shops can do. This document can be shared, but is not to be officially published externally.



A. PROJECT EXAMPLES: SOCIAL MEDICINE

a.1 LIVING WITH FACIAL PARALYSIS: WHAT IS THE QUALITY OF LIFE?

A patient's association wanted re-
search on quality of life factors for
patients with facial paralysis. A group
of 85 patients treated at the Plastic
Surgery Clinic was interviewed.
Most people were quite happy with
the results of their treatment, though
about 1/3 of the patients still avoid
certain social events. A large group
of patients developed a coping
strategy that enables them to enjoy
a good quality of life. This will be
further investigated to be able to
advise patients on different coping
strategies.

(University of Groningen/University Medical
Centre Groningen; Science Shop for Medicine
and Public Health)



a.2 GLUTEN INTOLERANCE AND DIABETES TYPE I

Gluten intolerance and diabetes type I often come together (genetic association). Nutrition plays a large role in both diseases. The Dutch Coeliac Disease Association (DCA) wanted research into the quality of life for both patients and their partners. A questionnaire was used. Practical and social limitations were most present. Female patients scored higher on GSRS (Gastro-intestinal Symptom Rating Scale) and DSC-r (Diabetes Specific Complaints). Both male and female patients scored relatively low on quality-of-life appreciation compared to other patient groups (6.7 (SD 1.7)). A large share of the female patients showed signs of depression (41.3%, based on CES-d Centre for Epidemiologic Studies Depression scale). Quality of life for partners is good. DCA can draw more attention to the position of these patients now. A similar question also addressed (in a previous project): should all patients with gluten-intolerance be screened for Diabetes type I as well? (There are still pros and cons, no definite answer).

(University of Groningen/University Medical Centre Groningen; Science Shop for Medicine and Public Health)



a.3 SOCIAL SUPPORT AND QUALITY OF LIFE FOR ADHD PATIENTS

The influence of social support on the functioning and the quality of life of people with ADHD (Attention deficit Hyperactivity Disorder); on request of Impulse – the Dutch patients association of adults with ADHD: Electronic and telephone survey; 105 respondents. Questions were taken from the AAQoL (Adult ADHD Quality of Life-Scale), expanded with other questions from existing questionnaires and own questions. Average appreciation is 6.8 (SD 1.9), which is below average. The research helps to create awareness for this patient group and its problems in daily life.

(University of Groningen/University Medical Centre Groningen; Science Shop for Medicine and Public Health; in co-operation with the Department of Sociology)



a.4
**GREEN IN ELDERLY CARE:
 WHAT IS THE SURPLUS VALUE
 OF NATURE PERCEPTION BY
 ELDERLY AND HOW IS THIS
 ORGANISED WITHIN CARE
 FACILITIES?
 MISSING A PILL:
 SKIP IT, OR CATCH UP?**

Pharmacists often find it hard to say whether a missed dosage should be compensated for or not. Students did research on a number of different medicines, for e.g. epilepsy, diabetes, asthma, cholesterol, pain, and more. Six articles were published.

(Science Shop Pharmacy, Groningen)

This report deals with the question whether nature perception can have a beneficial effect on elderly people. An inventory was made of what kind of 'green' activities are currently being organised within intramural care facilities. The research was conducted at the request of the Stichting Natuurlijk Genieten (SNG, literally 'Natural Enjoyment Foundation' although the name can also be read as 'Of-course Enjoyment Foundation'). This foundation advocates nature perception by elderly in hospital health care, which it does amongst other things by teaching courses for activity organisers and volunteers.

The foundation wanted to know whether the perceived value of nature perception by elderly can be supported scientifically. Also, they wanted insight into what kind of nature or green activities have been organised in the Netherlands. These two points were combined in the research question: What is the surplus value of nature perception by elderly and how is this organised within care facilities?

As a result, the project contained two focus points. The first investigated the surplus value of nature perception by elderly (75+ in hospital health care): whether this surplus value can be supported scientifically, whether it has been researched with a literature study.

The second focus point was an inventory of current initiatives in nature activities in care facilities. This inventory was made by doing telephone interviews with activity organisers of forty intramural care facilities (nursing and convalescent homes) across the Netherlands. The literature review showed that elderly people are in general more sensitive to their surroundings than younger people. Dementia, depression and loneliness are common within this group. Therefore, they could benefit from nature activities such as a special nature room within the facility, garden therapy and / or contact with animals. The

positive effects of nature activities can be divided amongst six categories: Memories; Fulfilment of social needs; Sense of self value; Stimulating senses; Curation; Gaining knowledge. These categories were used to process the results from the telephone interviews.

It turned out that 88% of the interviewed homes organised nature activities. The most common activities included flower arranging (95%), watching nature documentaries, walking (68%) and creating seasonal displays (60%). When such activities were arranged in the six categories mentioned above, it became clear that not all possible positive effects of nature activities were being exploited. For example, there were few activities organised that fell under the categories of 'gaining knowledge' and stimulating senses.

From the data collected in the literature review and the telephone interviews, it can be concluded that nature activities certainly do have important positive effects on the participating elderly. But, whether nature activities have a surplus value as opposed to other activities depends for the most part on the individual participant. Therefore, intramural care facilities are advised to offer both nature and other kinds of activities to the people in their

care. Activity organisers mentioned that they are in fact interested in information about the possibilities and effects of nature activities.

The report concluded with recommendations for future actions by the SNG. For example, the foundation could facilitate nature activities within care facilities by developing and maintaining a central database with (examples of) nature activities. The foundation was advised to continue the inventory of nature activities, so an overview of possible activities can in the future be supplied to professionals and volunteers who wish to organise these. Some practical questions have been added to the questionnaire that was used in this research project, to facilitate use by the SNG when collecting further practical information on nature activities that are of have been organised in the Netherlands. Suggestions were also made for additional broadening of the research field, such as conducting further research into the wishes of the elderly with regard to nature perception.

(Science Shop for Biology, University of Utrecht)



a.5 IMPROVED HEALTH CARE FOR ELDERLY IMMIGRANTS

Research has shown that the quality and the effectiveness of health care have been divided unevenly between immigrants and natives. Immigrants feel less healthy, have shorter consultations with general practitioners and they take more prescribed medicines than indigenous Dutch people. Nevertheless, requests for medical care by these migrants often end up with the wrong medical workers (doctors and nurses), which means that their request is not answered properly [Dutch Council for Health and Care, 1999]. The medical profession is gaining understanding that effective health care for immigrants requires adaptations, both in health education and in health care itself. This literature study aimed to answer the question how Homecare City Utrecht (Thuiszorg Stad Utrecht) can use health education to ensure that Turkish and Moroccan elderly can use the Dutch general health care adequately. To answer this question, the following research questions were phrased:

- For what reasons do Turkish and Moroccan elderly not yet use the Dutch general health system adequately?
- Which aspects should receive special attention when making health education for Turkish and Moroccan elderly?
- What is a suitable health education model for Homecare City Utrecht?

An answer to these research questions was found by combining a literature review with the gathering of information from organisations who are also working on health education for (elderly of chronically ill) immigrants. The problems that general health workers (doctors and nurses) experience when caring for immigrants are:

- Patient and medical workers often don't understand each other, or there are misconceptions because communication is problematic. This is due to a difference in their frame of reference.
- Immigrant patients often lack insight into the organisation of Dutch Health Care.
- Immigrants often have different expectations of health care. This is due to their experiences in their place of origin.
- here is a gap between the knowledge of the immigrant patient and that of the medical worker. This is caused by differences in world view.



To ensure that health education is effective, there will need to be more cooperation with other organisations dealing with chronically ill immigrant elderly. To improve effectiveness, it is advised to include the target group in the development of health education. When developing health education for immigrants, it is also a good idea to use the PEN-3-model. This model pays more attention to diverse culturally established determinants than the more widely-used ASE-model. From the PEN-3-model, it can also be deduced that the family of the patient should be included in the health education. But health education alone will not solve the problems. Doctors and homecare workers will also have to make adaptations to ensure that health care will be more accessible to the target group, for example by using interpreters, or by planning extra time for a consultation.

(Science Shop for Biology, University of Utrecht)

B. PROJECT EXAMPLES: MEDICAL STUDIES

b.1 EVALUATION OF BUTEYKO BREATHING TECHNIQUE

Buteyko is a breathing technique for asthma prevention and relief. This alternative technique was put to the evidence-based medicine test, on behalf of the Buteyko Centre Netherlands; through a critical review of the literature. There are suggestions for a possible benefit in the treatment of asthma (CO₂ possibly plays a role in the severity of asthma), but certainly not for its prevention. A sound scientific basis was not yet found in the published literature; a trial analysed was found to have methodological shortcomings and errors. Only after a better trial might this alternative technique gain wider recognition.

(University of Groningen/University Medical Centre Groningen; Science Shop for Medicine and Public Health)



b.2 **EFFECTIVENESS OF LASER TREATMENT FOR PSORIASIS**

Dutch and US protocols differ; in the Netherlands lasers are not used in academic hospitals. On behalf of the patient's association for psoriasis, the relevant literature was reviewed and recommendations were made regarding types of lasers and patient characteristics critical to the choice for laser treatment. The association can now further negotiate with Health Care Insurances and the Medical Authorities.

(University of Groningen/University Medical Centre Groningen; Science Shop for Medicine and Public Health)



b.3 **CONNECTIVE TISSUE DISEASES AND AUTO-IMMUNE DISEASES WITH WOMEN WITH SILICONE BREAST-IMPLANTS AND THEIR OFFSPRING**

A literature review was undertaken, at the requests of patients, to update the report of the Health Advisory Council (which was 5 years old) and check for possible new findings in the literature. A total of 17 studies were found and analysed. Ten studies did not find correlations, the others did point to associations but these were weak and their clinical implementations were not always known. No reason was found to challenge the previous findings of the Health Advisory Council.

(University of Groningen/University Medical Centre Groningen; Science Shop for Medicine and Public Health)



b.4
THE RELATIONSHIP
BETWEEN TRAFFIC RELATED
AIR POLLUTION AND
RESPIRATORY HEALTH AND
EXHALED NITRIC OXIDE IN
DUTCH SCHOOLCHILDREN

In recent decades there has been increasing concern about possible adverse effects caused by pollution from motor vehicle emissions. This study was designed to test the hypothesis that exposure to exhaust from traffic was related to childhood respiratory health. The study was requested by two citizens' groups that are concerned about possible adverse health effects due the nearness of motorways to their homes and schools of their children. Respiratory health was studied in children from 9 Dutch schools, situated within 400 meters of a motorway. Exposure to traffic-related air pollution was assessed by using specific traffic-related characteristics (individual car and truck traffic counts, and distance from homes and schools to highway). Data of respiratory symptoms were collected by parent-completed questionnaires and exhaled nitric oxide measurements were

collected by the offline-method. Further, outdoor air samples were analysed for air pollutants and in a preliminary laboratory test design the immunotoxic potency of these samples were studied. Respiratory symptoms were increased in children that live near motorways with high truck traffic counts; especially when mean weighted Odds Ratios were calculated by combining data from other similar Dutch studies. Nitric oxide values were higher in children with respiratory symptoms as compared to children without respiratory symptoms. Near motorways with high car and truck traffic counts, exhaled nitric oxide levels were higher. The results of this study demonstrate that high truck traffic counts in particular, are related to children respiratory health. Children attending schools near motorways with high traffic counts experienced more respiratory health problems and showed higher exhaled nitric oxide values than children attending schools near motorways with low traffic counts. The study was initiated based on two requests from different local groups of concerned citizens.

(Science Shop for Biology, University of Utrecht)



C. PROJECT EXAMPLES: PHARMACY

c.1 EARLY-DEAF PERSONS AND DRUG INFORMATION

For early-deaf people, Dutch is like a foreign language; especially for those that also have a mental disability as well (double handicapped). The science shop for pharmacy developed, together with the science shop for language and communication, visual aids for this specific group of patients, often living in 'shared homes'.



General Practitioners were a bit reluctant at first, but their patients told them they did not want to feel treated like small children. For the pharmaceutical industry, the target group is too small to consider general information with each box of drugs. It is up to GPs and pharmacists to use these symbols for deaf patients. After a year and a half of interdisciplinary research, a CD-ROM was delivered to them for making their own print-outs!

(University of Groningen, Science Shop for Pharmacy)



c.2 TABLETS IN AN EMPTY STOMACH? RAMADAN AND MEDICINE USE

This PhD project related to the fact that Muslims are not allowed to eat and drink from sunrise to sunset during Ramadan. To some, this means that they will also not take their medication, whereas others would take their medication, but on an empty stomach. GPs and pharmacists are usually not aware of this patient behaviour. Muslims are not always aware of the exception to the rules laid out in the Koran for those who are ill. The project, carried out in co-operation with a Turkish university, focuses on improved communication and understanding, potential side effects, etc. It builds on previous projects concerning minorities and medicine use; for immigrant students this line of research is very attractive as well and given their language possibilities, some research cannot be done without them. Previous research showed, for instance, that immigrants from a number of countries expect to have a pill for whatever complaint, whereas Dutch GPs are normally very reluctant to prescribe pills for complaints that will go away soon anyway; the prescription of antibiotics being an example. These projects also lead to better mutual understanding.

(University of Groningen, Science Shop for Pharmacy)

