

I open this public meeting of the Doctorate Board of the University of Twente.

First of all I would like to express my warm welcome to all of you. Thank you for being here today. To the public defense of the doctoral thesis of Visor from Enga.

In particular my welcome to the family, friends and colleagues of the candidate who have come from all over the Netherlands as I understood. Thank you. Friends and colleagues of the candidate who have come from Cologne, they are also here.

Colleagues from the University of Twente, colleagues from other universities.

From further far joining online we he, the partner, no not correct, of the candidate and the family, friends who could make here today in person.

Welcome to the supervisory team of the PhD candidate on the right side.

Professor Thun Hart from the University of Twente. Professor Bodech, University of Cologne.

Dr. Weber, University of Twente and Professor Kalkins, University of Beiroth.

My special welcome to the members of the graduation committee, opposition of the ceremony today.

Dr. Brosh is joining us online from the Czech Academy of Sciences, Czech Republic.

Thank you for joining us. Dr. Bond, University of Maastricht, the Netherlands.

Dr. Ozerall, University of Twente and Professor Blamford, also University of Twente. I'm the Dean of the Faculty of Behavioral Management and Social Sciences, Professor Bondaruk, and I'm replacing the Rector Magnificus today.

May I invite the candidate with his paradigms to take their position in the podium.

Please be seated. Thank you. Dear candidate, could you please give us a short summary presentation of your research? Thank you. Director, many thank you. Any thanks. Thank you all for coming. Yes, I'll give a brief presentation of my thesis which is called bordering animals biosecurity in the Okavango Delta in Botswana.

So my research is about biosecurity. Biosecurity can be defined as the effort to secure valued forms of life from biological risks. It governs life at the level of the population, sacrificing the lives of some communities and or individuals considered risks in order to promote others considered valued.

Biosecurity is centrally concerned with borders and separation. It plays a big role in sectors such as agriculture where pests have to be kept out or in nature conservation where exclusion is focused on so-called invasive species.

You will probably know biosecurity from COVID or maybe from posters such as these which you can find hanging in many European airports.

Biosecurity is also a violent practice and it might be contested yet what we see is that it is regularly depoliticized.

Any sort of biosecurity intervention is often instituted in a top-down technocratic manner and through emergency discourses precluding critical attention.

In this thesis I aim to repoliticize biosecurity to make visible its impacts and the actors who are behind it. I thus studied how is biosecurity done and asked who

benefits from it and who loses.

I answered this question in the context of the Okavango Delta an inland wetland in the north of Botswana. It is an interesting case because biosecurity here comes in two forms.

Firstly there's conservation which aims to secure wildlife by keeping livestock out of the Delta and second there's food and mouth disease control which aims to secure livestock populations by keeping the food and mouth disease virus that is present in the Delta away from the livestock. In this thesis I studied how these two forms of biosecurity interact with each other as well as other forms of practices. The Delta also provides an interesting case because of its post-colonial context.

Biosecurity is mostly studied in the global north and the raw coloniality has been somewhat overlooked in the literature. Finally the study of biosecurity in the Delta is interesting because of recent innovations in conservation and a food and mouth disease control that are currently reshuffling biosecurity in the region.

In my research I aim to connect these contemporary developments and the paper took a combined historical and ethnographic approach tracing how biosecurity developed from the 1960s till its present time.

For the historical research I relied on research in the Botswana National Archives as well as oral historical accounts of people who were involved or affected by developments in biosecurity.

The ethnographic research built on interviews, focus group discussions and observation of and participation in biosecurity practices, as well as the analysis of various kinds of documents such as policy reports and scientific literature.

Most of the ethnographic research I conducted in Habu, a village on the edge of the Okavango Delta, you can see it here. Here I was helped by my research assistant Raymond Kanjo, Arnold Olafile, Arnold Mecopo and Lazro Olafile and all three of them gave valuable roles, played valuable roles in translating interviews, managing research relations and in many more aspects of fieldwork.

Conceptually the thesis draws attention to the roles of borders in biosecurity and specifically draws on the notion of more than human bordering. With this term I indicate that borders are not just out there but are continuously made and unmade in social, political and multi-species interactions.

In other words, borders are not just lines on the map but are also epistemic, social and political. They are not permanent structures once built but need to be enforced, maintained and as they are challenged resisted and also subverted. And bordering is not just done by humans as non-humans are sometimes co-opted to enforce borders, at other times become the ones challenging borders and also they construct their own borders. To further develop this notion of more than human bordering, the thesis distinguishes four subprocesses, each of which draws attention to a different aspect of bordering.

These include categorization of the species and communities that are either valued or considered a risk, of territorialization of areas to which different species or communities belong, infrastructureing of the material boundary that is built, repaired and sabotaged and boundary work between groups of people who all claim to be in the group that can rightfully make decisions about bordering.

In the thesis, all of what I have explained so far makes up the introductory chapter. The actual research itself is then reported in the next four chapters with each chapter examining one of these four processes. In what follows I will

summarize each of these chapters and then give a short conclusion.

The first empirical chapter of the thesis starts from the 1960s and shows that the categorization of the buffalo as disease reservoir happen in conditions that are contingent and unique to Botswana. It describes how veterinarians at the time were struggling to control and understand foot-to-mouth disease and how their efforts to control to find a culprit for disease outbreaks were influenced by the idea that foot-to-mouth disease was a serious problem to begin with, an idea inherited from Britain, the colonizer of Botswana. The interest, especially of post-colonial elites, to maintain export industry, to export beef to foot-to-mouth disease free countries and the buffaloes themselves who of course do not occur on the British island but also but do from across large parts of Botswana. By pointing out these conditions that are once global and local, the chapter challenges the idea that categories from colonizing country simply defuse to its colonies as if local environments and actors had no world to play in the development of these categories.

Later this categorization of buffaloes as foot-to-mouth disease reservoirs led to the building of Botswana's so-called buffalo fences which demarcated areas for livestock and areas for buffaloes. In chapter 3 of the thesis I just focused on the prevention of buffalo livestock contact through the creation of a The story of this territorialization is that livestock free zone was simultaneously made a conservation area. While veterinarians had the aim of containing buffaloes inside the delta in order to prevent foot-to-mouth disease spread to livestock, conservationists they were interested in keeping livestock out of the delta to prevent grazing competition with wildlife. These conservationists who were associated with the UN Food and Agriculture Organization suggested the building of a fence but in order to they had to rely on the argument that buffaloes are a threat as veterinarians were the ones with the resources and the political power to actually build the fence. The chapter shows the impact of building this fence on local communities who lost access to reserve pastures now used for luxury safari tourism as well as the instability of the alliance between conservationists and veterinarians.

Today the total separation of areas for buffaloes on the one hand and areas for livestock on the other is being challenged.

Elephant populations have grown and are increasingly breaking the fence leading to efforts of repair as well as other responses. Chapter 4 of the thesis zooms in on the situation which takes the materiality of the fence as its object of study and shows how it is negotiated between defense designers to elephants and other stakeholders.

The chapter challenges the modernist view that a porous locally broken fence is and argues that when seen from a more than human perspective which takes serious the infrastructure and goals of elephants and not just humans there's actually an interspecies compromise.

As elephants break the fence and build their pathways across it and fence builders destroy the elephants pathways and repair the fence this is a dynamic form of coexistence.

Finally in chapter 5 the thesis zooms in on the most recent developments in biosecurity and in the case by a number of NGOs these recent developments are recasting the role of local people suggesting that they can take over the role fences. By strictly herding cattle they are considered able to maintain a more flexible and local separation of livestock and wildlife leading to a more fluidly inhabited landscape.

Echoing at ideas that are circulating more widely the NGOs argue that the promotion of pastoralism will simultaneously lead not just to better outcomes for pastoralism but also for conservation.

The chapter shows however that this win-win theory is contested by pastoralist and conservationists and that in practice they argue for arrangement that limit conservation or pastoral outcomes.

Since the compatibility between conservation and pastoralism is contested and boundaries are constructed between the two the analysis points to the need to replace the win-win theory with a recognition for the need of compromises. The chapter argues that such compromises should be jointly negotiated and not just follow the demands of powerful conservation donors as seems to currently happen.

In conclusion if we take the results of all chapters not all of which I could present here it is clear that biosecurity in the Okavango Delta is developed in complex ways although there are also a couple of clear continuities.

Firstly in terms of agency biosecurity in the Middle East to a large extent led by actors from the global north. There's resistance, co-optation and other forms of involvement by a range of local actors including elephants and other non-humans but policy makers, NGOs and researchers from the global north still play an outsized role. In terms of consequences there is also an asymmetry. Most of the benefits are captured by actors from the global north and post-colonial elites while the costs are largely borne by local people and wildlife. This presents a continuity between the colonial period and the present day and suggests the need to decolonize biosecurity. This indeed is a new step in the politicization of biosecurity and offers a rethinking of the future of conservation, food and mouth disease control and their roles in the Okavango Delta.

Thank you. Thank you very much.

We invite Dr. Broz to start the opposition. So good afternoon to everyone and excuse me once again that I have to be online today. It's my great pleasure and honor to start this opposition today, opposition to wonderful piece of writing, wonderful thesis that I've enjoyed very much engaging with and let me then start by a few prizes. First of all I'm of the generation that witnessed the fall of the Berlin Wall and back then it seemed that the bright new future is upon us in which we will have no walls, no fences, possibly no borders. How naive, right? How naive we were back then and I would say that increasingly we are finding ourselves in the world that is actually much richer when it comes to fences and walls and indeed borders and what they mean and in this sense if you look at the vast scholarship on borders and fences in a way the one that is probably the least developed and that needs the most attention are exactly those barriers and fences that are part of veterinary infrastructures, part of biosecurity infrastructures and they really do beg for our attention and they really do beg for certain recontextualization that was very pertinently called in the thesis repolitization of biosecurity, right?

So this is absolutely spot-on topic with wonderful execution of it.

The thesis is empirically very solid, very strong as I said, the demographic part is very convincing but so is the historical part which is something that is not always the case, say, in anthropology that sometimes is, I would say, methodologically a bit weaker when it comes to archival research and combination with oral history and methods and so on. So I really do have to praise this very rich and robust methodological grounding of the whole thesis. Now my role is slightly different though today, I have to be pushing the candidate as the devil's advocate if I can put it this way and I've chosen for this one aspect of the thesis which is attention to care or use of the concept of care and remarkably in the

introduction the candidate notices that the beginning of multispecies scholarship was partly marked by some kind of naivete when it comes to this, you know, happy clappy coexistence within the modern human world but very soon we became reminded by the unfolding number of works that there are also tensions and frictions that actually deserves lots of attention, right?

And then very rightly the candidate then notices that you have to choose who you care for, you cannot care for all the species and the display, you have to make priorities and how these choices are made, this is actually to a degree the topic of the scholarship on care is really vast and is far from being naive, very often it notices all the ambivalences of care, the violent face of it and let's say the patronizing themes in it and so on but what I would especially like to share with us is the object of care because when he says that we cannot care for all the species and definitely not in the same way to the same degree we kind of reduce the possible object of care to the species level which is only one of many possible levels and it's actually in our everyday lives or anyone's everyday life it's much more common to care for particular animals but if you speak about animals here or certain groups of animals be someone's flock, herd or other other kind of unit and in this sense we can we can also use the concept a bit more creatively as you indeed did when talking about repairs in terms of care right, repairs of the infrastructure repairs of the of the fence but unfortunately this was not you did not reflect on it more conceptually what you did there and so but still I would like to invite you to think about the object of care not necessarily being entities or pieces of infrastructure but relations in a way right and that would probably open a slightly different perspective on the use of the concept so please if we can if you can now elaborate on that a bit that would be lovely thank you. Yeah my learned opponent many thanks for this question I think the the concept of care was sort of in the background of the thesis so but it has been a bit more on the foreground of my thinking so I appreciate the opportunity to to answer this to this question care usually indeed would have an object I care for this or I care for that with the multi-species turn in social sciences there has also been a relational turn so now we think about what is a good relationship between the other and I and maybe this relationship even deserves primacy in terms of our analysis so I was quite inspired by the work of Eva Giraud who has worked on activism in various arenas so to say to look at the concept of entanglement which is fully relational but also then to say okay if we have a certain relationship with one thing or one object what is foregrounded there but also what then is excluded because any kind of relationship also implies that another relationship is not enacted so this is sort of the the thinking that from which I departed my thesis where indeed if you care for cattle perhaps that means that you have to care less about the foot and mouth disease virus on the question of whether the species should be the right level on which to think about this I think the reason why I chose to focus on species is because of the relation between biosecurity and biopolitics which governs life at the level of the population so is centrally concerned with collectives I think also ethnographically with in habu most of the pastoralists they know their their animals individually they can recognize they know exactly yeah their histories where they come from what they need their personalities but at the same time there is still a lot of emphasis on the herd the animals are always part of a herd so I would say perhaps that for them care would maybe work on the level species but also on the level of the herd yeah in chapter 5 of the thesis I I focused a bit on on pastoralism but also as a relation to conservation where the role of cattle as a as a species actually became more of a contested arena so this is one of the reasons why I chose to go with this species thank you very much and I believe our time is up you have you have bit of time if you want to ask one short question it's more of a comment really but I kind of wondered whether this different unit of care that might be part of the enactment of care is not actually possibly the source of mismatch or friction between different actors of your thesis right so thinking on the individual animal level slash the herd level on the side of the pastoralists as opposed to the species level or

bigger population level on the side of of say state agents of biosecurity might not be to a degree the source of misunderstanding friction or you know general general trouble but it's it's really I think you did you did answer very beautifully and now I'm partly repeating what you've said in my words so thank you very much I suggest that we move on and I would like to invite professor the bond to ask his questions thanks a lot dear candidates let me also start by congratulating you on your work I think your thesis is really ambitious really original as well and it succeeds very nicely in bringing together a whole range of insights from political ecology but also STS environmental history and all this together sheds really new light I think on conservation practices in in Southern Africa and I also really like the lens you used taking mundane material objects the southern buffalo fence as a site to discuss these wider issues I have security but also colonial legacies human animal relations etc I also think it's clearly and elegantly written I read it with a lot of pleasure but of go to challenge you with some questions a few possible topics but the one I'd like to start with maybe might not be so much of a surprise I'd like to ask you a little bit about non-human agency and I think you make a convincing case also in your presentation of how the Agency of elephants have shaped the dynamics in and around the fence or even the fence itself particularly because of their power of breaking breaking through different events now I might try to push you even a bit further in the direction of a multi-species anography so adding a few species to the analysis and the question I would like to ask is what if we look at this question of non-human agency in this concrete case by focusing on other species that are involved in this dynamics so these could be buffaloes this could be the cattle this could be the flies that probably easily fly over the fence you could also think about plants that have different dynamics on both sides of the fence also because of the presence of elephants or the absence of elephants and these plants then might have again effects on the mobility of people or other animals so in brief how would the perspective on non-human agency in and around well around the fence change if you wouldn't pick the elephant as the main actor but other potential species I need our opponent non-human agency is is a big topic in the thesis mostly foregrounded with words to the elephants as they are breaking defense and building their pathways I think it also does a bit more in the background come up in chapter two of the thesis where the buffaloes are identified as a constitutive actor in put a mouth disease science in Botswana so here the identification of agency for buffaloes is a bit following to a certain extent more of a logic than an ethnographic or or yeah the descriptive approach coming from the archives but the argument is that food to mouth disease science developed separately or differently in Botswana as it then as how it did in the UK in Britain where the concern for food to mouth disease kind of first arose and then also influenced what happened in Botswana so yes the fact that the buffaloes were in Botswana did shape veterinarians investigations in what the mouth disease does what it is and it is apparent I think also if you think of the traces of the veterinarians found this is a sort of coproduct co-produced fact between the scientists and their instruments but also the buffaloes and the virus itself so it is less of a apparent agency I think because it's not it's not a resistance which usually kind of pushes back against human projects and then comes to the forefront quite visibly but it is more of an agency that in this case for this chapter we mobilize to point out the uniqueness of the Botswana case which has implications for global food to mouth disease control policy I think also the Tsetse fly we can usefully think of it as an agent in the story of how the Okavango Delta was made biosecure so the Tsetse fly it occurred in the Okavango Delta well for a long time with winter pest and the populations kind of dwindled then winter pest was eradicated or kind of waned disappeared from the continent and then the Tsetse fly came up again and Delta was yeah what actors would have called infested so a lot of people stayed out of the Delta and this was one of the reasons why then conservationists used the argument to say well maybe we should make this area a conservation area because in any case it's not useful for animal production or agriculture people are not able to live here properly so let's make it a conservation area so in this sense also the the qualities that the agency of the

Tsetse fly was drawn on by humans to my conservationist to make the Okavango Delta are part of its more me game reserve a protected area so yeah then human agency comes also in a way that it is enrolled to that new non humans are enrolled by humans to push for certain political projects okay thank you maybe I have a question about a different topic as well and that's to do with the role of discourse or the power of discourse and in particular of the conservationists so you in your analysis you show that in the more recent time period there's a new rhetoric around conservation that rejects old fortress conservation but you also show that all kinds of dynamics you've also mentioned it in your presentation that are colonial and that are exclusionary that those are persisting so despite the discourse and so in a sense my question is how do

we interpret the gap between the discourse and the practice right so does it suggest that the transformative power of discourse is ultimately limited should we get rid of the cultural turn and say that discourse is ultimately unimportant because it doesn't do anything doesn't changing the discourse hasn't led to and can you say maybe a few things as to why is apparently so difficult to translate these lofty ideals in in the discourse into the into practical solutions highly learned opponent yeah this course is in a way quite present in the thesis again but also in the in the paper we use framing as a concept so we kind of touch upon it here and there I think the power of discourse perhaps doesn't it's the thesis focuses cheaply on practices and this is in a way a challenge to the idea that discourses shape sort of totalizing power in shaping what the world becomes I think it doesn't mean that discourse does not have any power so the conservation NGOs who are drawing on inside out conservation discourses are of course also using this to raise donor funds and this is a very important part of the reason why they are in fact able to do the work that they are doing this is also in maybe an interesting thing to note that challenging it is also then the counter discourse is then also perhaps jeopardizing the possibility of these NGOs to raise donor funds or at least that is concerned that some of them have raised but in the end I think the attention to practice helps us to make these projects better to understand maybe shifted discourses to take into account practices and also to yeah perhaps limit the sort of in when we're talking about academic context to limit the well as I said to challenge the idea that discourse is totalizing and to shift our attention a bit to what is actually happening on the ground and the effects that these conservation projects have because it is yeah it's as you said it's quite lofty and it sounds all good but then you need to look at what what's actually happening okay thank you thank you very much for the discussion and we continue dr. Oswald would you please ask your questions the candidate let me also join the other committee members in congratulating you for accomplishing this research carefully executed beautiful reason I very much enjoyed learning about this topic I come from natural resource governance background and I found fascinating to see that concepts empirical aspects methods came together in a very different fields field of application especially these four bordering processes that you discuss sometimes focusing specifically in chapters sometimes combining in another chapter and in the synthesizing in the conclusions your results your reflections from all these four processes my question to you as you probably expect is going beyond a bit specifically focusing on each but acknowledging that these processes are complex dynamic could you offer a reflection on what are the entire dependencies or interlinkages of these processes also thinking about certain outcomes because early on in your thesis you also refer to different justice aspects in terms of recognition distribution and restorative restorative justice and especially thinking about your multi-species or beyond human focus maybe linking to multi-species justice what would the interrelationships between the whole building processes the opponent this is great to talk about the bordering processes and their interlinkages to tie things together as I presented them in the thesis the the bordering processes they are discussed separately as you mentioned in each chapter and the this is maybe more of a pragmatic or methodological or analytical choice then it is a yeah of course you have to make choices so in fact they are very much interlinked and and they don't necessarily follow the sequence that that

goes through the thesis with if you follow the chapter structure so the categorization which was the first sub process that was analyzed it often goes together with boundary work which was the last process that was in chapter 5 so who has the power to decide how a category is determined or not at the same time also categories get inscribed into the landscape with territorialization but territorialization can also reify categories so what you find in Abu is that the buffaloes are not necessarily seen as a food and mouth disease reservoir because of the science but because they're behind the fence on the other side new categories might also emerge with is found on the other side might become yeah someone else and then infrastructuring points maybe a bit more towards the challenging of clean separation with territorialization so if we then think about where bordering can be contested for multi-species justice I think it can happen on all levels and perhaps we need to think also about the categorization of the of the buffaloes of food to mouth disease reservoir as we should not take it for granted and then the next chapter is I I reflect less and less on that because I shift the focus but in the end it has been conclusively proven that the buffaloes is a reservoir also food to mouth disease but how and how frequently it transmits food to mouth disease to cattle that is still kind of uncertain and I think it's important to keep that in mind to also use that as a way to challenge perhaps the very strict control that followed from it but then again also if you look at what local people are able to do in within the the sort of limited space that that's been given to them to challenge biosecurity then you can also think about infrastructuring and what happens on the ground there so it will be for different people I think the different processes will be more relevant or less relevant to contest biosecurity thank you I have a small follow-up question to reflect a bit on the infrastructuring part of course your focus is on on the fence and other related infrastructure around it could you maybe add a bit more reflection on the infrastructural or material aspects sorry elements and how they lead maybe environmental or social impacts and are there other maybe types of infrastructure that you think maybe there were not prominent in your study but could be relevant for instance data infrastructure information technology related to other infrastructure that is more emerging and maybe becoming important in bordering in other contexts could you provide reflection on that learned opponent yes in a way this is also what so infrastructure studies is a big field and a lot has been written about it a lot of political ecology analysis would then point also to the yeah the under development of infrastructure in the global south and the violences that come with the infrastructures that are built by the global north and to some extent the fact that there is only quite a flimsy fence even though it's an impressive fence it's 240 kilometers long yeah suggests that perhaps more infrastructure is yeah it would be needed but is not provided because of these inequalities that persists in the global north global self-divide I think there are more infrastructures that I did not analyze in the thesis which concern also information infrastructures so for example the tagging of cattle in the air so that you can have a vaccination record of the cattle and that means that you can then also sell your cattle maybe to better markets that is yeah to some extent it's not implemented like maybe 20% of the people have this this tag even though it's legally compulsory to have your all your cattle tagged just because there's a shortage of tags in the country so this is I think very interesting but analytically there was little for me to to analyze so that's I think why I chose to focus on the fence thank you so much thank you very much professor Blanford would you continue thank you very much your candidate thank you very much for a very interesting thesis I thoroughly enjoyed reading it and actually got a very different perspective of the role of fences in disease management related things so some of the questions that I have are also again to do with fences but first let me start what attracted you to this topic okay it's a fascinating topic so what attracted you to this well yeah I think it is truly fascinating so I come from a conservation background and I didn't show you I haven't so this is a conservation area in in southern Africa and you can see it's five countries and Botswana is the southern southern central country which aims to reconnect all these different

protected areas to make sure that wildlife can adapt to climate change we can move and exchange genes etc to have a healthy wildlife population but as you can see there are a lot of barriers in Botswana so these are the veterinary fences this is how I came to the topic from a conservation perspective then later of course if you try to find out okay what is the deal with this fences then yeah you have to dive into foot and mouth disease control of the mouth disease signs and a whole new box opens and that becomes interesting but this is where I had started thank you very much so the fences were originally constructed for biosecurity reasons many many years ago what are the and the impacts that you know thinking of this today what did those fences what were the impacts of those fences today because when they first constructed those they didn't think about they thought about it from the disease perspective but not how they can impact in the future so what are some of these impacts that that these fences have had thank you I think it is yeah I should maybe answer about my own things but maybe Pierre de Plessis is also online in the audience he wrote a very nice article about one fence and specifically the effects of it as they are felt in central Botswana so a bit different scope geographically so yeah I don't know

if you cannot see it oh yeah you can so this fence here is one of the first fences that was built in the 1950s it's called the Kuki fence and when this fence was built it kind of cut off the Okavango Delta which you see in north which is located in the Kalahari landscape which is a very arid area so a lot of antelopes were moving from the Kalahari to the Delta and back so well quite a few years after the fence was built I think in the 70s or 80s hundreds of thousands of animals died at this fence because they couldn't reach the water it was also a drought year so it was not just the fence itself it could be attributed these to which these effects could be attributed to but yeah I think two-thirds of the population dwindled at that time and the populations have not recovered since this area which you see here is a protected area called the Central Kalahari Game Reserve this is where still a lot of the wildebeests then turned to but it is very arid as I mentioned so they started drilling boreholes so to pump up the groundwater now all these wildebeests are congregating at these boreholes but this then again leads to over grazing near the areas of the boreholes because they're not distributed so lightly but concentrated so you can see that there are these cascading effects and this is what clearly pluses is analyzed and also in my thesis for example elephants are overpopulating the Okavango Delta and they have denuded some parts of the landscape from trees so also tree dependent species then become I get into trouble so there are lots of consequences which were not foreseen when these fences were built and well I think there's a paper which has maybe 16 pages of a table in which they describe all the recorded effects of these fences so you can go on and on and probably it will just pile up even further in the future thank you if you if faced in a similar situation would you use fences again or would you think of some other way to separate and you know maintain diseases in particular areas I need an opponent I think fences still have a role to play so my yeah my this is not an argument against fences in general absolutely but yeah they need to be designed with a lot of attention and a lot of consultation and a lot of understanding of why they are built for whom and who then benefits from them and if it is someone else who benefits from them who's not affected by them then there needs to be some compensation mechanism perhaps to be followed up because yeah fences are I think one of the central tools to exacerbate inequalities but then again it's not easy to live with elephants and buffaloes and yeah some forms of separations are yeah sometimes actually a good good idea I think thank you I'm gonna switch this a little bit to the data you did some focus group interviews but I didn't see in your thesis that much detail about what some of those questions were can you just elaborate on yeah some of the information you collected and maybe some challenges you faced while collecting that information I need an opponent the focus I did two focus group interviews for my research both in habu and one focus group was focused on herding the practice of herding how it was traditionally done how it is now done with the herding program that the NGO has set up and the differences between the two but also understanding why herding has disappeared and why that then became a

reason for the NGO to come in and reintroduce herding so this is quite a black box I would say there are many explanations of why herding has disappeared in Botswana so it was I think important to ask people in habu and to have this was a focus group then with elderly people who all were herding cattle in the 1960s still but then stopped doing so and this was I think a useful way to do it because they also themselves contest each other but then when you have them all together in a group some sort of consensus comes out there are some challenges with focus group interviews because there's a lot people even talking through each other and then admit different languages so what my approach was not speaking these languages properly to really rely on my research assistants who did a great job with both moderating it and and translating it so it was yeah with a lot of preparation beforehand discussing what would be the interesting follow-up questions what yeah to make sure that if I was the one doing it I would not do it differently or less I mean of course they have their own approaches also second focus group interview was about the southern buffalo fence so again looking outside the history of who was affected by it when it was constructed but also how it is presently experienced this was a slightly bigger group of people from habu and also included some younger the younger generation to also reflect on the present and the way that southern buffalo fences seem to impact their lives but same set up with my research assistants doing the work and then thank you very much this I would like to carry on for a second on agency we have been with that topic already so to what extent did you feel challenged to prove virus agency or the agency of any other animal you are dealing with during your research so methodologically this is a challenge for us and then we know as multi-species anthropologists we are frequently challenged on that point by fellow social scientists by philosophers who quest for intentionality so how did you practically go about to trace this issue highly learned supervisor this is yeah a challenge indeed so I think you need to look quite carefully at the data that you collect and you need to have a certain lens on to be able to unearth kind of yeah when you talk about science or about biosecurity which is all about controlling nonhumans to actually then point out that the nonhumans also have some agency and not are not just victims and they are I mean also victim but also that agents you need to I think look quite closely at what you can still then find in there and so in the archives for example looking at how buffaloes are maybe also an agent in food to mouth disease science and how it has developed these archival documents have been written by the colonial scientists or supposed colonial scientists to just approach them as an object an object of study and then you need to somehow read against the grain think okay what can we then still learn from the buffaloes in these texts which have been written from their perspective but also to some extent it is going to come going along with these scientists who actually do have a lot to say about buffaloes and sociologists of science they would also question this approach and they would say well this is knowledge that is socially constructed and yeah we need to think about the politics of knowledge production and but then the nonhuman disappears from our analysis and you're just stuck in sort of a human world of humans studying other things so yeah I think that the approach to take is to still have that critical mindset about how knowledge is produced and attend to those politics but also take seriously what you what you can learn about non humans yeah and so yeah my approach was mostly based on actually learning from other humans what they have to say about non humans because yeah direct observation of a virus so that for sure is difficult but also buffaloes and elephants yeah unless you there's a lot of scientists to do a lot of interesting work that can actually teach us a lot about what these animals are doing and I'm not the one who's supposed to take over their work because they do much better than I do so yeah thank you very much very unusual but still I have a question also let's say I read that I find the page where I read it based on the recognition that a borderless world is not possible more desirable point point point then my question for you is how to border well yes highly esteemed rector I think that indeed there is no no way to go beyond border so we border we have to border well and in the conclusion I kind of come to a couple of points on how to do that and that is well first of all the question is what does well mean but we're

thinking through sort of an ethics of care and yeah the concerns that I brought in are mostly about inequality and about sustainability and so to do bordering well it's also to make visible what is excluded when you construct a border or when you control it or when you resist it and to have these exclusions then made visible for everyone so they can reflect on it but also to politicize it and to make sure that people can act on it so that the whole act of bordering becomes also more democratic in many ways and how would it influence the territorialization what you are arguing so the theorization territorialization yes but I'm still curious to hear the answer thank you thank you me mr. Biddle can I ask the candidate and the pioneers to take this it's I adjourned this public meeting of the doctorate board of the University of Trenton may I invite the candidate and the pioneers to take this time before this table please the doctorate board of the University of Trenton represented by us has examined your dissertation and has heard your defense the doctorate board has decided in accordance with the article 7.18 of the law of high education and scientific research to confer upon you the degree of doctor I request the supervisor to perform the task for the which she has been charged all right under the authority assigned to us by law and on behalf of the doctorate board I guarantee you this is Dirk from Angela the degree of doctor and all the rights that are attached to this degree as evidence of this we present to you this diploma signed by the director magnickas the secretary of the graduation committee and your promoters and validated with the seal of your thesis dear learned doctor

from England how does it sound let me be the first to congratulate you on behalf of the University of Twitter with your acquired dignity from now on you have the right to use the title of doctor this title implies that society can rely on the quality of your judgment that you will act with integrity and transparency and that you will communicate independently about the results and the social relevance of your work value the doctoralist as an honorable distinction and a well deserved prerogative but always remember the obligations imposed by it towards the scientific community and society I would like to invite your supervisor to read that dear doctor from Angela the Arissa and many congratulations with this wonderful achievement this is truly a joyful day and I would like to extend my congratulations to your family to your colleagues and your friends here in the room as well as online I don't actually know how long we've known each other but it's been a while our collaboration started quite some time ago in 2020 I think you did your master thesis at backening a university with me as your supervisor but I think I must have also taught you courses so I don't exactly know where when we first met but I learned very quickly during the supervision of your master thesis which was not under the easiest circumstances with COVID all of a sudden hitting the planet and that you had all the makings of a talented and original researcher and the fact that we are here today push this point I was super happy to learn that you found this great research position at the University of Cologne in Michael Bollocks ERC funded projects and I was even more happy when you approached me to say that you wanted to actually do a thesis with me at the University of Twente and we started this process late 2022 and this actually means that you managed to submit your thesis within three years this is remarkable what is also remarkable that in addition to the four chapters in the thesis that are all being prepared or under review or have already been published you have also managed to publish four other peer-reviewed articles one of these based on your master thesis in the SCS flagship journal science technology and human values you also published a number of blog posts and reports a film and an impressive number of conference presentations and all then within this very brief time span the thesis is of very high quality and it is innovative and I think you also heard this from the opponents it uses a mixture of history ethnography political ecology and science and technology studies and it tells an engaging and honestly fascinating story of enduring colonial legacies unlikely alliances between veterinarians and nature conservationists and with non-human actors as a main as main characters in the stories including a fence that continues to become permeable and leaky and animals that have their own ideas on where and how they want to move around I and this is also true undoubtedly for the other members of the supervision team and Michael Sandra and Andreas I learned so

much from our collaboration this is the true joy and privilege of PhD supervision as a researcher and a collaborator and a colleague we appreciate the rigor the precision but also the care and the attentiveness that you've shown in your work you've been an absolute pleasure to work with and also during the courses of your weighty and safe training you have brought consistently value and collegiality to the classroom congratulations again visa I hope we stay in touch I hope the perfect post-op position will come to you and I'll give now the floor to Michael thanks so much Dr.

van Engelen, best of his that is in a welding attack for you for your friends and family and also our own project they have the afterlobenjarn enormous a note in for a colleague a friend scab this conduct guide and for a certain the blick in order to direct attention to your achievements and away from my poor Dutch I will now continue in the English language when starting the project in 2021 I had the idea to task five anthropologists with different micro studies on human environment entanglements in the South Central African conservation and coexistence landscape I had spent many years in interdisciplinary programs where the doctoral candidate it's one postdoc so I was quite adamant I must go for anthropologists but after the interviews in a group with Leah with how come we were quite adamant no must be visit miss somebody who comes from conservation sciences you brought everything we thought that we need your intimate knowledge of approaches and theories of conservation sciences a science that defines itself in a strongly interdisciplinary manner we unanimously thought that our team would greatly profit from your profit from your input we never regretted this position your input into our project was of immense significance why while others dealt with more obvious topics me with human elephant relations you with human carnivore relations you went for a really tricky topic viruses so whereas agency here now where we do not even know exactly how to define the actor is it a multitude of different strains of viruses so your courage to go for complex and societally very contested issues came in as a great benefit to the project in a formidable manner you set out to explore the historically variable conditions between the virus cattle buffaloes that can transmit the virus cattle owners veterinarians conservation scientists and and and in an exemplary way you set in motion what we jointly described and operationalized as the assemblage approach to do ethnography on socially and culturally embedded linkages between different groups of actors non human beings technologies and infrastructures and you managed to do that in a very remote place Habu is a remote place by all means far away from anything so exemplary ethnographic fieldwork really digging in and this demands patience which you bring this demands modesty to take oneself back in to listen even instances where one feels I do not really understand what the other side means or perhaps also the other side just rocks often talks about something completely different I think you had the focus just to carry on I do not want with these academic praise you have been essential for our team as a very reliable honest and devoted colleague I remember a good number of discussions where your focus input contributed immensely to the progress of the entire group your attentiveness that is the capacity to listen carefully to others your patience that is to cope with at times admittedly lengthy and paradoxically paradoxical academic arguments and your challenge for really digging in and your thoroughness greatly contributed to our joint progress I'm looking forward for further cooperation we still have some publication projects going on and I'm very happy that we will stay in contact for some more years thanks let me go to a final stage of this ceremony and I would like to congratulate you also personally and on behalf of this faculty and the university it's a very very interesting research and from my perspective I'm not an anthropologist I'm not a conversator another type of research what was important here but I saw and I heard and I read quickly about a lot of how to say it's metaphors which we can use in the life of universities nowadays and the Netherlands and maybe even in Europe about care about caring about dare to care and also about borders I learned from you that no board this is not an option but we have to make them well and good borders and I would like to stress how important your research is also and I'm happy that it is done in two universities but also

now a group of knowledge transformation and society a research group in our faculty I'd like to congratulate your family also colleagues from the same research group congratulate supervisors and thank the committee members for lovely discussion from the left to the right different questions thank you so much for this and now may I ask you together with your parents yet to take seats back thank you as I said we are going to final final step in this ceremony after closing the session I would like to invite the young doctor to exchange a couple of words with their opponents online he knows about that and after the below the young doctor with the family pioneers will follow and the committee members and then other guests from the room and now I close this public meeting of the doctorate board of the University of Trenton yes some last words for the online audience it's a shame you cannot join us for the reception but it was really a pleasure to have the discussion with my highly learned opponent the big boss and also for the others yeah we cannot see who has joined but I know who was there and thank you so much for all the support that you send me also before this meeting happened all the messages that you send me so we'll celebrate another time thank you