



Between my two Trondheim visits, I met again with Foissy and Patras in Barcelona in January 2020 and did some ground work in the theory, establishing some basic results about a certain decomposition space of noncrossing multiary chord diagrams, which in our theory is the key combinatorial object. Now during my second stay in Trondheim, February 2020, Kurusch and I have had a very nice expansive phase, where we have outlined promising applications of the theory. We wanted to explore the scope of the theory before writing up the basics. If the theory were only a simplification of existing results, that would require one way of writing it up. Now we think that there is potential for much more than just simplification of existing results. Over the coming months we will discuss this further with our coauthors, and make more concrete plans.

In this way, while my first visit was mostly about closing one project, the second visit has been a starting point of one or more new projects. Both visits were very fruitful, the kind of intense mathematical experience we live for as mathematicians.

During my stays, I have annoyed as few people as possible. Actually I have mostly been annoying Kurusch, staying in his office from early morning to late afternoon, hardly giving him time to check his email. However, I have also given four talks: one specialised research talk in the Topology and Geometry Seminar, on ‘Infinity-operads as polynomial monads’. This was aimed at people with a background in homotopy theory. In February I gave two introductory talks targeted at a broader audience, on the theory of ‘Objective combinatorics and decomposition spaces’. Finally I gave a colloquium-style talk in the Mathematical Pearls seminar series, on ‘Möbius inversion — from number theory to renormalisation’. This topic is in natural continuation of my combinatorics talks, but upon Kurusch’s suggestion, I made this part a general-audience talk, and it seemed to be a good idea — many people said they liked it.

I was very well received at the math department, both by the staff and by the secretaries. During my stays I also had very interesting discussions with Claudia Scheimbauer and Nils Baas, both of whom I have known for a long time, and with Markus Szymik, Nicolas Gilliers, and Christian Skau, all of whom I had the pleasure to meet for the first time. I also had shorter chats with many other people, mostly in the lunch room, or in connection with my talks. I got a general impression of a nice relaxed atmosphere. I also felt welcome in Trondheim more generally. People were friendly and helpful, and patient with my not-always-understandable Danish.

The NTNU math department is a privileged place. While the mind is occupied in obscure mathematical thoughts, it is very nice for the eyes to contemplate the ever-changing colours (and grey-scales) of Trondheim fjord.

I feel very grateful for the privilege it was to stay in Trondheim, and I wish to thank Kurusch for thinking of me for this opportunity, and the Trond Mohn stiftelse and the Troms forskningsstiftelse for granting me.

Joachim Kock (March 2020).

