



Short Science Comics for a Broad Audience – An Interview with Jessica Burton and Serge Haan from LUX:plorations

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In 2020, the University of Luxembourg launched a series of science comics called “LUX:plorations”. Each volume comprised of a collection of eight stories about science and research in Luxembourg and it is available in five different languages. Produced in collaboration between local scientists and artists, this science communication project serves as a proof of concept for multi-lingual and collaborative comic productions. The comic is available for free in the form of hard copies as well as in several digital formats online under a Creative Commons licence. This article introduces the concept behind LUX:plorations via an interview with two members of the organization team, namely Serge Haan and Jessica Burton. It gives insights into the production and translation process as well as the distribution of the comic.



Introduction

A science comic called “LUX:plorations – A Universe of Research” (**Figure 1**) was publicly released 2021 by the University of Luxembourg (University of Luxembourg, 2020). The collection of eight two-paged comic stories was produced in five different languages (English, French, German, Luxembourgish and Portuguese) to account for the multilingual background of people living in Luxembourg and maximize effectiveness of science communication efforts (Márquez and Porras, 2020). The production of the comics was designed to include those translations via structural factors as well as by adding several check-points during the process. The comic stories were created collaboratively by a multi-lingual and inter-disciplinary team of scientists, artists and science communicators and coupled to a science comic workshop in which scientists learned the basics of comic production. LUX:plorations is available under a Creative Commons licence (CC BY-ND 4.0) online (website, social media) as well as in printed versions that are distributed mainly in Luxembourg and the Greater Region during exhibitions as well as other kinds of events.

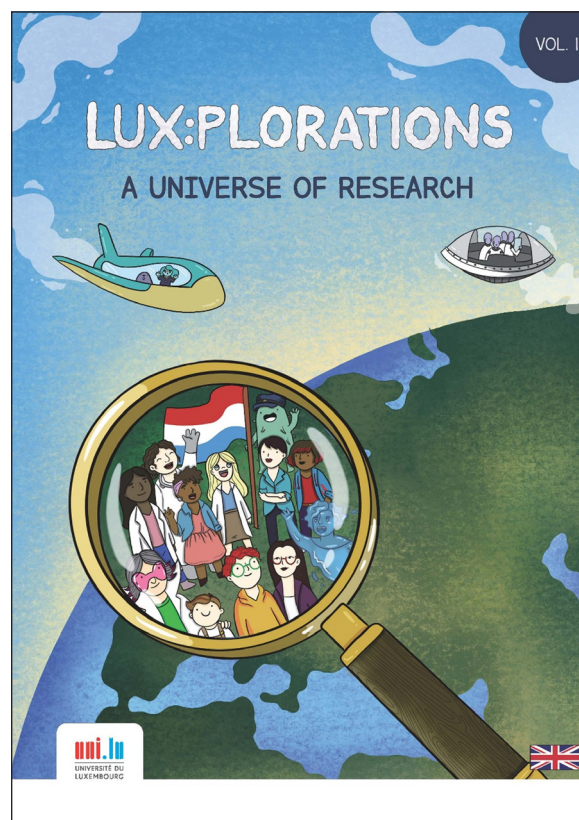


Figure 1: Cover of the science comic “LUX:plorations – A Universe of Research” (University of Luxembourg, 2020) © University of Luxembourg.

This article introduces the concept behind LUX:plorations to an English-speaking audience via an interview with Serge Haan, Vice-Dean of the Faculty of Science, Technology and Medicine of the University of Luxembourg and Jessica Burton, doctoral researcher at the Luxembourg Centre for Contemporary and Digital History. The interview is carried out by Nicole Paschek, Project Officer at the University of Luxembourg, who managed LUX:plorations. The project shows that science comics are not only an excellent medium to communicate science to the public but also a suitable and engaging tool for scientists to communicate their research. The author and the interviewees hope to inspire similar inter-disciplinary comic collaborations and encourage the production of comics in languages other than English.

Methods

Both interviewees, Jessica Burton (JB) and Serge Haan (SH) gave written consent to be interviewed in written form for a publication via a semi-structured interview led by the interviewer Nicole Paschek (NP) over a cloud-based shared word processing document. All three authors worked on the document, both synchronously and asynchronously, between 23 July 2021 and 17 August 2021, adding questions, answers and comments. The authors then included references and edited the conversation resulting in the written exchange presented below. The figures included in this article have been included with permission.

The Conversation

Nicole Paschek (NP): Can you please introduce yourself, your background and the role you played in LUX:plorations?

Jessica Burton (JB): My name is Jessica Burton, and I am a PhD Candidate working on the history of comics at the University of Luxembourg. I am a comics scholar as well as a comics professional, having worked as a comic book Editor and Translator for Titan Comics in the UK for several years before embarking on my PhD. My role in LUX:plorations is to mentor the students, alongside fellow mentor Veronika Mischitz, in the dynamics of comics storytelling. Both of us worked with the groups to bring their stories to life when collaborating with the artists. I also helped Veronika design the workshop structure, exercises and format. As a member of the organization team my role also consists of editorial duties.

Serge Haan (SH): My name is Serge Haan. I am a Professor for biological chemistry in the Faculty of Science, Technology and Medicine, in which I currently also act as Vice-Dean. I am the Principal Investigator in the LUX:plorations project and additionally act

as one of the members of the organisation team of the project as well as supervisor for some of the comics. The comic project originated in the context of a larger project called DESCOM (Doctoral Education in Science Communication). Originally, Oliver Glassl (another member of the organisation team) and I developed a number of science communication trainings for doctoral candidates in Luxembourg. As the team grew larger, Bruno Teheux (another organisation team member) came up with the idea of science comics. In LUX:plorations, I am responsible for keeping the entire project on track but this is very easy as the entire organisation team does an excellent job. I am thus involved in all the steps of the project. As I am very interested in visual ways to communicate science and research, I also try to advise and give input in order to help the doctoral candidates to generate a great story.

NP: LUX:plorations seems to be a mix between “Luxembourg” and “explorations”. Is this what the comic is about?

JB: Yes exactly! We wanted the project to be all about exploration in many forms, as well as being primarily centred around Luxembourg. Exploration in this sense is a multi-layered concept; in the first instance, through the students who explore the art of storytelling and science communication, as well as the art of comic making, and then they explore theirs and each other’s research subjects. For the audience, the publication is a journey of exploration into the huge variety of research taking place in Luxembourg and into topics they may never have heard about before. There is also a bonus layer of exploration through the character of Zamara, an alien exchange student who appears in every comic in some form, who is exploring what humans are all about, so in some ways we also see this exploration through her very curious and sometimes naive eyes.

SH: As the selected topics are directly linked to the research interests of the doctoral candidates, reading the comics automatically becomes an exploratory journey into our local research landscape. In addition, we sometimes represent Luxembourgish locations in the comics so that they provide an additional exploration and discovery journey, especially for the local population. However, it must be mentioned that our target audience is not limited to the local public. Our stories give insight into science and research as it is performed all over the world and we aim at an international audience. Finally, I find that comics additionally incite us to explore the limits of our own imagination as they automatically push us to fill gaps and to develop the stories further. In my view, this is especially true for short comics such as the ones we produce in this project.

NP: Can you tell us more about the comic's production and why you decided to translate it into four different languages right from the beginning?

SH: This thought came very naturally to us as Luxembourg itself is such an international place with 48% of foreign population, 170 represented nationalities and three official languages (<https://luxembourg.public.lu/en/society-and-culture/population/demographics.html>, accessed 12 August 2021). Accordingly, the University of Luxembourg is also very international and multilingual, currently with 969 doctoral candidates from 95 nationalities. It was thus logical to produce the comics directly in the three official languages of the country (Luxembourgish, French and German) and of course also in English. From the production side, this meant that we had to consider that the required space for texts will differ in the various languages. For example, the translations into French and Luxembourgish often required more space than English and German. Translations were done by professionals, but of course, subsequent proofreading by the researchers, advisors, various native speakers for all languages and artists had to verify several levels: scientific accuracy, respect of the intended emotions and placed humour (e. g. some jokes do not work in every language), and generally, maintenance of the tone of the story.

JB: The question of gender-neutral language came up towards the end of the proofreading process, when we realized the problem of languages where nouns have genders and different endings in French and German but not in English. We discussed the different options that exist and opted for the "Gendersternchen" (*) in German and the widely used median points in French. Such a seemingly small change really showed us the challenges in the intricate details of working in multiple languages. Furthermore, science communication and the language of comics is universal, and we did not want to limit the possibility to read this comic only to the English-speaking world. This is often a problem in academia, where most publications are shared in English, so we wanted to move away from that.

It is important to note too that the full production team played a vital role in the ongoing translation work of the project. Originally, we had wanted to allow participants to work in their native language, but quickly found that this was not possible due to the large number of languages in the groups. We therefore chose early on to use English as the working language, given that it was the prevalent common language between all participants, but the production process always had translation in mind. Though English formed the basis of the working language, both the organization team and groups of

doctoral candidates contain native speakers of all the languages used, meaning that discussions about word choices were ongoing throughout the process. Would a scientific term translate well into other languages, for example, or would the explanation take up a comparable amount of space in a speech balloon when translated, or even would some words have different connotations in other languages? These were the types of fundamental questions that guided the production process and made the concept of translation a driving factor in the work. The collaborating artists from Luxembourg are also multilingual, once more facilitating the process. On some occasions, when one member of a group did not understand a scientific concept, it was possible for another group member to explain it in another language to help with understanding. Once the comics were complete in English, the whole product was proofread by an English native speaker. Finally, when the comics were professionally translated for the end result, the book was then proofread by the entire group to spot any potential translation errors. It was particularly interesting to see how the professional translation compared with the ideas the native language-speakers in the team already had in their heads for how to translate something. Generally, the two aligned, and only small changes were made at the final stage.

NP: What was the purpose of the science comic workshop?

JB: The workshop spans over seven weeks and is designed to be an introduction to storytelling, comics and science communication. Its primary aim is to prepare the candidates so that they are equipped to work at the group stage and create their comic. The workshop teaches transferable skills and thus equips doctoral candidates with the tools to communicate effectively in all walks of life, by learning to get the message across in the most understandable way; it is not just about making a comic. Of course, this is the tangible end result, but the skills learned are actually very important in other applications. In the workshop we discuss what makes good stories and how to construct them by using a mixed format of lectures, assignments and in-class exercises. For the latter doctoral candidates discuss existing media favorites, and analyze them by breaking down the parts of why they are a good story. By the time the doctoral candidates reach the group working stage after the workshop, they have a good understanding of the building blocks of a good story of storytelling and how to apply this to scientific communication which they then take to their working groups.

NP: LUX:plorations was publicly released during a live stream on social media and subsequently shared online as well as in hard copies. What was the reason behind this and how has it affected its distribution?

SH: From the start, our aim was to use the more classical distribution via hard copies alongside the possibilities that digitalisation and social media provide to reach a larger audience. As our comic is freely available under a Creative Commons licence, we and everyone else can directly share the comics in a social media post or other platforms. As we specifically aim at high-school students (amongst other target audiences), we planned on distributing the comics on social media from the very beginning. Unfortunately, it is very difficult to create comics that work well on different platforms (social media and print for instance). We prioritized the format of the comic as a print version and adapted it as far as possible for social media, e. g. by cutting each comic into four pictures to upload on Twitter. Whereas on Instagram we chose to use stories with a single teaser panel and link to the respective comic on the website. However, the format of our comics with a maximum of two pages is well suited for printouts in poster format. With this, we organised expositions at various locations, which also allowed us to attract interest from “walk-in customers” visiting the locations for other reasons. Hard copies proved to be a good means of distribution during different scientific outreach events as well as for visiting schools. The combination of all these distribution tracks allows us to reach various types of audiences.

NP: Are there specific examples of specific panels or comics you would like to share?

JB: In the middle of LUX:plorations you can find a comic drawn by Marion Dengler about the water cycle which spreads over two pages (**Figure 2**). This one is quite special, as it also reads in a cycle. The reader starts at the top left and then has to follow the water drop down to earth, which is the bottom left, before climbing its way from one speech bubble to the next until finally reaching the top right of the comic. Ensuring this correct reading order is very challenging especially for the digital format, in which readers need to zoom in, thus losing the full picture and with it the visual guidance. As a hard copy, the comic works quite well though, as readers need to turn the whole booklet by 90 degrees to be able to read it. That is one of the challenges of comics using multiple distribution channels, but it also highlights the great possibilities of the medium in multiple forms.

NP: In total 34 people were directly involved in the production of the comic. What was the biggest challenge?

SH: The timing of the project with all its production steps is a huge challenge, especially as most contributors need to invest time alongside their normal work as researchers. Coordination of meetings and sticking to deadlines is therefore extremely challenging

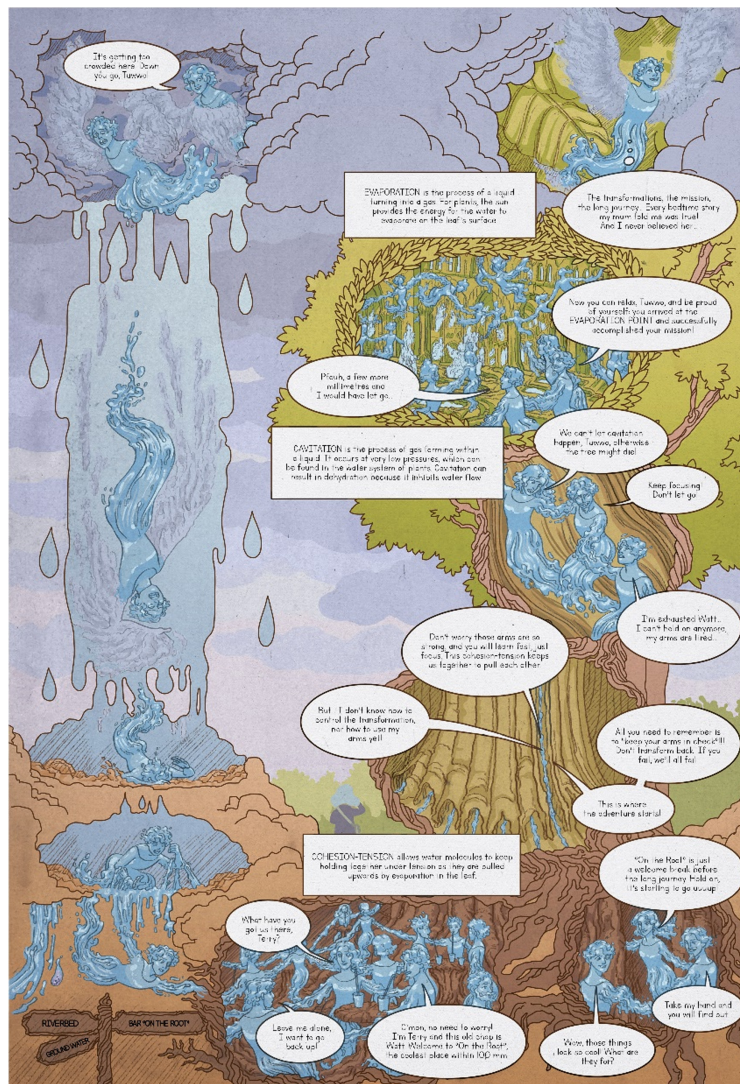


Figure 2: A one-page comic about the water cycle by Marion Dengler (University of Luxembourg, 2020) © University of Luxembourg.

and delays can easily occur at any step. Thanks to the entire team but mostly thanks to our project manager, we managed to stay on track and keep delays to a minimum. On top of that, the COVID-19 pandemic did not only influence the public release of the comic but also the whole production process. The whole volume was produced using digital collaboration tools.

JB: As you can imagine, one of the main challenges is the group formation. We ask doctoral candidates to choose their own groups, rather than the organisation team picking for them. Sometimes groups can form because of common ground in subject, or

because of common interest in a type of story. When a decision cannot be made easily, the organization team helps to group people together. Artists choose their groups after a pitch session, often based on the stories they want to work on the most.

Before the group formation, candidates work on their own individual stories through the workshop. We had eight teams in total, comprising of two to four doctoral candidates, one artist, one (out of two) mentors and one (out of four) general supervisors. Each general supervisor worked with two groups, while each mentor worked with four groups each. Each artist worked on two stories.

Logistically, there can only be space for eight stories, so it is a shame to have to lose around 15 story ideas, which some doctoral candidates can find difficult. Some groups choose to work on an existing story by one of their members, or try to include elements from multiple stories while other groups decide to go for a completely new story. Each group was also unique in their working dynamic, and it was important to consider each group comic as its own project, as well as being part of the wider publication.

NP: What feedback did you receive from the public and the team?

SH: The direct feedback from the public was in the vast majority very positive. In addition, a systematic online survey continuously available on the website of the comics taken by almost 100 users shows us very good ratings (4.13/5 points, n = 99). The comics have been downloaded over 1000 times within the first six months with 40 percent of downloads in English and 19 to 26 percent of downloads in French, Luxembourgish and German. This encourages us to maintain our effort and produce additional comics, even more so as LUX:plorations was recently nominated for a GincO Award in the category Best Shortform Comic.¹ I believe that every member of the organisation team is passionate about the project and has great fun bringing such stories to life.

Concerning the involved doctoral candidates, the feedback is very good but also mixed. Some readily invest a great amount of work and approach the project with the same passion as the organisation team. Others have a more pragmatic approach and see the project merely as a training in communication skills. The amount of work that is needed to produce such a story, especially as it needs to be condensed to two pages, as well as the overall production period of around seven months, was partly underestimated.

JB: But the overall feedback from the doctoral candidates was very good. In the course evaluations we received from 22 out of 23 doctoral candidates, they also indicated that apart from the science communication and storytelling skills, they also learned how

¹ <https://www.ginco-award.de/en/ginco-award-2021/shortlist-2021.html>.

to pitch, as well as some organizational, creative thinking and visualization skills. Artists also gave informal feedback that varied depending on the support received from the group but was primarily positive, citing appreciation for the level of details and references that doctoral candidates provided to help them complete the comic. When feedback was less positive, artists felt that there were some communication issues with group members. Feedback has been taken into account, and we improve the collaborations' steps and the guidelines that go along with the project for future volumes.

Of course, our collaboration mode is not suitable for all artists and researchers. In the early stages, we had some artists change their mind about joining the project upon further reflection of the working methods. Similar projects conducted in 2020 for example worked in a shorter and thus more intensive time frame as well as with several artists for one comic (Wysocki et al., 2021).

NP: Will there be more volumes of LUX:plorations? What are the next steps?

SH: Our goal is definitely to keep going and to regularly produce additional volumes, provided that we acquire enough funding and support for this also in the future. In science and research, there is virtually an unlimited number of stories to tell. The second volume is already in production. We want to take the feedback of our readers into account as well and strive to continuously improve. After having produced a first comic called "Through the Looking Glass" (University of Luxembourg, 2019) and analysing the feedback we received, we have re-designed the training and structure of the comic with the clear idea to produce an entire series of comics. For this, quite some thought was put into various aspects that would link the short stories among themselves as well as the volumes, such as the development of our two protagonists, a short story describing the continuous journey of Zamara and Yso in every volume and an adaptable cover design. Overall, the feedback shows us that the dual concept (training of researchers and outreach to society) works and that comics are an excellent tool to interact with the public and to raise interest in research and science in general.

JB: We are also expanding to include Portuguese language translation for Volume 2! This is once again linked to our desire for inclusivity, and to allow the large number of Portuguese speakers living in Luxembourg to enjoy the comics. Luxembourg's Portuguese population represents 15.6% of the country's population and constitutes the largest foreign community (<https://luxembourg.public.lu/en/society-and-culture/population/demographics.html>). We are also spreading LUX:plorations into the community. The comics are shown on large-scale displays at the Luxembourg

Learning Centre² on the University's Belval campus, and also featured in an exhibition at the Luxembourg Science Centre.³ Visitors can take a copy of the comics with them as well and leave their feedback. We also plan to use the comics for subject-tailored science workshops in the near future that could run alongside exhibitions. The digital aspect of the publication has also allowed for more ways to engage with the content, and we plan to add some digital-only features to the comic website such as quizzes and experiments that can be done at home. We already have an interactive part of one future comic where readers can send an email to learn more about the subject. The spirit of the comic after all, is exploration and we want people to explore the comics in as many ways as possible!

² https://www.en.uni.lu/studies/fstm/doctoral_education_in_science_communication_descom/news_events/lux_plorations_2_at_luxembourg_learning_centre.

³ https://www.en.uni.lu/studies/fstm/doctoral_education_in_science_communication_descom/news_events/exhibition_lux_plorations_vol_2_lsc.

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Editors' Note

This article is part of the Special Collection: Translation, Remediation, Spread: The Global Circulation of Comics in Digital Distribution edited by Jonathan Evans and Ernesto Priego.

Competing Interests

The author and the interviewees are involved in the production of the comics discussed. Other than that, there are no competing interests to declare.

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