



Culture, Community & Climate

Edited by Richard Poval



Culture,
Community
& Climate:
conversations about
emergent praxis

First published 2020
art.earth, Kingsbridge, Devon, England
www.artdotearth.org

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Design: art.earth; set in Myriad Pro Light

cover image: Markus Wernli *Anthroponix* (photo: Sarah Daher)

A catalogue record is available from the British Library.

ISBN: 978-0-9957196-4-4

Published by artdotearth CIC, Kingsbridge, Devon, England www.artdotearth.org | publications@artdotearth.org







Markus Wernli *Anthropomix* (photo: Sarah Dehler)

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photo: Sarah Daher

Collective urine upcycling to grow plants and material responsibility

Markus Wernli

*To move people towards patterns of eating, living, and engaging with the world that promote wellbeing and a healthy environment, we need to explore novel collaborations for remaking human organization. In this art-led, two-month long work alliance, participants-cum-experimenters fermented their own urine for a substrate in which to grow an edible plant (*Lactuca sativa*), thereby creating a simple material relationship between their bodies and the environment. The outcome of this social experimentation with 22 participants revealed how the jointly encountered technical ambiguity stimulated curiosity and a unifying purpose which promoted social engagement and positively affected environmental relationships.*

Human biology formulized into actionable concern

Titled as *Anthroponix*, this study brought 22 households in Hong Kong into a coordinated effort to repurpose urine into something desirable for reconnecting with our biological foundation, and a gateway for harm-aware action. Reconceiving our basic, bodily functions, like eating and excreting, so that they are feeding back to the environment, requires to change our (food) culture from inside out. The study therefore explored constructive ways of interacting with human waste, and reframe it into a responsibility-triggering agent. Such participative, ecological sanitation is not just about closing broken nutrients cycles. It involved co-regulating entanglements with digestion and fermentation that can be guidance for human organization.

Fermentation as collective enablement

Often the long-term consequences are ignored when the focus is on speed, control, and efficiency. In response, *Anthroponix* pursued developmental pedagogies that bring the hidden context in direct relation with the apparent phenomenon for engaging in complexity in actionable ways. Adaptation here originates in a creative dynamic where the reorientation inside individuals and organizations opens unknowable possibilities, particularly in situations when we don't know what to do.

Anthroponix employed fermentation as technique to recover excess (waste-prone) energy with readily available, local inputs, rather than relying on external resources (like chemicals, electricity, logistics) for generating new circulations of life, enablement and meaning. Our organism can absorb food only, because gut bacteria deep inside of us are breaking it down—fermenting it. All life depends on this eating through-each-other. Hence, staying close with untrustworthy partners, paying attention to the processes involved, and living with the consequences, will make us safer in the long run. Fermentation also entails a healthy dose of messiness which requires to let go of external impositions and trust in emergence.

Exploring consequential body-environment interactions

This project experimented with applying urine as fertilizer in water-based horticulture that is 'freed' from soil. To this end, fermentation stabilizes the urine biochemically to avert smell and retain nutrients. At such miniaturized scale this has never been done before, therefore *Anthroponix* was a risky and emergent undertaking. Yet being

persuasive, the consequential foodloop enrolled in spring 2017 for almost two months, 22 participants who wanted to improve their eating and urine output for growing healthier plants. Participants collected/tested/fermented a small urine sample in their homes, every day in the first three weeks, for growing lettuce thereof in the second half of the project. The necessary materials, knowledge and support was provided in five, biweekly afternoon workshops.

The quality of each urine sample was carefully interrelated with the prospering of the lettuce plant. Participants received testing strips to check on health-related indicators in their urine, and monitored the fertilizer solution as well as plant growth with reference guides. An elaborate journal assisted in recording bidirectionally the flourishing in humans (eating, bodycare, urination), and nonhuman players (ferment, fertilizer, plant). This plant/human co-evolution was also carried into the workshops through presentations that emphasized the similarities in anatomy and functioning across life forms.

Balancing joint task with gratifying involvement

Because the procedures had been downscaled in the last minute and thereby were untested, the technical setup of *Anthroponix* was flawed. Already on day one, the urine containers leaked, since the bacteria were stronger than the centrifugal tubes. And most lettuces remained stunted since the planters were too small for properly mineralizing the urine's nutrients. Confronted with these limitations, facilitators had to quickly surrender their pride and admit shortcomings, while participants had to relinquish expectations and pitch in with own expertise. Despite the trouble, nobody quit, and most participants evidently enjoyed the process. The question was, why participants stayed on, and what motivated them to act in the common interest for advancing the project rather than giving up.

The evaluation showed that participants with stronger involvement in the group, stayed more engaged in their daily duties. Crucial was



the direct involvement with peers which brought purpose to the group and fulfilment to participants. Especially the interplay of individual tasks at home with group exchange, and phases of action with in-action, engendered a collective curiosity where participants were eager to know where the shared journey was destined to.

Bringing material responsibility into the everyday

Anthroponix struck a fine balance where self-investment in the joint task was alluring, while direct social engagement brought out individual gratification. In combination, this dynamic opened social synergies for confronting challenges bigger than oneself. This failure-friendliness permitted explorative and shared learning about redistributing material responsibilities. Stepping beyond unhelpful dualities like success or failure, *Anthroponix* made room for restorative skills, like vigilance, reflection, repair, and maintenance—precisely the virtues for addressing the unhealthy imbalances of current human organization. Since these virtues are rooted in the everyday, it implies to pay better attention to peoples' desire for fulfilment and community. Creative practice then is asked to shift tastes, preferences and criticalities towards the very continuities and circulations our living foundation depends upon.

Acknowledgements

Anthroponix was realised in collaboration with Sarah Daher and made possible with a Seed Grant from Design Trust in Hong Kong, and Internationalization Grant from Dutch Creative Industries NL in Rotterdam.

photo: Sarah Daher





Seaweed
fouling agent

Seaweed
fouling agent

1 2 3 4 5 6 7 8 9 10





Markus Wernli, Sophia Wunderlich,
Neil Williams & Benson Law

in conversation...

In conversation with Markus Wernli, Sophie Wunderlich, Neil Williams, and Benson Law, Hong Kong, September 3, 2019.

RP Welcome Markus, I'm looking forward to our conversation.

MW So there should be Neil, Benson should join me soon (he'll be with me because he doesn't use Skype) then I hope that Sophie is also coming online. I think that's everyone. Sophie and Neil, they were participants, Benson was a co-facilitator acting as a marketing expert and a videographer of the project.

RP Excellent. So before the others come in Markus, can you just tell me a little about how your projects develop and how you work with teams and that sort of thing.

MW This Anthroponix project was gradually building up during my PhD studies. Basically two and half years were leading up to it. I tried to find a place for human waste in the context of Hong Kong. I did various interventions: composting project, soil cooking events, engaging with existing roof-top farms – Hong Kong university for example – all kinds of activation events. And then always a challenge was to engage people over a longer period of time. Not just facilitating a “green afternoon” that makes people feel a little bit better at the educational farm where they learn a little bit about soil. Rather, I was interested in engaging people over weeks or months into a co-crafting venture. That was my goal. Eventually we focused on urine fermentation and then this idea of connecting this with horticulture – hydroponics, water-based plant cultivation. During these efforts of doing all kinds of workshops with permaculture groups, educational farms, the University

roof-top garden etc. it created a certain following of interested people.

People knew about my work, some were curious, word of mouth...and then we put out the call [for the Anthroponix project] to which more than 40 applicants responded, so I could be selective with whom to work with. Eventually we accepted twenty-two participants. We had these intake interviews where we could see what people's motivations were and whether they were prepared to go into an experiment. Everybody knew that it was something fairly untested.

RP I think Sophie has joined us. Yes?

SW Hi - how's it going?

MW Hey Sophie. Thanks for making time and joining us. How are you?

SW My pleasure! I'm OK but I just consumed some news about Hong Kong — it's a hot topic that keeps us on the go.¹

RP It must be very difficult. Mind you, the UK is pretty crazy right now, too.²

SW It is...interesting times. Are we still waiting for other people?

MW We are waiting for Benson. Benson is going to join me, in person. He's coming, he's on his way from work. He may be a little bit late so maybe she should start. Let's wait a few more minutes maybe.

NW Can you hear me OK? I'm in the call now.

RP So where is everyone coming from today? Where are you coming in from?

NW I'm in Hong Kong. I'm in Shek O (石澳). It's a small village on the southeast corner of Hong Kong island.

SW So we have one UK and three Hong Kong and then one other Hong Kong'er joining.

MW Have you been to Hong Kong Richard? It's something I've often thought about but I've never been.

RP No, never have. I've not experienced it other than in myth and legend.

[group laughs]

RP How receptive is Hong Kong to your project and to some of these ideas. Would you describe it as a progressive city?

MW I don't have any judgement, but as for me, I don't try to convert people who are on the other side of the spectrum. I work with people who are somehow like-minded. Who are interested somehow in relating to natural processes or have an ecological sensibility. That's what I learnt in Hong Kong — not to become a kind of missionary... I don't know, maybe Sophie and Neil can pitch in?

SW Well, I would say your project is very unique in Hong Kong. Most people are not very concerned. They don't talk about environmental issues much. I would say the general level of awareness, compared to say most European countries or UK (is rather low)... When I first moved to Hong Kong, I was trying to find like-minded people and it wasn't easy at first. Eventually you will find them but the community is quite small — everybody knows everybody else.



MW The first will be self-introductions where we go around the three participants who are here today — I

count you, Benson, as a participant because you were present in most of the workshops, so your perspective is interesting as a semi-outsider.

SW My name is Sophia Wunderlich. I'm originally from Germany and moved to Hong Kong in 2012. I have studied biochemistry and have a Masters in Engineering in urban plant management. I came to Hong Kong for a research project on urban planning and then decided to stay here. I started a little business in Hong Kong with fermenting organic vegetables, so that was a little food enterprise. I was teaching workshops and just like trying to educate people about how they can make their own fermented foods, and teaching them methods about how to connect to their own bodies. Because when we make fermented food the way I teach it is to use your hands and you inoculate the food with a culture that might be on your hands. So, you are also creating a connection through food to your own body and to the environment [what David Zilber (2019) calls "the microbial terroir"] . So I was already very into this topic when Markus approached me and told me about Anthroponix.

MW If you could sum up the project in three sentences... what happened for you in this project?

SW I fermented my urine and grew plants and I watched how the different urine samples had an impact or no impact perhaps on the plant growth. It helped me to become more aware and conscious about what I put into my body because that would directly impact the quality of my urine and that would impact plant growth. So, for me it was all about studying my relationship to food, and also to the natural world, like the plants and the things that are directly connected somehow to my body through urine as a medium.

MW That sounds almost too wonderful and idealistic. So, what happened in reality?

[group laughs]

SW I would say that was the objective. In reality the plants grew fairly well, there was not that much of a difference when it came to plant growth — there was nothing I could really tell. I didn't do any lab tests on it, so I can't tell if the different urine samples really had an impact on the plants. But the thing is that I became more conscious of what I put inside my body and that was very interesting. Also, [after the project] I kept using the fermented urine for my plants — I've been running some roof-top farms and that was a wonderful source of free fertiliser — so I very much liked this idea and kept using it.

MW Do you feel you had a specific role in the project? What was your status?

SW Maybe because I had some prior experience with fermentation, I could offer some technical advice on how to ferment. And also, when it came to plant growth — you know that's my patch [domain] — I could check on how the plants are doing and discuss with other people, [like, you know], how's your plant? Why is it not growing well? So, I was able to have some technical input.

MW I think you were some sort of a mentor not only for your peers but also for me when it came to preparing the workshops or reflecting upon. I think you pitched in with your more scientific background. I highly appreciated it.

SW How was I invited? I think you invited me personally because we were already friends at that point. I wanted to support you.

MW Over to you Neil...

NW Hi, my name's Neil Williams, I'm from the UK, originally from Guernsey originally. I came to Hong Kong in 2003 by way of London. My background is in design, in designing visitor experiences for museums and exhibitions and I came to Hong Kong to work on a big wetland visitor centre. I've done a number of different environmental education centres. I had an interest anyway in that area. I came to know Markus through PolyU [School of Design at Hong Kong Polytechnic University], and my capstone project for my MDes was around urban farming and urban food production in Hong Kong. I had various discussions with Markus about that. So, we knew each other through those things.

When Markus contacted me, I was part of the way through the process of setting up a home hydroponic system — actually two systems, one indoors and one on the roof. I was running it by solar and I was looking at ways to shortcut the system, so that I didn't have to buy external materials for potting but also for a nutrient solution. So, I was really interested, and the idea of organic ways of creating nutrient solution locally, rather than having to... essentially, I was using chemicals and I didn't know the origins of them. So, I was super-interested in the project from that perspective.

For me the project was more interesting from the perspective of me understanding my body, what I was putting in it, and putting on it. As of that point, I completely changed the types of things I washed myself with, deodorants I used, etc. I totally changed from the point where I started to record everything. The growing for me didn't work particularly well. I felt that the scale was a bit too small to really see the impact and a lot of my seeds didn't do very well, they got rot and a lot of algae — when the light gets in to the water. So, I didn't have very successful

growing. But the self-analysis part was super-interesting and also the social aspect of peeing into a test-tube every day and then racking it up in the flat with my family around, wondering if I'd gone completely mad. That was particularly interesting – when the lids popped off.

MW What was happening with the lids?

NW The carbon dioxide built up, so... this is what was before we started taping them down, in the first week: all the lids started popping off and stupidly I asked my daughter if she knew anything about it and she said to me 'why would I touch your urine?' Fair comment! Watching the chemical effects was interesting, and then doing the Urinalysis [dye test strips for ten medical health indicators; similar to a pregnancy test] has changed the way I think about what I put in and on my body. I was always relatively careful, but I have been more so since I did the project.

So, how was the project for me? I was keen to look at a scaled-up version of the system that I could use for larger scale. The [hydroponic] unit I have on my roof requires quite a lot of nutrient solution – way, way more than I could produce on a test-tube basis. But I never really managed to come up with a viable solution for that. I think we also found during testing that the urine alone wasn't really adequate — it needed other [complementary] inputs. So, I'm still thinking about what kind of recipes could be put together.

MW I think you ended up making your own deodorant after the project, I remember? As a follow up trial...

NW Yeah, I didn't get very far with it though... [laughs]. But I'm still thinking about that because it's still an issue getting these big bottles of chemicals from the shop and

then taxi-ing them back to my place. It's not a sustainable way of growing that I want to manage.

BL I'm Benson Law. I'm a Hong Kong local and I met Markus three years ago. We knew each other through common friends and I had helped Markus to shoot a promo video for another project — the Black Circle project. And honestly I'm not an eco or farming person. I know nothing about green life. Because my profession is, you know, in media — I sell marketing strategies to different clients from different industries...

MW You work for a newspaper, right?

BL Ah, yes, I work for a local, leading newspaper. I graduated [in media studies] ten years ago, so I have the knowledge to produce documentary video which is useful [garbled]. Markus first came to me and invited me to document the event and cut it into a three-minute video. But then it turned out to be worth producing a longer video, around twenty minutes. The footage we have is very long — around 45 hours — so how to edit it into a coherent length? We tried to keep it under 30 minutes. We have spent much time explaining what is the Anthroponix system. I show it to my friends and family and they find it rather boring and too technical. A problem for people who have not been involved in such a project. My mission is to turn it into something with simple language which the layperson can understand. And we formulated the whole video into three parts: we have interviews with local people from different backgrounds — the first from a village, then an interview with Daniel who lives in a very dense urban area; and the last interview is with Richard who lives in Kwun Tong (觀塘) which is also a dense urban area and relatively lower income. So, three different persons from different backgrounds.

MW I want to say that Benson was also elementary in setting up the communication strategy for the project - Remember, we had many, many meetings? Can you talk about that?

BL Yes, that's right. But I would like to focus on the urine. Because in Chinese culture we consider urine and faeces a dirty thing. It's like a taboo, which everyone will avoid talking about face-to-face. And also, we usually don't put this in words. So, we have to think about poetic names for the project and a poetic way to describe it. But I forgot now what that was...

MW At the very beginning we called the project 'Golden Growing' in English, but then Neil had some problems with that...

NW Yeah, golden (...)

BL As I remember we talked about the qi (氣) of China's culture - the flow of energy. And how to connect yourself with the environment and how to connect the energy from the environment to empower yourself. So, we found this very poetic and easier to communicate and to engage local people. I think we did good work here.

Another thing is that we give the project somehow more a bit of a commercial touch. Like we have produced a modular, small tool kit kid's set. Because in Hong Kong there are several similar [upskilling] projects coming out every month, but they are all very abstract and they are all like a seminar - only the speaker will speak and no one will respond. This is somehow the culture of Hong Kong people, Hong Kong students. They are looking for some souvenir from every event. So, we decided to turn it into a more commercial structured event [garbled]... [We gave participants] a box which contained many

items. We categorised segmented it in five parts for clear understanding. So everyone should bring back home the process after every workshop.

We had five workshops, we had modular elements so they would gradually get the materials and the skills and some exchanges and then come back with the result - what they were growing at home - hopefully. And I think Markus did a great job on the design of the journal which was used to monitor urine and plants participate. It gave participants a more poetic aspect to the project. And some students with an arts background found this very interesting because they seldom talk to themselves, they seldom work towards a longer term goal plan. For me as a Hong Kong person I discover it is very special to [garbled].

MW I think we can segue into the next section which is about collaboration. The project took place not primarily at these five workshops - which were packed, they had a lot of stuff going on, materially, and in terms of the knowledge they conveyed, and what was exchanged. But most of the project took place at the participants' homes. That was a special setup. How was the experience for you Neil and Sophie? About that, this kind of tandem between home and workshop?

NW Most of the experience was at home. There's not just home since with the workshops comes also the travel back and forth as well. So, walking around Hong Kong with a bag full of test-tubes filled with semi-fermented urine was quite an interesting experience. People tended not to see - I kept everything in a shopping bag - but that's kind of strange, knowing what you're walking around with and knowing how the people around you would probably react if they realised.

The experience at home... my family kind of tolerated me doing it but to them it was pretty icky... dipping paper into tubes of urine and trying to read the numbers. This is the first thing I did every morning at six. So, getting into that routine was an interesting experience which everyone got used to but to be honest my family stayed as far away as they could.

The experience of meeting the people in the workshops was fun — seeing how people were adapting techniques to make their plants grow. For example, one of the people had set up an electronic pump for all of their hoses, instead of needing to blow air into the tubes all the time, which was pretty clever. I think there were other experiments with artificial lighting and other ways to try to keep [the plant growth] growing. [Some people found] ways of taping the tubes to keep the light out, etc. That was an interesting experience, and just listening to people sharing as well, that was interesting as well.

SW Yeah, my experience was fairly similar. The transport part [laughs], walking around with a bag full of samples was always funny. I was concerned not to spill anything. At home — actually I was the person using the electronic pump, so I had the plants hidden, I had them near windows, behind the couch. So, when we had visitors, no one would see it — unless I showed them. And for the urine samples I kept those in a cupboard, so basically it was all hidden. So, it was just me interacting with it.

MW Do you live alone?

SW No, I live with my boyfriend and he knew about it and he was fine. But I kept the plants in places that were not very visible in case, you know, someone just walked in, like a neighbour — sometimes neighbours come. So, I had everything hidden from view.

There was a lot of journaling involved which was a little bit new to me, so I had to get used to that. But apart from that I really enjoyed that we had regular workshops where we could talk about it and share our experiences. The whole group was pretty active so there were many ways to connect to other people which also helped me to keep going. I don't fully remember how long the project was — at least five weeks? So, it was a fairly long time to keep journaling every single day.

NW Now I think of it, the journaling was pretty hard. When it started off, it wasn't too bad but it did become quite tedious actually, I have to say. Especially trying to record all the details of the test strips, which were pretty difficult to read. They were time-dependent, too, so it was difficult to manage all of that. Later, when my plants were dying off so there wasn't much to really record either, so that became more of a hassle.

RP Can I ask a question about the journaling? Was it the intention to record, to keep a scientific record, or was it also for you to talk about your own feelings about the project?

MW The 'eating' section had space for participants to put down with whom they ate, the social aspect of eating, how they felt; emotional aspects of the body, how they slept; so they had space for that, for the emotional continuum to put that down. Since we had really low-tech, analogue measuring and monitoring devices, so I think that the scientific aspect was a bit elusive. There were too many variables to control. Some participants mentioned that it became more like a springboard of their imagination where they were thinking... Even though they didn't grow much but they were thinking about the implications

of the urine and what they were eating in regard to the potential of what would come out of it.



To speak for a little about the science aspect. The project was hosted by a design school. My background is obviously in fine art and design but it had a certain scientific or technical ambition. How did that work out for you as participants?

NW Obviously, I was interested in understanding the system quantities from a scaling perspective. How it could be scaled up? And being able to monitor the impact and any deficiencies, but it turned out it was very hard to tell, very hard to track. There were a lot of external factors I think that influenced the seeds, more than the nutrients. Obviously, the seeds have their own nutrients when they start to grow, so they shoot up anyway unless there's a problem. But then you've got fungus, you've got algae, you've got over-saturation. So, there was various different external factors that had an influence, and made it very hard to tell what [is happening]...to make really a scientific experiment in that sense.

We tried playing around the seaweed as an additive, but at that point my plants weren't in a fit state for that to help.

But yeah, it was interesting to have that many samples, to be able to track them and see what difference or impact that would have. The reality was, I think, less than I would have hoped, but it was still an interesting experiment to try.

SW As Neil just said, there were so many factors involved that could have had an impact. For example, when it comes to planting, I knew that a lot of people have very

tiny homes, no window or not enough light, so it's very hard to grow a plant without sufficient light.

Or it may be very hot – summers in Hong Kong are very hot – so there could be so many other reasons why a plant is not growing well other than just nutrients. To me it didn't feel like a very scientific experiment in this sense. But it was very thought-provoking and that was the interesting part for me. And also, it actually made me think, 'if I was to do it again as a proper scientific experiment, how would I do it? Which factors would I try to eliminate?' So, it just kept me thinking about it. For me that was the whole point of this project.

MW So if we would do it more scientifically, would it still have the same social quality? It obviously had a social dynamic because 22 participants stayed in what scientifically looks like a failed project. Clearly, [on that level] it failed: it was a technical disaster.

SW I don't think it would have the same social quality because, you know, everyone did this at home, everyone has a different home, different conditions at home, so you cannot really compare that. But just bringing these people together, and have them talk about it and just think about whether urine could actually be a resource and not a waste [product], I think...if you were to do it very, very scientifically, you would lose that because the idea is to try it at home and not be too focused on a specific outcome but just focus on trying something new. That was my take.

NW For me it was more... it felt more interesting from a personal perspective to analyse my own body output and input and then track changes. That for me was the more interesting part than growing the plants. The input and the output from my own body was something

I could really measure and review and I found that super-interesting.

MW And it seems that was a point of connection between people. I remember we talked about air quality in Hong Kong, we talked about contaminants in the food, about the use of pharmaceuticals... so suddenly the circulation of urine became a medium of exchange and social connection.

BL I would like to share some circumstance of Hong Kong now today. The youngsters embrace a DIY culture. Because we are not able to gain some political independence, we want to realise a different kind of independence in the different aspect of our lives. So, through this project people found some independence through manipulating their own urine. Honestly, we have to think about eating the pesticides or GMO in our food. But this project I see quite a lot of students participants exchanging what they've eaten every day. Why does your plant look so good!? And why does my plant look so unhealthy? Surely they would then examine what they have eaten. It was a very special opportunity to have that kind of review.

MW There was a sub-group, a Hong Kong-based Chinese sub-group, they tried to coordinate their food intake. They decided, I think, everybody would eat yoghurt — more probiotics — to see if that would have an influence on the fermentation or on the Urinalysis values.

BL Hong Kong people like to compare outcomes with each other [group laughs].

MW A little bit of healthy competition...?

BL Yeah. It's a good way to increase the awareness and consciousness of what we are eating. It really is a unique opportunity for our Chinese culture. As our green

consciousness is not as high as [maybe in] the western community.

MW Yes, but on the other hand, during the interviews, I had, many participants who mentioned that they have relatives in the countryside and they know that their uncle or grandfather is using or used human waste because here in Asia it's still more common to apply human waste for agricultural use. So, everybody has some sort of story to tell in that direction, I remember.

In Chinese medicines you also...investigate the colour of urine and the shape of your faeces etc. These health connections have been done.



MW So you do you think you're specific backgrounds has contributed to the overall project? Did you feel like you had an influence in what was happening, in what was achieved in this project?

SW If I may start... Even though I do have a technical background that was relevant to this project, I felt that actually, it was easy enough for anyone, regardless of their background, to join and do the project. And that was very important, that it was very inclusive and anyone could join, anyone could do it. So, by just doing it and sharing your experience I could have an influence. So even if I had zero knowledge of fermentation and biochemistry, I think, I would still have been a valuable member of this project.

MW So everybody could be valuable? everybody could be a member?

NW I don't think my background had any particular bearing. I was just one member of the group. Obviously, I've been doing hydroponic growing for a while, but in a

much more controlled way, not in such an organic way. So, that was a learning curve for me. But I don't think my background had any real bearing on my participation, I was just keen to get involved and share with you all.

MW What you think was the role here of design or art? Do they have any play in this? Could this project have been hosted by a horticultural institute, or by a biology department at Poly U?

NW Errm, I think it could be, but I think what design brought to the project was a choreographed experience. The way you packaged everything, the way you graphically arranged everything. Boxed, prepared... And the way you coordinated the workshops sessions as well.

MW Why? Why the coordination of the workshops?

NW Well, there was an element of design in that I would say, a facilitation, a design process to those workshop sessions that I don't think you would get without design input.

SW And also the test-tubes and the boxes, they were very pretty. It was aesthetically pleasing, which is also important as a person who may be sceptical – 'Oh, I'm working with my urine'. But then it kind of looks nice and when you bring it home you feel like 'oh it kind of looks cool. It looks artsy or modern or whatever...' So, I felt like the design aspect actually made it easier to start and to be like 'OK, I'm trying, I'm going for this'.

NW I think the whole journey was designed, if you think about it from a more holistic perspective. Beyond the aesthetics, which was great, the packaging and everything was all nicely coordinated. But I think you did a good job of designing the journey, bringing people together in a

way you designed that kind of interaction for people to frame the way that they responded to the process.

MW So, in or during, or after the process, was it still waste, your urine? That was the question that quickly came up among participants, I remember.

SW For me, I know, you had asked me if I would consider to apply the unused, fermented urine. So, when I go to the bathroom I think 'hmmm this could be used better'. It's not that I... I used a little bit of it, I started growing micro-algae. Because one thing I noticed during the project, we had so much micro-algae growth, and micro-algae can be used to build an organic air purifier, so actually I started a whole other project which was inspired by this project. I kept on fermenting some of my urine to make micro-algae. But apart from that I did not really continue fermenting much because it is a time investment, you have to be very dedicated to it. Maybe sometimes explaining to people living in your flat, or to other people what you're doing can be uncomfortable because it's a taboo. But I'm definitely still thinking about it.

NW I had firm intentions to look at ways to scale and combine these techniques with other forms of nutrients, like compost teas, and seaweed and whether I could come up with a formula for an organic nutrient solution that I could use in hydroponics. But I've never managed to get it right, never managed to make something that works properly that's properly soluble and has a balanced nutrition level. One for the future still...

RP I'd like to ask Benson about this design question and how you felt, as someone who works in marketing and image about what difference that made to you about working with the project. Did it feel like an artist-designed project?

BL As I've mentioned we tried to use a visual approach to connect to the Chinese culture with some working through. We have to visualise what we consider is poetic. This is why the design work, the visualised work, is quite important in the tool box. Some illustration, like... May I share some personal experience? Actually, I am singing a lot, and I am learning with a classical singing teacher, and like a vocal cord, you cannot see actually but you can feel the muscle, and the tissue around. Also, the vocalising organs are in yourself, you cannot see them clearly (obviously) but we need to use our imagination to see our inner self. The more the visual input, the more the participants might see themselves.

MW Oh, so you mean visualise, or reconnect that our body is something whole, the different organs, the liquids, the juices? What is it called, the Four Humours inside of us, come together and build up that organism, and then our organism is part of a much larger organism. Urine being one of the exchanges, these energy exchanges... Is that what you mean?

BL Like air from your lungs goes through your vocal cords and then comes out through your head and your nose. Obviously, it's much more materialised... besides, I want to say, this was not just a scientific project it's a visual arts project. It helps you to explore and visualise all the liquids inside yourself.

MW Through the journal — we called it the Journal of Mutual Flourishing — this story-building... but also we presented the content, the scientific content... we tried to oppose always the human aspect and the non-human aspect side-by-side. Like show the stunning similarities of the mango seed when placed next to the human foetus for example. Or placing the Vitruvian Man upside down

and next to the rhizome of a plant for showing their functional resemblance... this kind of thing. We pushed these interspecies relations of course to make you feel like you are part of something bigger. Like this awe... like we are part of circulations that are bigger than us. And then I think with the group dynamic we had also this belongingness on the social level... we had so many very different, varied people, various characters who came together. But they kind of established a sense of a shared 'We'. Like at the end I felt like 'yeah, people come back even though perhaps they are not successful growing anything, or they had doubts about the project from the very beginning, but they keep coming back and become part of a group. Some collegiate experience happened there.

What do you think about this collegium, this camaraderie, this companionship? Do you feel like something like that was going on in the group?

NW Yeah, it was very interesting... I mean it's a pretty unique experience to go through, there's not many people anywhere who can say that they've spent five weeks fermenting their own urine to grow plants. You know, we had a very unique experience to share with one another in terms of how we were doing with the growing, how we were doing at home, how we were doing recordings of all of this information. And then the impact it had on the way we all went through about ourselves and the natural systems. So, I think that it was a unique experience shared by a unique group of people in a place where you wouldn't expect it, if you know Hong Kong at all. So, all in all pretty unique in many ways.

SW Yeah, there was definitely a lot a social bonding happening over the project and shared experience because, as Neil just mentioned, it is something very unusual to do.

I was surprised at how many people joined. In the beginning I didn't think that it was possible to do this (project) in Hong Kong, I just could not imagine finding enough people interested. But they were. And also, when I looked at some of the people, if I had met them on the street I would not have thought that they would be interested in doing such a thing as this. So, for me it was an eye-opener, and I thought that maybe Hong Kong people are more open than I thought – you just need to provide the right type of opportunity, and then people will come. And also, I had the privilege of knowing Markus before and I knew some other participants as well. Benson and I are still in touch now. We met through the project and we're still in touch. It's very nice!

BL I would like to share a bit. I've mentioned that Hong Kong young people like DIY work, customization work. And through this project, I may say, we have put an equal system inside ourselves. Like a rainforest inside ourselves. For example, my wife likes to buy some small planting system or some fish feeding system which is a tangible thing outside your body. To cope with the Chinese culture, we like to put many imaginative things inside ourselves. Things like Qi (氣), and that kind of thing. To me this project is quite suitable for having planting an ecosystem inside yourself. And for the sharing aspect, we are not just showing our own plants and comparing with each other, we will share what we have input ingested and what we have managed to eat and drink, etc. and compare it with each other. It's like gardening yourself, gardening your mind, your behaviour. This is quite nice...

MW I remember in the first session we made some sauerkraut together on one table. Everyone participated in mashing the cabbage. That was a symbolic way of initiating and sharing bacteria already...

RP Thank you all. Markus, would you like to ask anything else?

MW Yes, what is the legacy of this project? What did we learn? It's been two years since, which is a great time span to put things in perspective. Was it a blip and it's all gone? Evaporated into the air, or what do you take out of this? Should we do it again? or not? what is resonating for you in this now?

SW For me the main part was raising awareness of what I put in, what comes out of my body. From that perspective I would love to do the project again and I would love to have more people joining and trying it out. There's some room for improvement when it comes to the technical side, but this was a first trial and the first time is always the hardest, where you learn and then can improve. But yeah, for me I really was impressed by how many 'ordinary Hong Kong people' joined, when I thought they would not be interested. And I think it's a very healthy thing for Hong Kong, maybe not only Hong Kong, just people in general to think about their environment, think about their own bodies. So, from that perspective I would love to see more of it.

NW For me the big takeaway was understanding my own personal system better. That's had a long-term influence, like I've already said, on what I put on my body (I was always quite careful about what I put in my body) but I would spray myself with god knows what [laughs]. I've changed my habits completely in terms of the types of things I put on my body [now] which is the big take-away. In terms of the growing side, I'd be really interested in an experiment that looks at how to scale this. I know that's not really the direction the project was going — it was much more about the social interactions, the social

experiment which I think was amazing. But from a practical level I'd be super-interested in working... it's on the back burner of my mind... about how to scale this and make it productive. And then, is there a way that we can potentially... I don't know, country parks have a system that could work for larger scale... so we can divert some of this energy that we are wasting and just dumping into the sea, back onto the land again?

BL Some participants, like Daniel, have put extra elements into the fermented urine so that it has become a powerful fertiliser for his garden. For me, I've tried to amplify what we have done through the video, and kept sending it to some laypersons. This is my role. Because it didn't take part in fermenting my urine...

MW Did you discover something new about Hong Kong people?

BL Yes, besides producing something tangible for them to take away, encouragement for them to come back. The video has become a map for communicating with the layperson, because often we feel like green ideas and the scientific ideas are too remote and too difficult to understand. We did research on the video [storytelling] on how to amplify the idea.

MW So we learned techniques to communicate the story? So that others outside can partake, can participate?

BL Yes, yes. They can understand the whole idea within 20 minutes. There's some interesting sharing by three participants.

MW OK, that's right... because it was an in-group project. It was a closed group, adding an outlet, a window to the world, I think that's what you're saying Benson.

BL It's important, too, to give [the project] some sort of a legacy.

MW Because in a way I know some participants were disappointed, they were saying that they couldn't tell anything, even to their own family, because they didn't succeed with productive outcomes. It was not really working as a system. So therefore there's not much to tell [anyone]. But then some of the sharing that we have today through this book project and some of the video, we can give [the project] a legacy, we share the current state of what we felt about it.

RP What I've learnt today is that you can maybe have no technical success, but nevertheless there are clear things that people are taking away from the project. And how to communicate that is quite an interesting question and quite a difficult thing.

MW [interrupts] So what does everybody think? Was it a waste of time? These five or six weeks that were quite intense.

NW No. It was good. It was very helpful. It was probably never really about growing the plants was it? It was a great journey of self-discovery I think, on a personal level.

SW Yeah, I can second that. It was very personal in a way, to communicate your personal story with others. I understand that it might be difficult if you want to put that inside a video or share that with the world – you have to think of how do you present that. So there's personal information, maybe it's private or something that you don't want to share specific details. On an abstract level, what do you communicate?

I would also say that it was time well spent. It was thought-provoking and inspiring.

MW Thank you so much everyone.

RP And thank you from me as well.

Notes

1 For the latter half of 2019, and continuing as this book goes to press, pro-democracy protests rocked Hong Kong. Protest began in June against plans to allow extradition to mainland China. Protestors feared this could undermine judicial independence and endanger dissidents. Clashes between police and activists became increasingly violent, with police firing live bullets and protesters attacking officers and throwing petrol bombs.

Mitigating action by Chinese authorities have thus far failed to quell the riots.

2 2019 was also a politically charged year for the UK as well, with the Brexit debate continuing to be the centre of political and domestic attention. Two governments fell during the year, and many legal and precedential precedents were shattered.

photo: Sarah Daher



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URINE COLOR

- CLEAR: Very well hydrated
- PALE YELLOW: Moderate hydration
- YELLOW: Mild dehydration
- ORANGE: Moderate dehydration
- RED: Severe dehydration
- GREEN: Urinary tract infection
- BROWN: Urinary tract infection
- BLACK: Urinary tract infection

URINALYSIS READING CHART

Diagrams showing the use of the test kit: 1. Add urine to the test strip. 2. Dip the test strip into the urine. 3. Remove the test strip and wait for results.

The chart includes a grid of color swatches for various parameters: pH, Specific Gravity, Glucose, Protein, Ketones, Bilirubin, Urobilinogen, Hemoglobin, and Leukocytes.



ISBN 9780995719644



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