COMMONS FORUM *Commentary*

On the Use of Actor-Network Theory in a Common Pool Resources Project

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Common pool resource theory has become the dominant theoretical and practical strategy to study and design natural resource management institutions. This essay contrasts the common pool resource theory (CPR) with that of actor-network theory (ANT) by employing the rhetorical device of a conversational piece between two researchers. Examining their respective approaches to understanding highlights the ontological and epistemological differences between the two approaches, and how they could be used to investigate community based nature resource management. For illustrative purposes we draw on our empirical work on community-based natural resource management (CBNRM) in Kisakasaka, Zanzibar. Some common misconceptualizations and misunderstandings of actor-network theory are clarified by examining some often taken for granted common pool resource assumptions about rationality, objectivity, framing, scale and what constitutes common sense when undertaking social science research. The essay concludes equivocally by suggesting that although the two research approaches should not be hybridised, separately employed they might shed light on different aspects of community-based natural resource management projects.

Introduction

As researchers we all have conceptions or impressions at least about theories we fleetingly come across or have heard about. Too often we pick them up without really understanding their potential, limitations or how they are perceived in relation to other views. Conventional academic articles with their format prescriptions are limited in the way that they can explore, expose and juxtapose opposing concepts and arguments. One way of addressing this is by adopting the Socratic method of questioning and dialogical enquiry. The rhetorical strategy of a dialogue is not uncommon among actor-network theory users. This essay draws on this approach to conduct a discussion around the applicability of CPR and ANT for understanding and describing the different and describing the practice of human-nonhuman interactions. ANT has travelled and keeps spreading through diverse corners of the social sciences. A general interest in what ANT has to offer seems to emerge as soon as the analyst has human and non-human actors all mixed up in a project case (institutions, resources, common pool resource and not much of naked human beings) and a need to think about how to approach associations in the making arises. It has been hailed by some as the hope and saviour of political ecology, as utter nonsense by others, a self-serving imperialistic and elitist social theory and as a form of radical post-structuralism. Fashions and trends aside, given the philosophical standpoints in this 'school of thought', there are some common misconceptions about how to use it. Obviously, it is highly problematic to talk about a 'true' way of using it, since it is a tool still under development. But it is worthwhile to at least sketch out some of the pitfalls, which tend to hinder the momentum that the approach promises. Here, as a quick outline, to introduce ANT we should mention that it was

set out in order to study innovations – mainly in the sociology and anthropology of science and technology and has only rarely been used to study the bread and butter subject of CPR – community based natural resource management (CBNRM) – the empirical subject matter dealt with in this dialogue. From scattered methodological principles it has grown into somewhat of a social theory over the last decades. But, as we shall see, it is quite misleading to call it a theory in a conventional sense. In contrast, as readers would be fully aware, CPR has a firmly established and well-credentialed relationship with CBNRM both in analysis and practice, but is not without its critics.

For illustrative purposes we draw on our empirical work on Community Based Natural Resource Management (CBNRM) in Kisakasaka, Zanzibar. The text attempts to capture a continuing discussion held many times, mediated by the coffee-machine on the 5th floor at Södertörn University College. Imagine a university staff room in Sweden and a late afternoon coffee break deep in winter. The duration of the play is one and a half cups, which in Sweden amounts to about 10–15 minutes (with or without pastries).

Enter the Researchers

Fred: The Dean suggested that I talk to you about actornetwork theory (ANT) and what it has to offer understanding CBNRM. I'm currently using CPR, drawing on Elinor Ostrom's design principles and I'm fairly happy with this approach. I've heard about how slippery ANT and its advocates can be (in the French intellectual style) and frankly I doubt its relevance to understanding CBNRM in Zanzibar, but the boss seemed to see some hopeful connection, so what can you tell me.

Jonas: Sounds interesting. But, I am no expert on ANT and probably can not do it the justice it needs here – I am exploring it myself as I go along. But it's anything but slippery – it is rather the phenomena they study that could be described as slippery. And it is not more or less relevant to anything in particular. But what exactly are you trying to understand with CPR? I've come across some of it, via Ostrom and some debates, but it never made much sense to me. What are you doing in Zanzibar?

Fred: Well, we're trying to understand what's going on with some CBNRM arrangements in a case study at Kisakasaka. We're interested in the institutional arrangements in place to regulate the use of the mangrove forest for charcoal production.

Jonas: What's a CBNRM? A mangrove forest extraction vehicle?

Fred: I was told that you actor-network theory folk are fixated on technology, but no, CBNRM in the Kisakasaka case does in fact aspire to regulate the extraction of mangroves – so close. The basics are that CBNRM, or in its longer guise community-based natural resource management, in general terms could be described as a locally oriented institution that mediates the interactions of human use of natural resources. Mainly in rural areas in developing countries CBNRM projects have been undertaken to give local people more control over resources that they rely on for their livelihoods. After all these communities have the motivation and are in the best position to make decisions about resource management and use. CPR provides a basic design on which to base

CBNRM applications – without CPR there would be no means to deliver CBNRM projects as we know them – Garrett Hardin's tragedy would still reign. CPR theory has become so influential that Ostrom's design principles have become common sense in CBNRM practice. The design principles have been used both to underpin CBNRM interventions by practitioners as well as to explain CBNRM project outcomes by researchers. All Ostrom and others did was to reveal what people had worked out for themselves in many different circumstances over thousands of years. With this came the realization that local institutions could be crafted to realize sustainable use. This work was then packaged into a ready policy mix that supports practitioners and researchers involved in dealing with CBNRM interventions. CPR theory has been of primary importance in rejecting and disproving Hardin's fallacious conflation of commons institutions with open access practice.

Jonas: Hardin, the king of the commons? But you're spot on there – without CPR no CBNRM projects would be delivered, or at least probably not in a common pool resource-sense. Without the Defense Advanced Research Projects Agency, no emails would be delivered either, or perhaps not as we know them. But why do you use it in research – it sounds like a practioner's tool? To confirm what we already know? To add some minuscule empirical detail to the mechanism?

Fred: More than that – for researchers it provides an analytical frame, which allows us to identify key variables that affect the functioning of institutions that in turn support collective action of resource use in real life situations. This enables policy relevant research that supports planned intervention.

Jonas: If you think CPR has it covered from a research point of view then you do not need ANT. Go ahead and confirm or add some problem within the common pool resource lab and I'll mention to the Dean we had a chat, but couldn't really find any common ground.

Fred: Well I did say that I would talk to you about the prospects of using ANT, so I will try and keep an open mind, even though at this stage I must admit to being more than a little skeptical. Now, correct me if I am wrong, but I'm under the impression that ANT is more applicable to social science studies about natural science lab work and technology than social and political institutions. Remember to keep it simple for me.

Jonas: Good, an open mind – it is all about being open. ANT can be useful, if one subscribes to a main point: that we do not have very good notions in mainstream social science to deal with human-nonhuman interactions and innovation. That is why every inquiry done in ANT is also developing resources adapted to fit the phenomenon at hand, not relying on the translation of them into the same old terms, i.e. repeating old studies and not producing new knowledge. For example, understanding how and when we humans are able to be rational – and not only as a cognitive function of the mind but as collectives of humans and nonhumans. Secondly, you have got a situation of mixed up heterogeneous actors there – actor-network theory can help you shake off some taken for granted categories and sort them out, since the actors are rarely absolutely bound in practice by those boundaries – they are probably in the act of redefining all sorts of boundaries themselves! In other words, it is good for focusing an inquiry, but not as a framework to nail down social life.

Reframing the common world?

Fred: But what is the theoretical basis for ANT? With CPR at least it is clear that it is based around the fairly straightforward assumption that people will do what they do and act rationally in pursuit of their interests whilst also taking the socialized view that these decisions are made within the confines of institutional dynamics. So CPR cannot be accused of adopting atomized homo economicus assumptions. It assumes strategic actors are influenced by norms and consider the future in the action they take. So this gives policy makers, and for that matter us researchers, an insightful point of intervention by assessing the fit of institutions in practice with the design principles. This enables our research work to assist practitioners to adopt approaches that can even normalize the 'right' behavior through the 'right' policy mix.

Jonas: Just like any strategy: Provided the actors behave in a certain, routine way, you are in a good position to identify when and where to try and change their ways. No problem if they are as conservative as you claim them to be. But the ability to predict what will take place after a change such as a CBNRM project, this seems a bit dubious to me.

Fred: Not sure what you mean by conservative, what I am suggesting is
that the heuristic model underpinning CPR, involves a number of assumptions just like any theory of human behavior. In taking this approach CPR at least tries to be predictive and explanatory even though I acknowledge that not all field situations are 100 per cent knowable a priori or conform strictly to the assumptions of the theory – I guess that's the point. Then tell me more about ANT – how would it be useful in the field, in identifying and setting-up useful understandings that can be built upon over time.

Jonas: In terms of useful understandings, one could say that actor-network theory is for the social scientist, not the commissioner of a project. It is not a theory in that sense, making predictions with some degree of certainty on causal relations; it is more about how to approach the topic – the object of study – in an investigation. Given that the most probable certainty about organisations of any kind is that there's always change around, ANT nudges the researcher to be more interested in how they try to keep their shape rather than in how to change them. Organisations are contingent anyway, and rarely because of some inner drive to change but because there is just a lot of change and entropy around that they have to deal with. However, the contingent nature of organisations is an empirical question not very well suited to build in a priori assumptions – hence keep any kind of preconceptions that you have on the topic on a very short leash.

Fred: From what you have described I still can't see the practical value of ANT. What use is it to CBNRM policy development if it doesn't provide analytical insights about social action or seek to provide direction to inform a desirable course of action?

Jonas: What use is 'analytical insight'? In the sense of being somewhat clear on empirical matter? Fine, ANT has plenty of practical value in that regard, but not in the sense of knowing in advance what the active ingredients are in an event and what they do? Then why deal with empirical matter at all, since you already know the answers due to your enlightened a priori understanding of the constituent elements. And then, practical value for whom, really? How? It's

not apolitical just because it does not tell you how to behave. It tells you how to study how you behave and the resulting accounts are as political as anything else – in principle. Since when is knowledge foreign to politics? To matters of concern? That is, not delivering remedies at the same time as you're trying to understand a problem, but successively – turning Marx's dictum on its head so to speak, the problem is not to change the world but to understand it first. In this regard, doesn't CPR have a rather fixed view about what is the relevant social and spatial space to study CBNRM projects? I get the impression that CPR is only concerned with 'local' institutions. Doesn't this preframing fatally limit what the researcher (and the policy maker for that matter) is able to consider as explanatorily relevant?

Fred: Well, the local in this sense is a specific place constituted of people and the environs where the action occurs. The notion of CBNRM is firmly rooted to particular project people and their places and resources. Local people are the mediators of resource use and I acknowledge that 'local' and 'remote' contextual forces can be highly influential, but they can be handled through effective institutional design. Having said this, however, some recent CPR scholars have started to consider how exogenous forces affect the situation of communities.

Jonas: So, how do you actually draw the line between local forces (or actors) and others, not involved in 'particular projects' but still influential in them? Aren't all actors or forces local (somewhere), even 'the global' is localised and performed in particular channels and nodes?

Fred: Well, sometimes such forces can be invisible or hard to detect, but still potent in effect. Identifying their implications for individual decision-making around resource use must enrich our understanding of the site. For instance Agrawal, and Steins and Edwards amongst others, have provided critique and proposed methods that researchers in the field might use to include contextual analysis in their studies. They argue for instance, that remote contextual factors affect CBNRM projects by influencing the ability of the resource system to produce benefits and by influencing demand for the products and services derived from the common pool resources. Admittedly, CPR as yet provides no clear analytical approach to incorporate these factors, really relying of researchers discretion from one case to another, but I think CPR is moving in the right direction here.

Jonas: What you're saying here is that at least CPR is starting to think about the relationality of human actors across scales? But what are these 'invisible forces'? Some kind of phlogiston? If they're such formidable 'forces' why would they be so hard to detect? Aren't they made up of people and things acting in your particular setting of interest? Surely then it is a matter of carefully tracing the relations between these entities and identifying how they are acting. What I would really be interested in here is not the explication of 'relevant' space or scale or the social relations as such, but of the changing associations that are relevant to the struggles and contests over CBNRM in the particular application under study.

Fred: OK, then if I read you right, you are saying that when using an ANT type approach you would try and identify associations that that are constantly being shaped. I presume by that you mean between people and things that are somehow acting in the empirical setting related to the CBNRM in some way. That does not sound too different to CPR, particularly in its expanded 'contextual' form, although the detailed tracing bit sounds a little overzealous, when one can just

fit these associations in the analytical categories provided by CPR or describe them in more general terms. This is more or less what we did in our Kisakasaka case study when we considered population and market shifts as possible influential contextual factors. We didn't trace these factors through explicit actors relations in any meaningful sense, we more described the likely extent of influence on local behavior. But I'm curious, methodologically how do you make causal connections between one scale of action and another. You can't rely on local people telling you global effects and so forth – often people in such situations will be aware of the effects, but not say of the broader political economic forces that are acting on them and limiting choice and opportunity.

Jonas: Why can't you rely on the 'local' people telling you about their situation? How could you know more than them? On the other hand, if your intuition is that there's more stuff acting in the situation, find a way to trace it. What ANT says is that you would make a bad inquiry if you presupposed all those forces and contexts; what ANT does not say is that they're necessarily not there. On the contrary, it's quite interesting to find out which of all those presupposed 'forces' actually makes a difference or not. ANT kinds of flatten out those issues, because we social scientists are easily mislead and grant powers too easily to things that come from somewhere 'above' or beyond the immediate physical place of our initial interest.

Fred: I think I can agree that even if a CPR inspired study of a CBNRM does employ some sort of contextual explanation it is unlikely to be fully elaborated or actively integrated into the decision-making rationales and actions of resource users.

Fred: OK, onto more semantic issues. When one thinks about ANT, it is easy to get daunted by the obscure jargon. How can an ordinary person relate to such nonsense terms as monsters, quasi-objects and actants except as science fiction? Why describe what people and things do in this way? CPR, on the other hand, seems to be common sense to me. People can relate to, understand and practice by the more concrete and functional categories of action such as enforcement, monitoring, rules, membership etc.

Jonas: Ah, so you know more than you're letting on.

Fred: No not really – I thought I would read up a bit before our chat, but, frankly it didn't help, hence the 'contextual forces' versus 'tracing' discussion we just had. I still don't know my actor from my network or is that the point – maybe I am starting to get it…

Jonas: Oh yes, that's the point indeed: how can anything or anyone act alone? Without anything moving, shuttering, resisting? If anything can act, it's because there's something there to act upon. Hence, the actor and the acted upon are relational – a network made up of actions. Without the actors there are no networks, and there are no actors without a network. Doesn't this make 'more' common sense than the dubious division of the world into active subjects (humans) and passive objects (nonhumans)? How could you talk of an estuary as a passive, dead object? So, common pool resource and common-sense terms. How much work has been invested in making CPR common sense? A lot, if you would chart its influence on the policy-making you just mentioned – the World Bank, the FAO. The technical terms are like tools. They are useful if you learn how to handle them, but once the work is done you also have to learn how to translate into

different formats. Why should 'ordinary people' (who is that, by the way?) relate to reverse geocoding without training in GIS? The sense of more abstraction is perhaps because of ANT's different ontology. Facts and fiction – where do you draw the line between these and where do your actors draw it – if they use the categories at all? When and where is a fact a fact? If a fact has some effect, it's because it is circulating in a network. But before it can circulate in a network as a fact it's usually a controversy. And in those controversies it's not a good thing to act both as scribe ('describing') and as a judge or legislator ('prescribing') at the same time. CPR theory, in its effort to extend the reach of its design principles, apply a simple formula for input-output in order to be both at the same time. When you're studying controversial matter – like who's to manage the mangrove forests and how – you're not on firm ground and you cannot decide a priori what is actually what!

Fred: CPR theory is not simply input-output – through the design principles it's trying to both understand and better manage the social relations (i.e. the messy middle bit) of resource use. It's clearly interested in input and output, but its business is purpose-oriented institutions and therefore ordering of human interaction around specified natural resources. ANT seems to me to be a mere description of what people, and well, what shall we say 'non-people', are doing? That's OK – exotic ethnography has its place, but such research is of limited value in informing broader understanding of like situations and is impractical and unsuited for policy applications.

Jonas: So, we need experts to tell us what to do, after all? 'Only a description'? What else could a good analysis be? What do you need theory for anyway? Law-making? ANT is a way to make good descriptions of fairly complex events, not to do routine explanations by way of some 'hidden laws'. Objective accounts of social life are a bit harder than squeezing them into 'theory', because humans are usually not as recalcitrant as nonhumans. And what can people do without things? Live like baboons? And if you are more interested in the inner-workings of humans, perhaps psychology is more appropriate than human geography and social theory? Oh yeah I forgot you already have CPR.

Fred: At least, with CPR the design principles frame and focus the empirical research. How do we know what to focus on using ANT? In the Kisakasaka study our departure point was that we wanted to know how the village institutions operated and with what implications for sustainable forest use. The CPR design principles have been very good at giving an explanation of a failed CBNRM institutional in this case.

Jonas: As soon as something doesn't run as smoothly as anticipated, there's a lack of functionality? Seems like you are mistaking controversy and the irruption of difference for dysfunction. And that's the working model of politics? Well, is it not a bit problematic to talk about development, projects and politics if you keep siding with only one interest? ANT was set-up to help focus on what is making a difference in an account, resistance and friction as generating new states of the world – that is, on understanding how controversies can lead to stable organisations. What's acting is interesting, what's not acting is irrelevant. So in the Kisakasaka work did CPR help you find out what made a difference or was it a 'state of the CBNRM' type of exercise?

Fred: Well you are right in a way, using CPR we were able to find out what and was not working regarding the institutional arrangements around the Kisakasaka CBNRM project, but it didn't really reveal how or why this situation had come about. But, to elaborate, it told us that most of Ostrom's design principles were not operating well in practice, including ineffective monitoring, enforcement and sanctioning, lack of effective collective choice arrangements, poor communication and low trust between community members, forest cover loss, community membership uncertainty etc. In other words it enabled us to understand what was going on there – which bits of the institutional arrangements were dysfunctional and required mending.

Jonas: No wonder it was unsuccessful: a successful common pool resource design failed to show up because common pool resource design failed to show up? And that's an explanation in the common pool resource approach? Now we know it wasn't CPR as practiced at Kisakasaka according to Ostrom's principles. The Kisakasakan's could have told you that before you read all the books. They could have told you exactly how things transpired and what's wrong with the CBNRM project. A more interesting question is why so many theoreticians seems to believe in plug-and-play ways of crafting institutions? All institutions have their quirks (only the ideal ones of Plato seems not to have), just like any machine or mechanics we can care to throw more than a passing glance at. How many machines run well without some amount of maintenance? Some helping hands? Institutions, just like humans, do not live alone.
Fred: OK, I am listening, how could ANT make a difference in describing what happened at Kisakasaka?

Jonas: Follow the actors, is what actor-network theory says, give them leeway and they will show you life, social life, collective life. Don't treat them as dupes who are dominated by their 'social structure' of 'context', 'norms', 'environs', or 'genes'. They might conform to common pool resource's boxes or not, but how would you know if you have already set the parameters of their skills and competencies? This is something quite different than reducing humans to slaves of their rational minds and relegating all other things to become mere intermediaries, dead and dull. ANT can help you focus on anything you would care to problematise, not only 'individual human interests' – what evidence do you have they are the only ones shaping a situation, a project, a resource? CPR seems to take the individual human being as the sole source and base for society – even in its 'context sensitive' versions. This is highly problematic – and abstracted – because of the two notions of 'individual' and 'society'. They are both effects, not causes – if they were causes, we should redirect our focus on them, instead of merely lingering on their effects.

Fred: Isn't it better to simplify and reconstitute their (the actors) actions into a common framework related to explaining the viability of the institution under study. This then enables us to see bigger patterns that help us to shape policy and scale up the relevance of case study findings. We should continue to strive to refine the explanatory power of theories, to reach at least a partial intersubjective understanding on what we for now consider to be generally applicable 'objective facts'. All policy makers and those interested in progressive change need resources to draw upon that can be easily applied and that they can sell to prospective backers and donors.

Jonas: Well, a policy is always a hypothesis on the state of things. To act on it is also to test its validity. ANT is no stranger to comparison and simplification. You only have to remember to keep your descriptive vocabulary separate from the actors' own, not to confuse or, worse, substitute their meta-language with yours, their framing of each other for your model of their world. Don't confuse your resources for studying the topic with the topic. After all, would a bacteriologist confuse the microscope with the germ? It enables a different view of the germs, of course… The difference between ANT and CPR – besides philosophy and ontology – is that the latter defines what 'it' is before you, the former is content to talk about how you can get a better description of it. For one, ANT is all about relations, and their alwaysemerging qualities or ways to stabilise a certain quality with them. A sensibility to things becoming, not handling the trajectories of negotiations, controversies, or conflicts like pre-fab jigsaw-pieces… Now you have me ranting again. The short of it is: it's always comfortable repeating someone else's study, but why spend years of repeating what we already know? Playing Tetris is just as fun, putting things on top of other things…

Fred: OK, so you mentioned that ANT has claims to objectivity – in what sense – I'm not clear about this. How could ANT be objective when it is the researcher perceiving a description of events and judging what to include in their account? Isn't this no more than the researcher's subjective description of what actors and objects are saying and doing – is this not an extreme version of interpretivism by another name?

Jonas: But then again, how could it be otherwise? Are CPR analysts really aspiring to be neutral observers? Aren't they in the same situation as well? Or have they found some direct way to make things-in-themselves appear on a piece of paper without transformation? Even the physicists would be interested in that one. It is precisely because of the urge to make knowledge movable and transmittable that we have to make sure we allow for as much objectivity as possible. But that's the cost of useful knowledge. The price is paid by letting the actors object to our statements about them. This allows their objections to be heard, creating a stronger objectivity. The sciences (and social science in particular) need to become more objective, not less, but not objective in the vulgar sense of disinterested scientists – how can you be curious and detached, interested and disinterested at the same time?

Fred: At least CPR analytically treats every one equally – well all the humans at least by assuming that people are intentional and rational. And more to the point, getting back to your assertion of 'objecting' helping to foster objectivity – how can non-humans object to a researcher's depiction of them? So how could ANT give the same treatment to a chainsaw as they would a person – isn't that unethical and 'undoable' given that it, the chainsaw, is inanimate and can't communicate, refute, deliberate, ponder or reflect?

Jonas: A chainsaw might very well refute your idea or knowledge about it. It might suddenly break down due to your lack of attention and maintenance; or it might redress your idea about how trees work. Who says it has to object with words? As if humans always object verbally? They, at least, are acknowledged when they 'vote with their feet.' It is our job to translate all kinds of objections into text – granted, a tricky thing to do. What ANT says, called the principle of generalised symmetry, is that 'the social' should not be conceived as some special stuff which explains all other actions: institutions are made and made durable, made rational, made

calculable, with a lot of different kinds of entities including 'natural' processes – far more bits and pieces than what a face-to-face human interaction matrix could account for. The practical value of symmetry is obvious: As long as you don't confuse your analytical vocabulary with the actors' accounts, or, which really amounts to the same thing, smear a 'social scientific' meta-language over all the fidgety and fractured events in your case, you are in a better position to see what made a difference. What CPR does is to suspend all asymmetries, power relations – by treating everyone equally – among humans into a cognitive function of cost-benefit, while excluding a lot of the rational action possibly provided by other, extra somatic instruments. And then they turn to 'contextual factors' to give the analysis some familiar backdrop that simulates real life. If that's the equality you want, go ahead and shape up the actors. ANT is different in that it does not prescribe the shape or size of the actors a priori. If the actors don't fit the frame you've made, throw away the frame – do not try to dismember the actors! Huge actors, or a 'context', in any terms of units – like empires – commonly considered powerful because of their size, might suddenly deflate and become no big hurdle to get around in a project. Small actors, in metric terms – like a screwdriver – might suddenly become a huge obstacle for the British Empire's campaign against the Zulu. As a Swedish proverb goes: a small tuft often overturns a big load. So an actor's size in a project is variable and relational, and there's no necessary connection between its metric measure and efficiency or power to make things happen.

The possibility of a hybrid approach

Fred: OK, still vague, but it sounds like ANT might be useful in giving the institutional actors more life and enable us to capture important transition moments – however, I'm still uneasy about drowning in a sea of heterogeneous relations – whatever that might mean – without at least a raft-like frame to keep me afloat. It seems like actor-network theorists do not like any sort of frames except those of the actors, so how can we can we cooperate to work on a hybrid approach?

Jonas: In contrast to the view of Steins et. al. is the two approaches are incommensurable, so any kind of hybrid would be monstrous. There are so many essential differences in their epistemological and ontological thinking particularly around preframing and circumscription of phenomena of research interest, the treatment of human and non-human entities, notions of what constitutes an actor and assumptions of the importance of understanding flux. But the stuff you are curious about in Kisakasaka reminds me of why planning keeps interesting me: most projects drift and turnout quite differently than intended at the outset.

Fred: OK, maybe ANT can give us a different story of what has happened at Kisakasaka. So you are suggesting that I should not try to use a hybridized CPR/ANT approach. So perhaps these two approaches, although uncompromisingly different in focus and methodology, could be employed separately, to reveal different aspects of CBNRM interventions.

Jonas: Yes it is possible, but I stress that this might be harder to do than say. No offence meant, but it may be very difficult for you as a CPR inspired researcher to detect a non-CPR structured reality in the field. It will probably demand some practice and reflexivity not to unintentionally be guided by a CPR frame to help you sort out and simplify the messy (to you) socio-ecological interactions that you will inevitably be confronted with. Perhaps I can help with some tools that

will help you with this. In return you can perhaps shed some more light on why CPR has become so prominent around CBNRM projects despite its indifferent record as a predictive theory of collective action.

Fred: Well, thanks for your time Jonas. Just to reiterate, so I have it clear – well as possible. You say that ANT offers increased opportunities for objectivity because it put the entities that act into relational focus and enables 'them' to object to how they are depicted by the researcher. OK, I will need your help here to elicit the objection of non-human entities; with humans they can at least say to me you've got it wrong here. Having said that though, I think two of the biggest takeaway messages for me from this initial discussion are that nonhuman entities need to be taken into account – how this is done in any meaningful way for me needs further consideration. The other is the paradox involved in either adopting a social theory that has been built from experience (trial and error) and that guides the data collection and analysis such as CPR versus ANT, which provides methodological pointers, but leaves the scoping and framing of what's being researched entirely subject to decisions by the researcher in the field. I get the feeling you could end up anywhere with this approach, which may be the point. A concern for me is the problem of not being able to compare case study results and therefore progressively build better theory, which can help inform policy.

Jonas: Admittedly describing the role, objections and relations of nonhuman and human entities alike requires a research thoroughness that may be more taxing than simply picking up and applying an off the shelf approach like CPR, but depending on what the research problem is it may be worth your while ANT work will not give you smoothed-out, neatly comparable results from disparate case studies, but it will certainly add a lot to generating an understanding of how relations are configured to either maintain or to disrupt CBNRM projects.

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Postscript: Animated discussions around the coffee machine are continuing at Södertörns with no end in sight.

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