



AALBORG UNIVERSITET

Department of planning

Techno-Anthropology

Abstract:

Title: E-learning for non-obligatory continuing education for hunters.

Semester: 10<sup>th</sup> semester  
Master's thesis

Project period: 01.02.21-30.07.21

ECTS: 30

Supervisor: Maurizio Teli

Pages (2400): 45

Characters: 108819

Appendices: 0

The content of the article and report are freely available, publication (with sources) may only be performed with source reference.

Mads P. S. Dragsbæk (20165630)

The technical faculty of IT and Design

Today, one finds digitally mediated education almost everywhere. To keep up with time and the expectations of aspiring and established hunters, the Danish Hunter Association (DHA) has decided to expand their portfolio into the world of e-learning. The thesis examines how DHA can produce e-learning content that functions to advance the collective state of knowledge amongst hunters in Denmark. A focus will be set on the ethical precepts of hunting and the compelling necessity, for hunters and hunting education, to be attentive and keep up with societal demand to secure its legitimacy in the future. Through a case study design, this thesis finds that the use of boundary objects can aid in organizational knowledge building in a non-formal education setting. An investigate how issues and real-life situations may help to overcome boundaries in knowledge building. Employing the concept of boundary objects on the empirical data from a small group workshop has allowed identification of several different boundaries throughout the process, as well as ways to successfully cross them.

# Acknowledgements

I wish to thank the Danish Hunter Association, Niels Søndergaard and the employees for all their help and support, and for the opportunity to do my internship, allowing me access to their facilities and the recruitment of participants for my workshop.

A big thanks to the participants of the workshop, without whom this study would never have been a reality.

A big thanks also goes out to my de-central supervisor at the association, Jes Mikkelsen. Jes has through the entire process functioned as my daily support, and has helped me navigate the organization. Without him, the process had been immensely complicated.

Last but not least, I wish to express my heartfelt gratitude to my supervisor Maurizio Teli, who has been with me in this far from straight line to the end goal. I appreciate all your help and support through the entire process - Thank You!

## Reading guidance

All quotes from the workshop has been given the reference: (workshop, 2021). Each participant is in the text named A, B, C and D due to anonymization.

In the sections “Workshop” and “Identifying issues and finding common ground” the reader will encounter both orange and green textboxes.

The green text boxes partly contains the protocol for the workshop, partly the author's comments on the actions described in the text.

The orange text boxes contains the content, the participants in the workshop

## Table of contents

<b>E-learning for non-obligatory continuing education for hunters.....</b>	<b>6</b>
<b>The Danish hunter association.....</b>	<b>7</b>
<b>Hunters, hunting and society .....</b>	<b>9</b>
<i>Hunting.....</i>	<i>9</i>
<i>Societal influence .....</i>	<i>10</i>
<i>The ethical precepts of hunting .....</i>	<i>11</i>
Summary .....	12
<i>Hunters .....</i>	<i>12</i>
<i>Types of hunters .....</i>	<i>13</i>
<i>Hunters' training and licence. ....</i>	<i>13</i>
<i>Storytelling as teaching.....</i>	<i>14</i>
<i>Summary.....</i>	<i>15</i>
<b>Computer supported collaborative learning .....</b>	<b>16</b>
<b>Lifelong learning and non-formal education.....</b>	<b>18</b>
<b>Delimitation and problem statement.....</b>	<b>19</b>
Problem statement .....	20
<b>Theory .....</b>	<b>20</b>
<i>Knowledge building .....</i>	<i>20</i>
<i>Boundary objects.....</i>	<i>22</i>
Types of boundaries .....	23
<b>Method .....</b>	<b>24</b>
<i>My way into the field .....</i>	<i>24</i>
<i>The case study .....</i>	<i>25</i>
<i>Prior work .....</i>	<i>25</i>
<i>Planning the workshop.....</i>	<i>27</i>
<i>Workshop .....</i>	<i>28</i>

<i>Identifying issues and finding common ground</i> .....	30
<i>Dilemmas</i> .....	37
<i>The hunting story(board)</i> .....	38
<b>An ecology of boundary objects</b> .....	<b>43</b>
<i>Hunter's language and stories - syntactical boundaries</i> .....	44
Different contexts create semantic boundaries.....	45
<i>Continuing negotiation - pragmatic boundary</i> .....	46
<i>Concluding remarks</i> .....	47
<i>Discussion</i> .....	48
What does the case do for CSCL? .....	49

# E-learning for non-obligatory continuing education for hunters.

In 2020 the Danish Environmental Protection Agency (DEPA) released a report with the title, *Evaluation of dissemination and continuing education within hunting and wildlife management* (Seismonaut and Miljøstyrelsen. 2019). The report contains results of a large survey and interview study designed to evaluate current continuing education as well as hunters' wishes and desires for additional education. The survey was sent out to all hunters in Denmark of which 44000 responded. When asked about their competencies, confidence increases with experience and only 8% do not find their competencies to be satisfactory. 50% of the responding hunters have never engaged in non-obligatory education of hunting, but the report find that four out of ten hunters have an active interest in continuing education and that approximately 60% of Danish hunters turn to the Danish Hunter Association (DHA) as source of knowledge to their topics of interest and/or information on continuing education. The report identify ethics as an interest amongst younger hunters (< 35yo). When asked about barriers, a substantial share of the respondents who would engage in continuing education (72%) point out time as a challenge to a certain extent. 77% expresses the need for more flexible options, such as online courses (Ibid) and 39% would prefer e-learning due to the flexibility.

In 2006 Charlotte Jensen identified a request from new hunters in terms of practical knowledge. Jensen finds that new hunters want better and closer connection between taught material and reality - a challenge that grows as more and more hunters does not come from a family of hunters and thus do not engage in peer-to-peer training. (Jensen, 2006).

Hunting is a pastime activity, but unlike sports or crafts hunting is very dangerous, and may, if carried out recklessly, cause death. There is, due to the risks, a significant need for both education and continuation education.

Today, one finds digitally mediated education almost everywhere. To keep up with time and the expectations of aspiring and established hunters, DHA has decided to expand their portfolio into the world of e-learning - a development process I have been a part of the past year.

My knowledge of the field and issues stems from several years of working with and for the DHA and from my work as a teacher of the obligatory hunter's course. During my 6 years as a teacher, I have taught more than 2000 aspiring hunters and through them been made aware of the challenges they face once they have completed the mandatory course. A recurring challenge is how the theoretical course materials fits with reality, and we as teachers are more than often met with "what if"-questions. The general understanding of the rules and regulations are imparted through the course curriculum, but a great deal of the aspirants understand and expect that all situations are not the same and different situation call for different reactions.

## **The Danish hunter association**

Følgende afsnit er en præsentation af DHA som organisation..

The Danish Hunter Association is organized around hunting and hunters in Denmark, with around 90000 members allocated to approx 860 local divisions. DHA is a community of interest to those who actively engages and takes an interest in hunting in Denmark and other countries. DHA was constituted in 1992 by consolidating the main associations of that time into one strong association with the purpose of unifying hunters across disciplines and geography. The association works politically and democratically for nature, hunting and hunters in Denmark, in The Nordic countries through Nordic Hunter Alliance (Nordisk Jægersamvirke) and in all of Europe through the confederation FACE (European Federation for Hunting and Conservation).

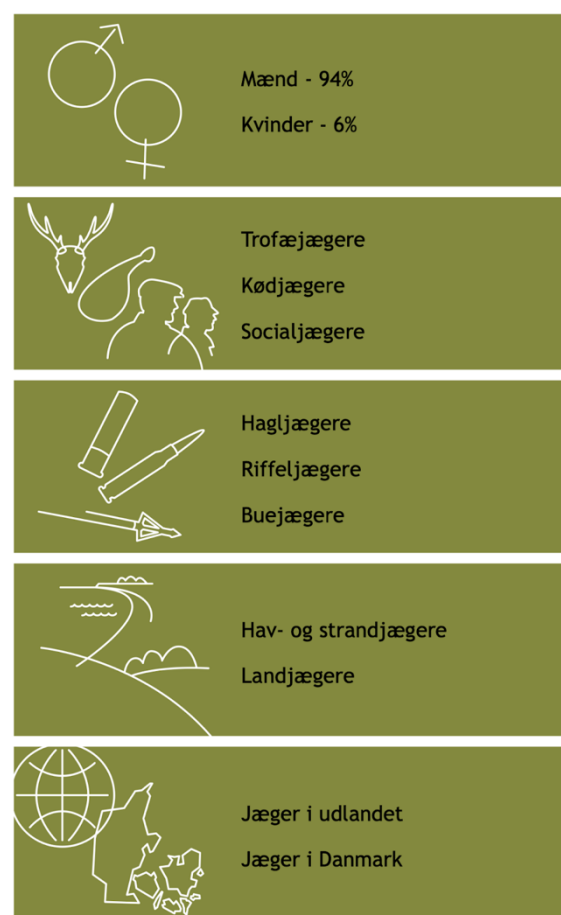
Members of DHA is, like the average hunters in Denmark, represented in all age groups from 16 years of age (the legal age for acquiring a hunting licence in Denmark) and upwards and in all levels of education - from graduates of primary school and craftsmen to university level. The diversity amongst hunters and also their interests is extensive. Besides the demographic and geographic differences, one finds great variation in the interest and activities of hunters alike (See fig. 1) - all of which DHA has committed itself to handle. This is reflected in DHAs mission:

*The Danish Hunter Association exists for the members. We handle interests, disseminate knowledge and provide services to supply experiences, contribute to better nature and to preserve the right to hunt. (Danmarks Jægerforbund - A. 2017.)*

DHA acknowledges that the evolution of current society has an impact on hunting in several areas. An extended focus on environmental issues and the decline in biodiversity, has an effect on how hunting is perceived by the public and our politicians. The development of technological artifacts that can be used to aid hunters in localizing the animals, day and night, raises new questions towards the execution of, as well as the ethics and moral obligations of hunting and hunters.

*“The privilege and right to utilize the population of wild game through sensible hunting is contingent on that hunters' knowledge, image and educational levels are in order. This can only be ensured if hunters on all levels are offered a wide range of basic and continuation training.” (Danmarks Jægerforbund – C)*

Only around 3% of the Danish population are hunters. To keep the right to hunt, they need to adapt to the current situation. Continuous education in combination with scientific research is seen as one of three primary ways of being at the forefront of, or at least keeping up with, societal demand (Danmarks Jægerforbund - A. 2017.) HA, as the largest hunting organization and as the point of contact to authorities and Danish population, assumes the responsibilities to educate hunters. DHA is engaged in creating, collecting and disseminating knowledge to their members “(...) to make hunters wiser and thereby even better hunters, by communicating the knowledge the many initiatives yield.” (ibid) As a result, DHA offer a wide range of non-obligatory non-formal education, within hunting related topics such as shooting and weapons, nature-, game- and terrain management, hunting as a craft, instructor educations, organizational education, children nature and



Eksempler på jægertyper

Figure 1. Different hunters and types of hunting (Jægerforbundet,)



hunting - each topic contains a variety of courses to choose from - all of which have a strategic role in the fulfilment of DHAs vision of “*mest mulig jagt og natur*” (*Ibid.*) which at best translates into *hunting and nature to the greatest extent possible*.

The DHA administration employs 54 people, 27 of which in the ‘*Consultancy and Educations department*’, ranging from anthropologists, biologists, shooting instructors, nature guides, game and nature managers all working to collect, produce and disseminate knowledge pertinent to all hunters in Denmark. The educational catalogue of DHA is widely founded in subject areas and are directed at both members and non-members.

The description above, function to demonstrate DHA as a knowledge- and member organization. An organization that functions to do the political and specialized work the organization employ. DHA engages in all aspects of wildlife, nature and hunting, while functioning to distribute and disseminate knowledge on wildlife management to both members and non-member hunters as well as NGOs and the Danish society. This shows the task of, and the field in which, an e-learning system will have to function.

## Hunters, hunting and society

Hunting has been a natural part of Danish history and culture for many years. In recent years, focus on sustainability, nature and biodiversity, has rendered hunting subject to increased attention. An attention that makes greater demands of Danish hunters, on the subject of ethics.

In the following, I will present the arenas where hunting is practiced, and some societal challenges. The section also presents hunting ethics and the challenges hunters, in my experience, faces when they meet reality.

## Hunting

When new hunters have passed the Danish hunters exam and acquired their hunting licence, the majority of new hunters get to practice hunting by getting invited to hunt with other hunters. Other common ways to get access to hunting grounds, is by joining a local division of DHA, joining a consortium or by renting land (Jensen. 2007, p. 23). Therefore, as a new hunter, you either practice hunting by yourself, or as part of a smaller, closed group of hunters. These circumstances entail that new hunters practice, evaluate and employ their formally learned skill-set, including wildlife management, weapons training, etiquette and ethics, in an enclosed social environment. As a consequence, as a new hunter there is a risk to unintentionally become a part of a closed social reality, where members conform to and accept each other hunting practices missing the input, reflection and interruptions one might find in a larger community. The scenario will affect new as well as experienced hunters' opportunities for challenging views and experience-building, with an inherent risk that hunters' world view, practice and ethical compass remains unchallenged and over time conforms to the practices of said group.

## **Societal influence**

Issues from recent years, such as various of fauna-crimes, has put new pressure on hunters and hunting. Fauna-crimes cover cases where wildlife protection laws are violated. In recent years, a handful of hunters has been charged and sentenced for violating such laws. Best known is perhaps Mourits Trolldoft, a 67-year-old hunter from western Denmark, who was convicted of shooting a wolf with a suspended sentence of 40 days in prison and 2 years of suspended hunting licence (TvMidtvest, 2019) an act that also got him excluded from DHA.

According to Gjerris et al. 45% of the Danish population are favourably disposed towards hunting, resentment is found with 25% and around 30% are indifferent (Gjerris et al, 2016). A statistic that could very well change if those lawless hunters keep violating our laws.

With the new political focus (both Danish and EU), not only on environmental concerns but also on nature and biodiversity, hunting comes more and more in focus. Lately, hunting have been discussed in both European and Danish politics. (Folketinget. 2021; Danmarks Jægerforbund - D. 2021). Hunters need to keep their paths clean if hunting is to continue being a recreational activity accessible to all, hunting needs to adapt to and conform with public opinion. Gjerris et al. focus on how hunting is carried out and what goes before, stressing that the public demands that hunting must be carried out under careful consideration towards the animals and additional fauna. (Gjerris et al, 2016)

# The ethical precepts of hunting

Besides the legislation on the subject, Danish hunters are also subject to the *ethical precepts of hunting*, a set of rules which are supposed to insist on hunters “doing better”. Inherent in these precepts are the intention to secure considerations towards the animals, non-hunters and also fellow hunters. The ethical precepts feature recommendations on how to conduct hunting in a sustainable and safe way, without troubling or inconveniencing others. The precepts urge hunters to respect the animals and the populations, as well as their habitat, and not to disturb unnecessarily. To utilize the animals for food and fur. Recommendations of sensible and sound shooting distances, in relation to the effect of the shot and also in relation to a hunter's abilities to shoot. The introduction to the ethical precepts sound as follows:

*“From the dawn of time, a set of "unwritten laws" has existed, to which the hunters have submitted, in recognition of the necessity of these ethically emphasized "laws" for both the game and the hunters.*

*A continued acceptance of hunting of nature's wild mammals and birds in a modern society requires that hunters not only comply with hunting laws, but also exhibit good hunting morale and thus respect the ethical rules of hunting.”* (Lovsamling til jægeren 2020-2021, 2020)

Earlier work does however indicate a need to reconsider how these rules are taught, thought of and understood (Dragsbæk, 2020). Dragsbæk describes how these rules, by writing them down next to regulatory matters, has altered these statements of moral encouragement into laws for hunters to subject to. If these encouragements are to pursue or keep up with public opinion, they need to be discussed in regard to contemporary discourse and present day challenges. (Dragsbæk, 2020)

The ethical precepts are supposed to help new as well as more experienced hunters make choices in real life situations. The challenge revolves around transferring knowledge from the precepts to real in practice situations. Dragsbæk describes the challenge using Donald A. Schöns theory of reflective practice. Schön describes how the ability to act in a given situation is very much influenced by prior experiences. A successful practitioner has the ability to draw on prior examples and experiences to accommodate to a new challenge or situation. *“Each new experience of reflection in action enriches*

*his repertoire (...) of exemplary themes from which, in the subsequent cases of his practice, he may compose new variations.” (Schön, 1982)*

## **Summary**

Within ethics in hunting, there is a profound need for continuation education. Education that could limit or even better stop fauna-crimes altogether. But ethics are also challenged in being theoretical precepts, that are to inform practice. To make sure ethics are applicable, they first need to be linked to reality and associated with real situations - a challenge that should influence and affect the e-learning system.

## **Hunters**

In this section, I attempt to describe hunters as a collective target audience. The reader will find that hunters are a very heterogeneous group, which makes for a very difficult didactic task. The section entails a description of hunters - who they are and how they hunt, to exemplify who the e-learning is targeted.

Hunters fit to be diverse in every possible way and in respect to every conceivable property, attribute and/or capacity. The only two certain denominators are a minimum age and a shared interest. By law, you are prohibited from hunting prior to your 16th birthday. From this we get that all hunters ought to have finished at least primary school as basic education and should be able to read and understand Danish. There are exceptions, but these are outside the scope of this thesis. Besides from this, it is hard to establish more commonalities in regard to the educational level, employment, age of hunters - as hunting today is a recreational activity for people from all walks of life.

In 2007 DHA published a report by Charlotte Jensen, on young and new hunters in Denmark. The report investigated “(...) *backgrounds, motivations, hunting behaviour, knowledge and approaches to hunting and nature.*” (Jensen, 2007) Charlotte Jensen describe hunters as a diverse group with widely different backgrounds and also motivations for hunting. Even though the scope of the 2007 report is to understand who hunters are, to inform the recruitment efforts of DHA, the results and

conclusions functions to describe the diversity and as an assessment of the composition of hunters in the near future.

According to Jensen, the average age of new hunters is around 26 years, while the largest group of hunters currently is those between 56 and 60 years of age. Jensen's work shows that hunters come from all over the country, but there is a slight increase in the share of hunters living in larger cities. Of the new hunters, 65% has other hunters in the family, which in other words means that hunting is not all new to them. The report also find that the level of formal education amongst new hunters is rising, and that hunters today are better educated than earlier generations. (ibid) Jensen also find that contemporary hunters are, though, overrepresented in the age group 56 to 60, broadly represented in respect of age, education, economy, employment geography etc.

## **Types of hunters**

Almost 90% of new hunters express experiencing nature as the primary reason for hunting. Jensen identifies four types of contemporary and historical hunters. (Jensen, 2007). The traditional, the social hunter, the selective hunter and the status seeking hunter. The report describes the traditional hunter as a hunter who has been hunting since early childhood, by joining family members and learning the trades as peer-to-peer training. In this way, the knowledge about hunting is reproduced and handed over from generation to generation, and traditional hunters see hunting as a lifeform. Social hunters are described by Jensen as hunters who see hunting as a social pastime activity in nature, used to de-stress and relax. The selective hunter is one who seeks authenticity, being an active participant in nature. The selective hunter hunts for de-stressing and as means to provide fresh and healthy food and living a healthy lifestyle, in other words, hunting is a personal and private experience. The status seeking hunter is very similar to the selective hunter, but with a need to share, express and display hunting as a statement of fashion and status.

Most hunters exercise more than one form of hunting, but there are also hunters who only exercise one type of hunting or only use one type of weapon.

## **Hunters' training and licence.**

In 1922, a new law was passed on hunting, the law gave Danish citizens equal access to hunting and to the game. (Bæredygtig jagt n.d.) The law also demanded that to hunt, you would have to acquire a hunting licence - at that time, a licence could be obtained simply by paying a fee. In 1967 the Danish hunters' exam (similar to the one used today) was introduced, consisting of both a theoretical and practical part (Danmarks Jægerforbund, 2017).

To be eligible for the test, you have to attend a mandatory course, covering topics such as wildlife management, weapons training, etiquette, biology, hygiene, wildlife illnesses and ethics. The curriculum is generally split in two a theoretical and a practical part, and by law a course must entail at least 10 hours of theory and 10 hours of practical training. This entail that weapons handling, safety and the distance estimation are trained at least 10 hours prior to taking the hunters exam. The course has to be run by an authorized hunting teacher. In 2014 new guidelines for hunting education and a new exam, was introduced due to societal demand. Hunters were to have a more profound knowledge of the field, thus the curriculum was expanded on several topics and a shooting test was introduced. If the hunters' exam is passed, the hunter will be permitted to purchase a weapon and train for the final test, the shooting test. A passed Danish hunting licence exam will last a lifetime if the hunter makes sure to pay and renew once every ten years.

The current laws do not require hunters to train or do any kind of brush-up or continuous education. The only duty resting with hunters is to register what they have shot when finalizing the season.

According to anthropologist and sociologist Charlotte Jensen (Jensen, 2007), who have studied new hunters and their incentives to hunt, unlike earlier generations, present day new hunters have little or no knowledge of hunting prior to their hunters training as the majority do not come from hunting families. As a consequence, they do not have a repertoire of situations to draw on.

## **Storytelling as teaching**

In my early years, well before I was old enough to come along on hunts, I was introduced to hunting through stories, based on the personal accounts of my family members. I was introduced to the biology and behaviour of animals, from my father's stories of what he had seen and experienced. And

by the time I was old enough to come along, I knew the dangers of firearms, how to spot a roe from a buck after it had shed its antlers and I knew that seeing a hare eating its own faeces is normal as it is a pseudo ruminant. My father brought me along when he visited hunting buddies, and I listened while they exchanged experiences through stories. The stories have been a part of mine and very many other hunters' upbringing. Using storytelling as teaching is not a novel concept. Stories have through centuries been used as instruction in hunter-gatherer societies. (Sugiyama, 2017) Stories are in such cultures used to teach social norms and practices, traditions and to pass on generic knowledge. According to Sugiyama, humans are "*highly dependent on the ability to generate new knowledge through exploration, experimentation, and inference.*" (Sugiyama, 2017) A trait described as natural pedagogy and are ascribed to have functioned to transmit "*Considerable knowledge of animal behavior, for example, is acquired by listening to accounts of hunting excursions that are shared among hunters in camp*" (Ibid) in forager populations. Storytelling is also considered teaching how to teach through storytelling, in other words, hearing stories teaches the listener to tell the same type of stories. An interesting aspect of human storytelling is the ability to understand and apply solutions from one specific context to another situation in another context (ibid). These traits have also been used in Danish hunting culture always. Learning from stories continues as aspiring hunters attend courses of the mandatory hunters training. Most teachers use stories and their own experiences to provide the context in which the curriculum comes alive. The stories I have been told has taught me about hunting, but also about how hunters communicate and share knowledge.

We as humans have capacity to generalize across situations from familiar to unfamiliar, allowing us to use knowledge from one context in another. "*By telling the stories, the elders and our parents were able to pass on their knowledge and the knowledge of our ancestors.*" (Sugiyama, 2017) In other words, stories function to pass on to new generations, knowledge on social norms and practices. (ibid.)

## Summary

From the description of hunters, their education and the reality they are to practice in, I build an argument for a much-needed focus on ethics for the reputation of hunters and hunting to endure. Hunters need to adapt to societal changes and the strenuous cases related to fauna crime. In an arena of great heterogeneity, DHA wants to build and utilize, an e-learning system as a means of continuing education in ethics, as well as other topics. This raises the question:

**How can DHA build a computer mediated digital environment for continuous hunting education?**

## **Computer supported collaborative learning**

I turn to the field of computer supported collaborative learning, as this is the field concerned with the studies of computer mediated learning. In the following, you will be presented with the predominant trends within CSCL research.

Working together in groups for learning purposes, as well as the study of such groups, is nothing new and the benefits of such constellations have been proven on many occasions. But what is collaborative learning?

In *What do you mean by 'collaborative learning'?*, Pierre Dillenbourg offers a broad definition of collaborative learning as “a **situation** in which **two or more people learn** or attempt to learn something **together**.” (Dillenbourg, 1999) Stahl, Koschmann, Suthers narrow it down by distinguishing between cooperative as individuals each contributing with a constituent part to a joint result or product, and collaborative as collective construction and work amongst participants Stahl, Koschmann, Suthers, 2006). The term collaborative and by extension collaborative learning is then characterized by its group interaction, negotiations and discussions leading to shared understandings and co-construction of conceptions.

As e-learning and other computer mediated forms of teaching has gained broad acceptance, the collaborative approach within online teaching is a growing field of interest as well. According to Gerry Stahl, Timothy Koschmann and Dan Suthers, the field of CSCL considers all types of formal and informal education, and with the intention to effectively enhance learning through the combination of group learning and technology Stahl, Koschmann, Suthers, 2006). Stahl, Koschmann and Suthers focus on how the field of CSCL has shifted from a focus on individuals learning in groups to a focus on the processes of discussions and negotiation as collaborative learning - a focus on cognition and how people learn together, how learners construct meaning together when collaborating on a topic or task to inform the design of CSCL environments. (Ibid)

Computers and the internet has indeed opened new ways of learning that certainly requires something different of both teachers and students - it is self-evident that it is not enough merely transferring



curricula to an e-learning platform as text or slides, otherwise books would make teachers obsolete altogether. Stahl, Koschmann and Suthers, position CSCL against earlier approaches, specific to the currents of learning and learning research - from computer-assisted instruction in the 1960s concerned with mere memorization of facts to a more present and social constructivist view, “(...) *of learning through collaboration with other students rather than directly from the teacher.*” (Stahl, Koschmann, Suthers, 2006). With this, the role of computers in learning, change from instructional transferring of facts to a role of support and facilitation for collaboration. This shift in focus also entails a shift in research objective. From an interest in and focus on individual capacity for learning within groups, “(...) *the group itself has become the unit of analysis and the focus has shifted to more emergent, socially constructed, properties of the interaction.*” (Dillenbourg in Stahl, Koschmann, Suthers, 2006). Early CSCL builds on the notion that designing of CSCL environments can create productive interactions between peers. CSCL has for years been investigating how technology can enhance learning, followed by research on what makes collaborative learning effective and by extension how to build CSCL environments in a way that ensure collaboration. (Dillenbourg et al. 2009).

While collaborative learning is no novel concept to lifelong and informal learning, research within the field of CSCL has focused primarily on collaborative learning in formal learning institutions, such as different levels of schools (van Aalst, 2009., Yuan & Zhang 2019., Zhang, Yuan & Bogouslavsky, 2020., Schworm & Renkl, 2020) and universities (Vogler et al. 2016., Dewiyanti et al. 2004.), focussing on teachers, students, scholars etc. and the effects of CSCL in primary, secondary and/or higher education. CSCL holds a lot of research on software and the affordances of CSCL environments (Suthers, 2005., 2006.), cognitive processes and meaning making (Dennerlein, 2013., ) in both synchronous (Vogler et al. 2017) and asynchronous CSCL environments (Bereiter & Scardamalia, ., Aalst, 2009; Pozzi) focussing on the role of students, teachers and technology.

Recent articles by Guangji Yuan and Jianwei Zhang (2019) and Yuan, Zhang and Maria Bogouslavsky (2020) investigate knowledge building and transmission between two classrooms, using Knowledge Forum a CSCL platform. Yuan and Zhang address CSCL environments that will secure knowledge building and knowledge advancements across communities using a boundary object they call ”super notes”. Super notes make it possible for student in other classrooms to build upon the ideas of their peers. (Yuan and Zhang, 2019; Yuan, Zhang, Bogouslavsky, 2020) Yuan, Zhang and Bogouslavsky extend the CSCL research beyond a single classroom and to involve both 5th and 6th grade students, but the setting of the formal education still makes up the arena.

# Lifelong learning and non-formal education.

Lifelong learning has been a significant part of educational policies since the 70s as a means to equality in access to education. Up through the nineties, lifelong learning was seen as an inherent part of knowledge society. The aim was to secure high levels of knowledge to all Europeans to embrace the increasing competitiveness and focus on qualifications for employment, through continuous education. (Bourdon, 2014). Today Lifelong learning is seen as a necessity to function in an ever-changing world of information. Lifelong learning is therefore today seen as comprised of *“all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective”*. (European Commission. 2001)

The field of formal education has been given the most attention by the CSCL community. Formal education comprises all education within the school system from preschool to universities. Non-formal education resembles formal education in the way that it is structured. Non-formal education, like formal education, is organized and intentional, directed and planned. It contributes to and is acknowledged as part of the lifelong learning process, the qualifications acquired from non-formal education is usually recognized as formal or equivalent to formal qualifications. (UNESCO, 2012) Non-formal education is often offered by public institutions, employers or NGOs etc. (Latchem, 2014 as workshops, seminars or short classes. This type of learning caters to everyone and is often facilitated in and by communities. (Council of Europe) According to the Danish Ministry of Children and Education 2,1 mill people attended association activities in 2008 and around 700000 takes part in non-formal education each year. (Ministry of Children and Education. 2018)

# Delimitation and problem statement

The ethical precepts have the function of being a part of the theoretical curriculum that are to directly influence practice. The curriculum hold, ‘what’ you ought to do, but not the ‘how’. As it is at the moment, knowledge about ethics will allow the aspirant to answer questions related to the curriculum of ethics but will not do much in guiding new hunters in how to act – there is no test prepared to try out hunters’ morals, but that of hunting in practice. To be able to act and react, hunters need to be familiar with or have met the circumstances of the situation, to even recognize the situation on which to act.

When hunters hunt, their education will prevail if linked close enough to the reality experienced by the hunter. To keep the ethics evolving, they need testing against reality and persuasions of other hunters and society. Hunters hunting in small groups copy and replicate conviction and behaviour, this could make for a close-knit set of practices, in which persuasions are not challenged.

A changing view on nature in society commands hunters to reflect on their own practices, a task that has been up to each individual hunter up until now, as the law does prescribe any continuation of training or education. DHA see it as their task to educate hunters based on the association’s work and research, which makes it natural that DHA takes on the challenge of the needed continuation education on ethics.

It is important to note that the only certain commonalities of hunters in Denmark are the interest in hunting and the age limit, which entail that all hunters are 16 years old or older. Besides from this, it is very hard to state any common characteristics to guide a plan for teaching.

The task at hand is to investigate how an organization as DHA can build a computer mediated digital environment that allows hunters to move forward in their ethical stance.

The literature reviewed in the section “Computer supported collaborative learning” functions to show the somewhat limited scope of the CSCL research. CSCL is predominantly concerned with formal educational settings, such as schools or universities, investigating how intersubjective meaning making play out in groups when engaging in education and learning activities in digitally mediated environments. Only a few have sought to look at cross-community collaborative learning, and those still keep within formal education. Research in CSCL primarily seek to understand the

processes of collaboration and how these may contribute to the improvement of existing or design of new digital learning environments. An interesting approach, by Yuan and Zhang, identifies knowledge building and collective knowledge advancements as aims of CSCL, and how knowledge can be transferred from one class to another. Given that hunters and hunting education, does not conform to the same standards as students do in the formal system, but by contrast better fits in the category of non-formal education where knowledge does not necessarily follow a planned learning path, the remainder of this thesis seeks to investigate:

## **Problem statement**

How can boundary objects aid the Danish Hunter Association in organizational knowledge building on the topic of hunting ethics, through a digitally mediated learning environment?

# **Theory**

## **Knowledge building**

*“Sustained knowledge advancement is seen as essential for social progress of all kinds and for the solution of societal problems.”* (Scardamalia and Bereiter, 2006). If the goal is for society to move forward and to solve the greater issues, Scardamalia and Bereiter stresses the need to discard the idea of educating people by merely transmitting facts, but instead as evolving by building to advance knowledge. Scardamalia and Bereiter describes advances in the state of knowledge as an objective of knowledge building, as knowledge building should not be seen as an individual achievement but as a collective community goal. The state of knowledge is described as the state of the art within the community, and it is not a measure of individual knowledge nor accumulated knowledge but the collective knowledge which resides in the community - building on existing knowledge, moving forward one idea at a time. The goal is not an end result but the scaffolding of knowledge - that knowledge may lead to building of new knowledge by constantly improving existing ideas through iterations. This process may be asynchronous (Jan van Aalst, 2009) non-linear and never ending, as knowing also allows us to see all that we don't know. (Scardamalia and Bereiter, 2003).

With a total of just under 180000 active hunters in Denmark, the potential for knowledge building is substantial. Of the 180000 around 50% are members of the Danish Hunter's Association, which makes the associations e-learning platform a potential stage to initiate knowledge building practice.

Scardamalia and Bereiter distinguish knowledge into two types, *knowledge about* and *knowledge of*, depending on what the knowledge allows the holder to do with it. Knowledge about is described as declarative, stateable facts, such as encyclopedic knowledge. (Ibid) Knowledge as such is used when describing things, acts, situations, what is allowed or not etc. which is mostly usable when taking tests. This is generally the kind taught in the theoretical part of hunting education, where the test is the ultimate goal. Knowledge about species, law, safety etc. will be sufficient to pass a test, but it will not tell you how-to or allow you to react in a practical situation. *Knowledge of*, however, entail ability and/or competence to participate, use or act on. (Ibid) This kind of knowledge feature not only *knowledge about*, but also the how-to that allows the participant to engage in a given activity. *Knowledge of* also allows for *transfer*, the use or adaption of contextual knowledge in/to another context. Dragsbæk identified inadequate transfer as a challenge with societal implications for hunters and hunting. Teaching *knowledge about* the somewhat static ethical precepts as guidelines for practice allows for passing a test, but is deemed insufficient by a still growing portion of the Danish population (Dragsbæk, 2020)

“(...) *the state of public knowledge in a community only exists in the discourse of that community, and the progress of knowledge just is the progress of knowledge building discourse.*” (Scardamalia and Bereiter, 2006). This entails that discourse does not only describe the state of knowledge of a community, it is what constitutes it. Knowledge building discourse must then aim toward idea improvement as means of advancing the community state of knowledge. For this to succeed, Scardamalia & Bereiter list three criteria to be met:

1. *a commitment to progress, something that does not characterize dinner party conversation or discussions devoted to sharing information and venting opinions*
2. *a commitment to seek common understanding rather than merely agreement, which is not characteristic of political and policy discourse, for instance*

3. *a commitment to expand the base of accepted facts, whereas, in court trials and debates, attacking the factual claims of opponents is common.* (Bereiter in Scardamalia and Bereiter, 2006)

## Boundary objects

*“(...)science requires cooperation - to create common understandings, to ensure reliability across domains and to gather information which retains its integrity across time, space and local contingencies.” (Star & Griesemer, 1989 p. 387)* To overcome these challenges, the concept of *Boundary objects* was introduced by Susan L. Star and James R. Griesemer a term that may be attached to any item, that allow and enhance capacities of comprehension and translation across situations, and may facilitate sharing of meaning amongst individuals or groups across social worlds. Star and Griesemer address challenges of shared meaning across social worlds, as well as the necessity to *“(...) translate, negotiate, debate, triangulate and simplify (...)”* to ensure a common understanding. Boundary objects are according to Star and Griesemer:

*“[...] objects that inhabit several intersection social worlds and satisfy the informational requirements of each of them. (...) objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. (...) They have different meanings in social worlds, but their structure is common enough to more than one world to make them recognizable as a means of translation” (Star & Griesemer, 1989 p. 393)*

In other words, boundary objects refer to any object or structure which makes translation of knowledge possible in several contexts, between different groups and subgroups, across themes and topics - any object to satisfy the needs and visions of invested actors across boundaries. The properties of a boundary object are moldable and may be tailored to specific purposes in different settings and by different actors, depending on context. It is however essential, that the object and its content is identifiable and understandable across settings. Maps are excellent examples; even though one specific map can be used in different ways for different purposes like calculating distance, finding landmarks, planning trips, planning construction etc. the way a map is structured and read is oftentimes the same. Cooperation, translation, negotiations and Boundary objects are off cause not

reserved for scientific community, but may be appropriated to fit other social systems than that of those in the scientific world.

## Types of boundaries

Work by Carlile (2002) suggest three different approaches to boundaries of knowledge and describe the necessary properties of objects that allow transfer across such boundaries. Although Carliles concern is New Product Development, his approach to and description of knowledge barriers may help explain and overcome some challenges when examining how to secure DHAs e-learning system as a knowledge building environment.

A syntactic approach with the focus on aligning language - in other words, to make sure all stakeholders speak the same language, an approach in which “(...) *a boundary object establishes a shared syntax or language for individuals to represent their knowledge.*” (Ibid.). This presupposes an agreement of syntactical standard, a way to align properties that allow knowledge to be read on both sides of a boundary. A second approach to boundaries is, according to Carlile, a *semantic approach*. The semantic approach recognizes that even though language is aligned, there might be different interpretations. What is understood in one way by one might not be understood in the same way by others - that knowledge might exist different in different contexts with different individuals. To be effective at a *semantic boundary*, a boundary of interpretation and understanding, a boundary object need to provide “(...) *a concrete means for individuals to specify and learn about their differences and dependencies across a given boundary.*” (Ibid). In situations where mere understanding is not sufficient, transformation of knowledge might be needed. A pragmatic boundary need a boundary object to be customizable and changeable, individual users must be able to change and apply their knowledge to “*transform the current knowledge used at the boundary.*” (Ibid.) Prior knowledge has to be altered to generate new knowledge, a boundary object needs to allow or encourage this transformation of knowledge to resolve problems.

# Method

## My way into the field

On August 5<sup>th</sup>, 2020, I began my internship at DHA. I was to help them create and customize a new e-learning platform. My interest in the ethics curriculum in particular originates from 2017, when I was hired to go over the course materials appertaining the entire legislative content, among them the ethical precepts of hunting. The task was to create new PowerPoint slides covering the entire legislative content. As I worked through the themes, I found that disseminating the law was easy, each section states the facts and there is a clear distinction between black and white. The law states what is permitted and what is prohibited, and if you commit an offence against a law, you may well be prosecuted. Having observed and worked alongside many other teachers, I find that especially teachings of the ethical precepts differ as the individual focus shifts among teachers. The ethical precepts are things you as a hunter ought to do – recommendations to inform decision-making.

During my internship, I took part in the education of a group of new hunting teachers at DHA in Rønde. My function was to observe the education and the teachers both to help the teachers improve their teaching but also to better understand yet another arena for the e-learning to function in, as it is the idea that the e-learning should be used in all DHAs educations. A particular part of their education entailed describing the complete hunter, from the components knowledge, skills and attitude. The students were divided into smaller groups and asked to describe their view of a complete hunter, and to discuss their roles as educators in reaching this goal. To my great astonishment the groups could not agree on which of the three components was to hold ethics, although none of them had placed them in skills.

During the internship I have had several conversations about the challenges we face as hunters and there is a concurrent understanding of hunters' greatest problem being that of not keeping up with society. *"Times change either suddenly, due to powerful occurrences, or slowly over time – nothing is stationary. Ethics is where hunters meet non-hunters and society. When enough people agree on a tendency or agenda, it becomes the spirit of the time and hunters and hunting is at the moment not keeping up with time. Focus are moving from utilizing nature to protecting nature, and hunters need to adapt."* (Informal interview, September 2020)



## **The case study**

With the objective of investigating the collaborative creation of e-learning content, I chose to employ a workshop. I wanted the workshop to be collaborative, where participants and researchers, according to Ørngreen and Levinsen, collaborate on the task at hand, giving the participants influence but still under control of the researcher (Ørngreen and Levinsen. 2017). The workshop was chosen as it gave me a chance to see hunters, from different hunting cultures, work together and discuss ethical correct ways to hunt. A workshop allows a group to work on a specific task or topic while, as in a focus group, enabling the researcher to collect concentrated data on the topic including the group dynamic, interactions and interpretations (Halkier, 2015) It allowed me as a researcher to take a step back, identify where the group encountered difficulties, and watch how this particular group negotiated and adjusted to overcome the challenges. It also allowed me to experience how a workshop built on controversial statements on ethics could mobilize and trigger hunters' reflection.

## **Prior work**

In fall of 2020 I gathered posts and replies from the largest Danish hunting Facebook page "Alle os der går på jagt NY" – which at that time had just over 28000 members. Inspired by Braun and Clarke (Braun & Clarke, 2006) I used thematic analysis to identify themes connected to the ethical precepts of hunting. The analysis left me with just over 1100 unique statements concerned with themes linked to the ethical precepts of hunting and allowed me to sort and combine statements and conversations into cases exemplifying the challenges discussed amongst Danish hunters on Facebook.

From October 1<sup>st</sup> to December 1<sup>st</sup>, I manually expanded and collected screen dumps of all comments and posts in conversations posted in the Facebook group "Alle os der går på jagt NY". (Dragsbæk, 2020) The period (October 1<sup>st</sup> to December 1<sup>st</sup>) covers the first two months of the Danish fall-hunting season, which makes the group active. All posts and comments that exemplified differences of opinion was stored for a second read and of course so did posts or comments related to breaking rules or disobeying the law and constituted the data corpus, from which the themes were derived. As I read the conversations, I listed themes and topics that were interesting and discarded the posts not related to hunting or ethics. All posts and comments were read several times and was sorted by the inclusion and exclusion criteria in table XX.

Table 1. Inclusion and exclusion criteria

Inclusion criteria - threads	Exclusion criteria - threads
<ul style="list-style-type: none"> <li>- Related to the act of hunting.</li> <li>- Any direct violation with the law/or and the ethical rules of hunting.</li> </ul>	<ul style="list-style-type: none"> <li>- Non-hunting related.</li> <li>- Commercial.</li> <li>- Food or recipes.</li> <li>- Apparel.</li> <li>- Equipment reviews.</li> <li>- Posts of pictures of weapons, homemade knives etc. (commercial in character).</li> </ul> <p>Commentaries</p> <ul style="list-style-type: none"> <li>- No differences of opinion.</li> <li>- Too few comments (2-5).</li> <li>- All agreeing with the original post.</li> </ul>

The sorted data was then printed and manually sorted into the following themes, themes that emerged while reading through the conversations, such as: environmental effects, hunting-safety, wildlife and nature management, respect – towards both animals and other hunters and also the theme hunters’ training and practice (Ibid.). 1100 unique entries were colour-coded by theme. If two statements were identical or almost identical, one of them were discarded, as well as those agreeing with or reinforcing a prior statement (ibid.). This exercise left me with just over 100 entries concerned with issues within the themes selected for the workshop:

1. Wildlife management, protection of species and sustainability.
2. Safety.
3. Respect (both toward other hunters and the animals).

## Planning the workshop

The workshop was planned as a single event, however a single event to be repeated with other groups with the same or different topics. The workshop was held at DHAs facilities in Rønne, in one of the spacious conference rooms. The workshop took place on a Monday as it was the only day the participants all were free to attend. The duration was 3,5 hours including 30 minutes break for lunch around noon. The room was prior to the participants' arrival prepared with "*Pen and paper (coloured and plain), colour markers, Post-it notes, scissors and scotch tape.*" (Dragsbæk, 2020). In the room there was also a whiteboard and markers. Due to Covid-19, there was a table for each participant (to secure a safe distance between the participants) and individual refreshments (coffee, tea etc.).

The initial plan was to invite 15 to 20 participants for a workshop where they would be working in groups of 4-5 on predefined cases, built on the collection of statements during the period from October 1st to December 1st of 2020. The cases I had procured was outlined as descriptions of situations, which was based on the collected statements. The made up situations was however my own interpretations of the empirical material, and as I wanted to see how the group treated other hunters' statements, I ended up dropping the cases. The cases were substituted for worksheets comprised of opposing statements from the results of the thematic analysis conducted by Dragsbæk (2020). The statements were of course still chosen and extracted from context and divided into themes by me, and so the topics was in some fashion influenced by my or chosen based of my interpretation, but the statements was read to the participants as opposed statements, as in the original conversations, and not out of context.

The entire workshop was recorded on video, to capture not only the conversations but also the reactions of the participants. Two cameras were used to record the session, one recording the group and one recording the whiteboard. None of the participants seemed challenged by the recording; perhaps the last year of teams-, zoom- and skype meetings has made people accustomed to almost always having a camera present.

The participants were introduced to the workshop as follows:

You are here to discuss and create a hunting-story with a focus on ethics.

You will be presented with four worksheets with topics containing statements from other hunters. You may choose one topic to base your story on. The duration of the workshop will be around 3,5 hours including a lunch break.

I want you to discuss the topics and explore and try to understand each other's views. Share your own hunting experiences with each other. Have you experienced anything close or related to the topics on the worksheets? I want you to choose a topic and an issue, and decide how you want to make ethics, your views and experiences explicit. Your topic does not have to be part of the ethical precepts, it may be any angle on a topic you find challenging or interesting.

There is no right or wrong and no experience are insignificant.

When we have decided on a topic, we can help each other create a story that may help other hunters to understand the issue and/or challenge you have chosen.

## Workshop

The workshop, constructed to investigate the process of collaborative creation of e-learning content for hunting education, builds on the work and empirical gatherings conducted by Dragsbæk (2020). The preliminary problem identified by Dragsbæk (2020) exemplified a specific part of the challenges hunting faces in the present-day society - an ethical one. Building on the ethical challenges identified and the empirical gatherings, the workshop in present thesis was conducted to investigate if and how discussions and reflections of real life situations may inform the creation of content as part of knowledge building within an organization.

Even though the workshop is inspired by that described by Dragsbæk (2020), there were some alterations in the design. Due to the current situation and the restrictions of spring 2021, it was not possible to host a workshop as sizeable as suggested. The workshop was held with only one group and not as an all day activity, but with consideration to the composition of group members, as

described by Dragsbæk. As opposed to the original composition, the group was composed entirely of hunters. In the design by Dragsbæk (2020), one participant was to be found in one of the other organizations represented in VFR (Wildlife management council) This to ensure a connection to the surrounding society. It did however become clear through my interactions with other hunters that inviting participants from these organizations could very well turn out to be counter-productive. On several occasions, history has shown that several of the mentioned organizations try to limit or restrict hunting. With the purpose of creating content based on real situations and experiences of hunters, the setting in which they are to be recounted has to be a safe space - a space where it is possible to discuss ethics from real experiences and situation without it being used for other purposes.

None of the participants had participated in the original discussions featured in the worksheets for the workshop, and none of them follow the discussions of the forum where the statements were collected.

The group of participants engaged in this workshop entails four passionate active hunters, all being more or less experienced in different types and ways of hunting, ranging from 9 to 48 years of experience. Each of the participants had not in detail been instructed in and of the purpose prior to the workshop, they were however made aware that ethics would be the topic they would be working with. One of the participants is trained as a teacher, but works as a mediator of nature. One works in personnel management, one is a biologist currently working as a consultant, and one is a project worker and part-time student.

The workshop was conducted at the facilities of DHA in Rønne eastern Jutland in May 2021. The duration of the workshop was around three hours, and was conducted with respect to the restrictions provided by the Danish ministry of health, under the circumstances of that time - keeping safe distances, using facemasks and hand sanitizer. The group was supplied with different tools to help them create their story, such as flip-overs, colours, paper, Post-its and a whiteboard with markers and off course refreshments.

The workshop was opened with an introduction to the task at hand and how they were to proceed with a minimum of interference from the researcher. They were told that the task was to collaborate on choosing a topic and creating a narrative with an ethical angle. The story had to be tied to real life situations and their experiences as hunters. Four worksheets, each with posts and comments collected and sorted in themes by Dragsbæk Dragsbæk (2020) was given to the participants, and they were instructed to pick a sheet from the four and read the statements out loud. From here they were to

engage in creating a story in any way they found interesting. Deviating from the initial prescriptions of the workshop, the participants decided to read and discuss statements from all four sheets before deciding on a topic for their story. In the following, the topic's and the progression of the workshop will be presented in detail to demonstrate the resulting process. The following based on and described from the empirical gatherings of Dragsbæk (2020), personal notes from observing the workshop, as well as the transcription of the video recording of the session.

## Identifying issues and finding common ground.

The following paragraph will, though the content is condensed, function to introduce you to both the workshop in its entirety and thereby the empirical knowledge, but also to the process as it was carried out by the participants. Presenting the process functions to investigate structures to inform an approach to the sharing of ethics, with the purpose of increasing reflection amongst new as well as experienced hunters.

The first theme the group picked was that of “Respect”. The theme builds on a discussion of a situation regarding a man who well within the law has hunted and shot a fox who ate his hens and a rooster. The comments listed on the sheet covers several divergent views of the situation described by the author of the original post. Several congratulate the man on shooting the fox, but others have issues with the situation described. Some reply that it is unsportsmanlike due to the distance, choice of weapon or the degree of difficulty. Others question the motivation for shooting the fox, while others are astounded and offended by the words used to describe the situation (Dragsbæk, 2020)

At the very beginning of the workshop, it became clear that the participants, even though they are all hunters, have different interpretations of the situation, and thus focuses on different parts as significant. The group begins talking about the situation and the comments as each of the members express their individual interpretation of the situation, and the features that they each found interesting.

D opens the ball by expressing astonishment by the fact that this story would even give rise to an ethical debate, lifting his eyebrows while slowly stating the facts, “(...) so he shot a fox? [pause]

*Within its hunting season?*“ (workshop, 2021) A follow-up by reading into the comments an indignation towards the attitude, exemplifying a positioning of man over animal. *“How do we interfere? Are we above the animals, or equal to? (...) the story exemplifies an underlying stance of man being positioned higher than animals.”* (workshop, 2021) And while C is puzzled by comments of sportsmanship, and whether one or the other way of ending an animal's life is to be deemed sportsmanlike, B is offended by the language and the less than flattering mention of the beautiful red fox. *“I have no scruples about him killing a fox, I understand that completely, but I don't like the wording (...) that is no way to talk about the game - I find it disrespectful.”* (workshop, 2021) C is not ready to leave his topic and continues in the track of unsportsmanlike conduct, what purposes are more or less sportsmanlike? A reads a comment from the paper: *“No one has a chance against a gun at a distance of 150 m. Top unsportsmanlike and not a great achievement, but I got the understanding that you struggled with the fact that it followed its nature and ate the hens you apparently had not sufficiently secured. Big man. Congratulations on the killing.”* (workshop, 2021) This comment is clearly directed at the level of difficulty and the fox's chance of surviving. *“It's a funny one with the sportsmanship, because it focuses on the nature of hunting, it is a rule we construct ourselves, now that we don't need to hunt to survive?”* (workshop, 2021) B finds the discussion of difficult interesting. *“How far out is it fair to try to shoot a fox? (...) Our entire rulebook centres around making as safe and efficient a killing as possible. On the other hand, we don't want to shoot a pheasant on the ground - there has to be some kind of uncertainty present.”* (workshop, 2021) They all find that there are situations that clearly are unsafe and hazardous, but also agree that there are differences in peoples skills and training, and that it is of the utmost importance that one knows his or her own limitations. *The debate is characterized by different perspectives on nature, as well as in which direction peoples moral compass points. You won't find much understanding and compassion for other peoples viewpoints.”* (workshop, 2021) C point out, and the rest agree, A do however point out that the waves grow higher on social media as comments posted there are *“(...) free of charge”* as you will not be held accountable and continues *“Nothing is too big and nothing is too insignificant, no nastiness is too abusive - on there you can say whatever you like.”* (workshop, 2021)

The group can not identify anything on the edge of the law, but do however agree that some aspects of the discussion may be problematized. There is no distinct right or wrong, and it is subject to debate what they would have done if they were in the hunters position.

The group pick another sheet from the pile. This compilation of comments revolve around sustainable hunting and the protection of species.

*§1 The objective of the law is to secure the population of species and produce the foundation for a sustainable management by*

- 1) protecting wildlife, especially during breeding season*
- 2) securing the quality and quantity of wildlife habitats through establishment of wildlife reserves and in other ways establish, re-establish and protect wildlife habitat.*
- 3) to regulate hunting in a way that it is carried out in accordance with ecological and ethical principles and under attention to the protection of wildlife, especially of rare and endangered species. (Lovsamling til jægeren 2020-2021, 2020)*

Hunting seasons is in Denmark based on limitations from EU and national statistics from DCE (Danish Centre For Environment and Energy at Aarhus University) and builds on numerations where also, the yield statistics provided by Danish hunters are used as documentation to estimate the size of populations. Filling out yield statistics is obligatory to obtain hunting privileges the following season.

This sheet contains two separate posts, both concerned with sustainability. The first post states that hunting season has been removed from 15 species in the past 20 years. The second post focus on the decline in number of partridges shot in Denmark over the last 70 years.

The replies to these posts vary in message. Some simply agree and point out that besides the direct removal, some species also have had a decrease in duration of the season. Some say hunters are to blame for the decrease in hunting seasons, due to their collective actions. Others attack the science behind the reports and statistics, stating that it cannot be representative when they see lots of individuals of a given species on their hunting grounds. A few even suggest lying and reporting birds on yield statistics, to prevent preservation. It is a common conception amongst hunters that the nature management done by hunters is what are keeping species alive.



*“Genius, but it is a well-known classic - lying on yield statistics. (...) Some up the numbers to make it appear as the populations are larger, and some consistently report 0, from the belief that the numbers are used against us. The approach of lying to favour a personal objective is not okay. The only viable option is to rely on objective knowledge in management of populations. (...) This might mean that we will lose some species [season-wise] but if their numbers are low, regardless of the effect of hunting, it is not in our interest - nor the species interest to hunt them.” (workshop, 2021)*

The group discuss the discrepancy in hunters proclaimed focus on biodiversity, and this very specific focus on the number of species you are allowed to hunt. A lot of hunters hide behind the management proclamation. B has 50 years of experience and has, witnessed even more preservations than what those accentuated in the post. B states that he would not be comfortable hunting those species today, due to the very low populations.

*“It is all about how much we are allowed to shoot,” C says, “just look at the current debate on red deer. All about the numbers with no consideration towards the gender-composition.” (workshop, 2021)*

The group agree that this is marked by a general mistrust in the authorities and in both the results and use of scientific knowledge. The group all agree that hunters as a group do a lot for nature and biodiversity by restoring habitats and advocating for wild nature, but they also come to a consensus that it is often motivated by self-interest.

In this example, the group do not have a hard time agreeing that lying is wrong, and they also agree that hunting need to be carried out with consideration to the recommendations based on scientific research, when managing the entire European population of a given species. Though, indisputable right and wrong was identified in this theme, they do however also acknowledge that a lack of knowledge about biodiversity a narrow perspective on nature guided by self-interest is a challenge for hunters which is neither black nor white - but the solution might be found in education.

The third sheet contains excerpts from a discussion on safety. In hunting, the term *kuglefang* refers to a safe background that will stop a bullet, in case one misses or if the bullet goes straight through the animal. Usually, only the ground is considered to be adequate *kuglefang*, which means you would need a mound behind the animal or obtain an

angle that secures that the bullet will end up in the ground behind the animal. A rifle is a dangerous instrument and should off cause always be used and handled completely safely.

A hunter has decided to shoot geese with a rifle, and another hunter wonders how he can secure *kuglefang* on a flat field. A discussion unfolds, and a hunter proclaims that in the flat fields of Denmark it is virtually impossible to get proper *kuglefang*, but that he would take the shot regardless. The hunter then continues to claim that 9 out of 10 shots taken in Denmark has no *kuglefang*, and that he is not afraid to take such a shot.

When this sheet was read aloud, the participants smiled and laughed nervously, and all expressed resignation. Eyebrows were lifted and arms were crossed.

*“Usually no one is hurt, so we will take the chance.”* (workshop, 2021) B shakes his head. C laughs, *“So what everyone else do I have to do too? If my neighbour shoots a swan [protected species] I should too?”* (workshop, 2021) They all smile. B explain that the term *kuglefang* is not mentioned anywhere in the law, only in the ethical precepts of hunting. C: *“Then it is up to one's ethics and moral. We all know there is a theoretical risk of something going wrong, is it okay to take that chance?”* (workshop, 2021) A replies: *“Unfortunately we have seen it go wrong on several occasions close to May 16th [the Danish roe buck season starts on May 16th] - through a car windshield or through a window in a house, I wouldn't even dare to think about all the shots taken without kuglefang. That is not just a risk for your own sake, it's a risk for all civilians within safety distance as well as all hunters.”* (workshop, 2021) C remembers a case with a hunter who took a bad shot, using dense shrubbery as *kuglefang*, who was not convicted even though most hunters would deem the shot hazardous. The judge didn't know what was up and down, and the hunter walked. There is however also examples of people who was convicted of hazardous shooting while hunting - B knows a hunter who were convicted of shooting a red deer on a flat field, and had to pay a fine. B continues, *“(…) and it is clear that some people weigh the punishment, and if it isn't that harsh they don't care and do it anyway.”* (workshop, 2021)C agrees and adds that consequences for some only adds up to the punishment, not the direct result of the violation - but the consequences can very well be something other than a punishment. *“The thought process just never reach the outer boundaries, only to the legal consequences, and they can live with that if they only get to shoot a red deer.”* (workshop, 2021)

A follow-up, *“And the calculation - now I have been out this long and have never had the chance to shoot a red deer, then I have to take the chance, when the alternative is that I will have to wait 5 or 7 years more before I get the chance again.”*. (workshop, 2021) A describes a situation on a hunt where an older hunter, who he knows very well, disregarded all safety precautions when a flock of red deer crossed between them. He heard the bullets fly by the tower in which he was positioned, scared out of his wits. When the hunt was over, he saw no remorse, and was met by arguments that he got the deer and that nothing bad happened. B adds that he thinks new hunters are far more careful than many of the older and experienced hunters, and the rest agrees.

Safety is never to be disregarded! All else must be done with consideration to safety. The mere fact that some need to discuss safety makes it a valid point for continuation education.

The fourth and last topic of the day, was that of searching for wounded animals. The Danish law prescribe requesting a certified dog trained in finding blood (*sweisshund*), if you can't see the animal close to where it was shot. To give the dog optimal conditions, it is best not to contaminate the area by walking around searching on your own.

A hunter asks the group, how far do you search on your own before requesting a *sweisshund* (a dog specially trained for tracking wounded animals)? There are different reactions to this post, but one in particular catch the participants interest. *“In principle we are only supposed to go to the site where the animal was shot, and if it [the animal red.] is not there we are obliged to call, it makes for the best conditions for a successful search. But I usually search until I can't find any more blood, get to the neighbouring terrain or a dense copse.”*

*(Alle os der går på jagt NY, 2020)*

C laughs, *“This is what I ought to do, but this is what I actually do.”* (workshop, 2021) A laughs and replies, *“That is insightful.”* (workshop, 2021) They all chuckle, and B says, that it really is a question of circumstances. If it is the right kind of blood (dark blood, usually means de-oxidized blood and the shot has not hit the heart or lung area as intended, in which case the blood would be light red or pink) he wouldn't hesitate to search on his own, but if there is only a little blood and the colour was dark, he would request a dog immediately, but also makes the point that inexperienced hunters would not

know what to look for. The participants are all experienced hunters, and would all do as B, but they all agree that it takes experience to read from a situation and until you learn to do so you should always request a dog. D asks, “*Who do we do it for? It is for the animals - in concordance with the law.*” (workshop, 2021)

This kind of challenge is not the same for all hunters in all situations. As situations vary, so does the correct action to take in the given situation. The group find that this situation is one in which experience must be the guide.

So far, each individual participant has, besides gaining inspiration on the task at hand, also made an effort to identify the ethical positions of the other participants. Throughout the discussion, we have seen how the participants have explored each other's statements by adding layers or angles to the identified issues. By presenting additional statements as questions both as rhetorical and non-rhetorical questions, most explicitly done by D in the very early discussion about the fox, but also by the other participants, such as when C contributes to the discussion on ‘*kuglefang*’ “*(...) is it okay to take that chance?* “, they all contribute to the building of a collective understanding of the ethics pertinent to the presented situation. Through this and by agreeing on definitions, both verbally by supporting each other and physically as by smiling, laughing and nodding a common ground is established.

We have seen the group discuss the topics provided for the workshop and up until now only focused on identifying issues in the statements and situations collected on Facebook, and used the themes to discuss and negotiate common ground to establish a mutual ethical point of origin. They have found that these issues, besides from a few, are not one size fits all, or prescriptions of right or wrong to apply in all situations, but highly context dependable and may vary in different situations.

As all the presented topics have been discussed, the group turn to sum up what they have actually discussed.

## Dilemmas

*“It is hunting dilemmas in some way. We have been discussing dilemmas”* (workshop, 2021) A point out. *“Yes, sometimes we have to consider things in relation to the way we hunt. What is okay by me, might not be according to my neighbour. ”* (workshop, 2021) B reply, and exemplifies with a story of a morning hunt for geese, where he and his hunting buddy had shot 30 geese, a number the neighbour thought that was excessive. B agree that it would have been if they had done it again and again, but this was a one time thing which cause a minimum of disturbance to the flock, and an insignificant amount of birds taken out of several thousands. The participants discuss nature management as a challenge, but also as part of the answer. What best serves nature is not always what makes for a good communication strategy.

*“We are challenged by our history and what was passed on to us. We are challenged by what we are accustomed to and the sanctity of property rights. On Læsø, back when my parents moved there, you had to put a notice in the paper if your land was restricted from hunting, otherwise it was safe-conduct all over the island. It lead to some conflicts between the local population and newcomers for a period of years, when the newcomers didn't see the need to announce what was already written in the law. We were raised with a belief that on our 20 hectare we can do whatever we want. (...) Most hunters do not hunt as part of nature management, but as a recreational weekend activity - as a social activity. As a new hunter, you have been taught the way of nature management, and you will encounter situations you know to be wrong. How should you react?”*. (workshop, 2021)

A states that this is a great challenge for hunters alike, but that this specifically makes up a dilemma for new hunters. From the books of safety, rules and regulations or nature management with suggestions of how a healthy population is fostered and regulated, into a world where the degree of freedom of a landowner is not to be tested or limited. The group agree that there is something interesting in the potential clash between new and established hunters, how to react when presented with situations that does not fit the description from the books.

*“I think there is an interesting span, that we have touched upon several times, between the technical correct way that is introduced when you study to become a hunter, and that experienced and social you meet once the licence is acquired, and you get out there.*

*Didn't the textbook say...? This consortium hunts on their hunting ground every 14 days, didn't the book say that this should be limited to 3-4 times a year?*

*The ethical precepts of hunting and subject knowledge VS reality and the dilemmas that arise, the insights and reflections. How will I handle this situation, how would I act and react? Is it always appropriate to take action? How can we equip them for this?"* (workshop, 2021)

All the participants have experienced feeling compelled to leave a hunt early, due to situations outside what they were comfortable with. All were pleased with their decision, but how can we help a new hunter react in these kinds of situations?

## The hunting story(board)

The group is asked to create a representation of a situation with a firm focus on ethics, they find to be critical to new hunters, and then use their knowledge and experience as hunters to decide what they would do in the situation.

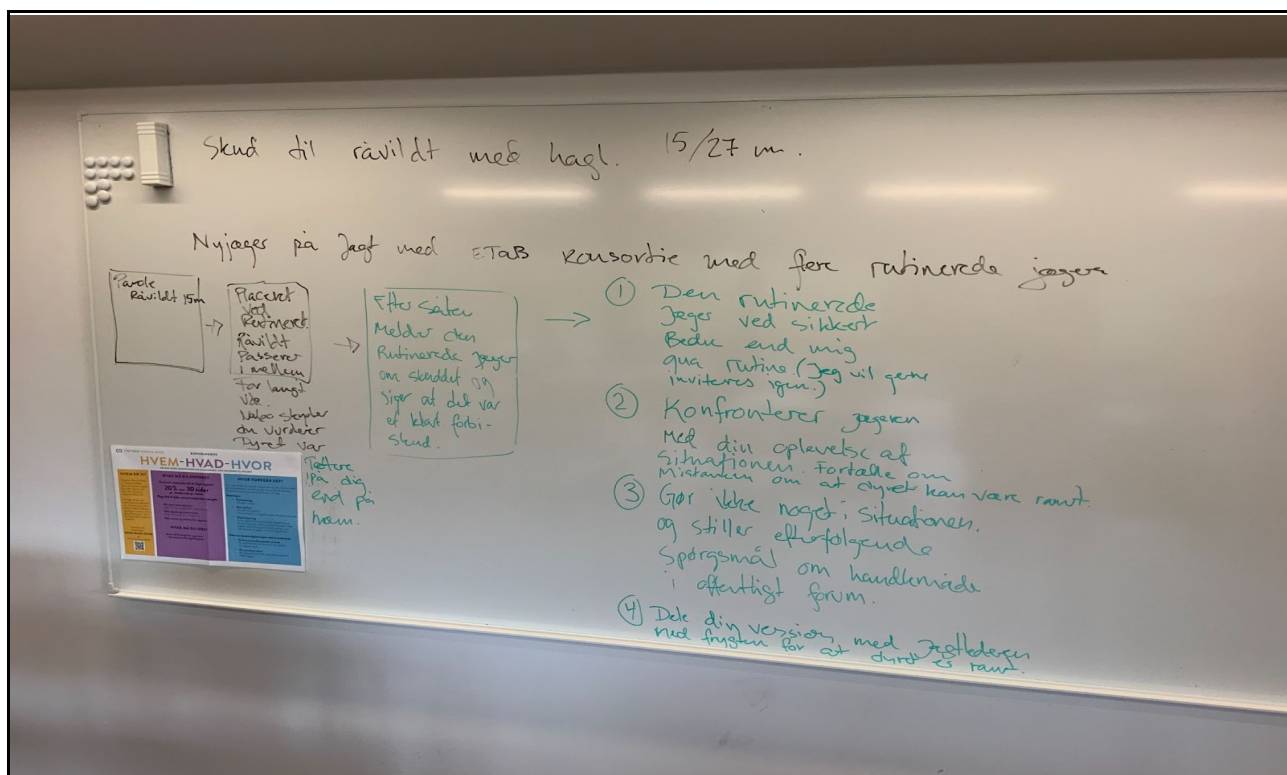
They decide on a situation that almost all hunters will encounter at some point during their career. A situation which tap into the challenges of how to act and react in the situation, as well as the discrepancy between textbook examples and reality. The situation has no connection to those presented as topics for the workshop, but how they go about describing and creating the storyboard bear close resemblance to the way they took on the four predefined topics.

As we shall see now, the group create a story from experience very close to reality. This next paragraph will show how the group went about with the task, and what they produced.

*There is the classical story of a shot to a roe deer with a shotgun.*

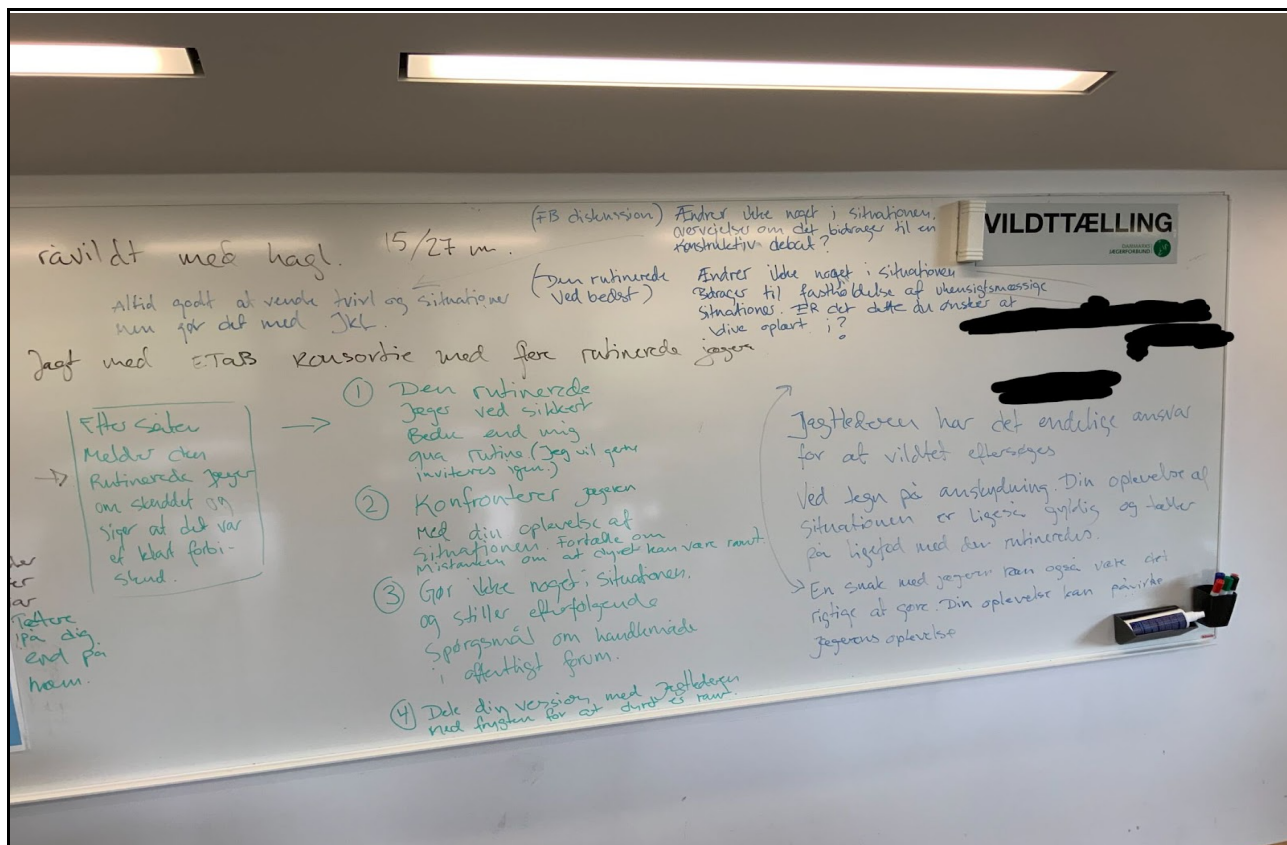
*Oh, I didn't hit that, maybe it was a bit too far out? That's a situation most will encounter at some point. Maybe it would help them [new hunters red.] if they had been through the reflection. How would I handle the situation on a hunt where the instruction states that the maximum distance allowed for shots to roe deer is 15 m, and you see the hunter next to you shoot and wound a deer you would estimate to be 25-27 m away?* (workshop, 2021)

The group agree that it is a relevant situation to bring up, and they begin outlining the story on the whiteboard. They have all witnessed similar situations, and even though they all know and agree to what they would suggest and do themselves, they all recognize that there could be conflicting thoughts going through the mind of a hunter in this situation. The group also find that having reflected on such a situation, may have a positive preventive effect. They also agree that no two situations are the same, and what is right in one situation may not be right in another similar situation. It is therefore decided that there should be several possible actions to take. C chuckles, *"It reminds me of those books, many years ago, where you had to make a choice - either by rolling dice or simply just go to a specific page if you wanted to do a, b or c. Where you as a reader are presented with these concrete dilemmas with no correct answer."* (workshop, 2021) While writing the story on the whiteboard, the participants discuss the different possible actions and their outcomes. They end up with four, two of which they would accept and two they do not think are okay but see as realistic choices in the situation.



Picture 1. The whiteboard with the groups notes.





Picture 2. The whiteboard with the groups notes.

### Situation:

A new hunter, Esben, has been invited to participate in a hunt with a consortium of experienced hunters. After breakfast, the leader of the hunt gives instructions on how the hunt is to be carried out. This is where the story takes its departure.

Good morning and welcome,

For today, we have organized a driven hunt with shotguns only.

Safety first, we don't want any dangerous situations. Please be careful and mind the safety angles of 45 degrees at all times. In case of game moving INTO the hunting area, please make sure not to point your gun at other hunters.

The hunt starts with one long hoot in the horn, and ends with 3 short hoots. Always carry your weapon open between drives. All hunters must bear some kind of signal colour.



Drinking during the hunt is prohibited, and at lunch we don't allow more than one beer or schnapps.

Today, we hunt all species within season, but please don't shoot the partridges.

Please use cartridges with big pellets, as the roe deer has thick fur at this time of year. We also want to remind you of the maximum shooting distances, of which we have decided to subtract 5 meters. We ask you to respect the following distances:

Birds and hare 25 m

Foxes and geese 20 m

Roe deer 15 m

No doubles on roe deer. If a roe deer is hit and a search is needed, the price is 100kr.

All shots fired must be reported to me at the end of each drive.

No one will be blamed or mocked for not taking a shot.

Esben is placed in a long clearing, close to a deer track between two experienced hunters Bent and Knud, and not long after, a roe steps out between Esben and Bent. Esben estimates the distance to be around 20 m and quickly decides not to shoot. Bent however does not hesitate and quickly point his shotgun at the roe and shoots. The roe races across the clearing and into the woods. Esben who is convinced that the roe was several meters closer to him than to Bent, is also convinced he saw the hair on the roe's back lifted by the pellets and the animal flinch from the shot. A couple of minutes later, two pheasants fly by and Bent shoots them both in a brilliant double.

After the drive is over, the leader of the hunt comes to ask about the situation, and Esben overhear Bent tell the leader, that the shot was a clean miss.

How would you react in Esben's situation?

*"Pursuant to the law, there is no correct answer here", (workshop, 2021)A begins. "There actually is one correct answer to this dilemma." (workshop, 2021)B says, "It will always be the responsibility of the leader of the hunt, to make sure the animal is searched for." (workshop, 2021)*

*A reply: "But for Esben, the correct answer is not described anywhere. But you're right, it may function as a post-rationalization, to the dilemma." (workshop, 2021)*

**Actions:**

1. Esben is a guest at the hunt, and does not feel like meddling or to be seen as a know-it-all. Bent has been hunting several years longer than Esben, and he probably knows best - if he says it was a miss, he is probably right.
2. Esben confronts Bent and explain what he saw and his experience of the situation.
3. Esben decides not to say anything, but the situation is still on his mind when he comes home later that afternoon. He decides to post the situation on a hunting group on social media to ask what other hunters would have done in that particular situation.
4. Esben contact the leader of the hunt to tell her how he experienced the situation, and explain that he is convinced that the roe was hit.

*“It is really those deliberations they experience out there. Should I say anything? If I do, will I get invited again? What if I don't?*

*Then you will choose one of those, and we would like to lead over to what B said about the leader having the responsibility. For some, this could be handled very nice and easy. If presented in the right manner, one might even convince the hunter that he should talk to the leader again and ask for a search.” (workshop, 2021)*

The group debate if that is it or if the story should be deepened with potential outcomes of each situation - what happens to be the right thing to do may depend on many factors. They decide to give examples of potential outcomes for each of the four actions to round off the story, and to exemplify that there is no correct course of action, though urging doing what one can to ensure a search.

**Potential Outcome:**

1. If you, don't share your experience, nothing will happen, and nothing will change.

2. This might result in the experienced hunter reconsiders the situation, and decide to ask for a search, or it might end in a heated discussion.
3. Asking for help on social media is widely used, be aware of destructive discussions that might put both hunting and the hunter in a bad light.
4. At the end of the day, the leader of the hunt has the responsibility to send for a dog to do the search, and it is ultimately his/her decision. Your account can help him/her in the decision-making.

If you don't share your knowledge and experiences with your fellow hunters, nothing will ever change, and the same mistakes will be repeated and passed on. The best conditions for the dog to find the deer is if the site is marked and no one contaminates the area by walking all over. A way to secure this is to make sure the hunt does not continue in the same area. We have an obligation to the animals and to secure they will not suffer. If the action of you pointing out that you think the roe was hit, results in you not getting invited a second time - you might want to consider if these people are the ones to learn from and if this is the way you want to hunt in the future.

Many of these issues are discussed on social media, and with different results. Discussions like these frequently end up as heated arguments and often off-topic amongst a few hunters. Take it up with good friends, people you trust, or your hunting instructor.

We are all ambassadors for hunting and hunters, and we are obligated to always do better. Each time someone acts unsuitable it is our responsibility to put our foot down in respect for nature, the animals, fellow hunters and the society that, for the time being, allows us to hunt.

Your bet is as good as any, regardless of your experience.

## An ecology of boundary objects.

The purpose of the worksheets was to give the participants inspiration and to pave the way for working on the issues identified by Dragsbæk (2020). It did however turn out to have yet another

function. The initiating part of the workshop progressed as foreseen, as the participants discussed the introduced theme. Even though the participants were clear about their positions, they treated each statement as an equally valid opinion in the matter, discussing each theme with several solutions. Working from a single topic and a specific statement about a specific theme turned out to be harder than first anticipated. It was clear that even though they found common ground in some matters, these hunters also encountered differences of opinion. When it came to interpretation of issues and which parts to focus on, they did not see eye to eye on everything, just as seen on Facebook. After discussing the first worksheet, the participants needed more time to settle in on the task, ethics and as a group, and asked if they could draw another sheet. The group ended up engaging all the worksheets, each of them in the same manner, by testing statements from both the worksheets and their own persuasion against each other - a procedure that revealed different insights and interpretations not only for each worksheet but for each statement. The following will function to explicate the boundaries that need to be dealt with in creating content for hunters e-learning for the subject of ethics.

## Hunter's language and stories - syntactical boundaries.

Most up-coming hunters are nowadays taught by other hunters in a classroom, contrary to the classic peer-to-peer training. For the main part, the courses are spiced up with hunting stories to connect theory to real experiences. A practice I have witnessed, with every hunting-teacher I have encountered in my six years of teaching and creating of course materials for hunting education. Hunting stories may not be 100% accurate or 100% true, but for the most part it functions to highlight hunters overcoming challenges in a given practical situation, often exemplifying the greatness of a hunter's deeds or achievements as examples to live by. In the real world the stories, for the most part, besides the function to brag, and for self-glorification, also function as examples of how hunting is carried out in practice. Hunting has its own language and expressions to describe procedures, animals, techniques etc., a language that one needs to understand in order to fully grasp the situations depicted. The language is universal amongst hunters in Denmark, and is taught through the mandatory courses and in peer-to-peer training. As expected, none of the participating hunters struggled identifying the theme or situations depicted in the worksheets, as they all know the language. Language and wording was discussed a couple of times during the workshop. The oldest of the participating hunters was offended by language used in one of the statements the group discussed. In this particular situation, the words used to describe an animal were found dis-respectful, and influenced the older hunter's

conception of the situation. Using stories, unlike in the Facebook discussions, allowed the participants a view into the world and situation in which the opinion has its ground. The group also discussed the term 'kuglefang', a term used by hunters to describe a safe background when shooting a rifle - a word used by hunters but also a word that does not exist anywhere in the curriculum, except in the "dictionary of hunting expressions". (Danmarks Jægerforbund –B)

During the workshop, the participants created a hunting story, built on a situation most hunters will encounter at some point in their hunting careers and in a language all hunters understand. The story contain information and language, which new as well as experienced hunters will meet or have met during their training courses, peer-to-peer training etc., placed in a realistic context by experienced hunters. All hunters ought to know the topic and what is at stake, as well as the ethical prescripts that applies to the situation - most experienced hunters will even have encountered this particular situation or one baring close resemblance to it. All hunters, new and old are familiar with this way of communicating situations and challenges, and thus the stories in the language used by hunters alike, functions as a syntactical boundary object. An object to ensure language does not become a barrier.

### Different contexts create semantic boundaries

During the workshop, it became obvious to all participants that not every one perceive each situation or information in a uniform way. As described, hunters are a heterogeneous group in almost every possible way, and also in the group of participants this manifested itself during the discussions. Several times, when discussing the statements in the worksheets, the group found themselves to be surprised by the positions expressed either on Facebook or by each other. Hunters hunt for different reasons and in different ways, have different positions in society, some live in the city and some live in the country, some are wealthy some are not, some hunt only with friends and some only hunt alone, the contexts are many and so are the approaches to hunting. The ones acquiring a hunting licence today are not the same as those 20, 30 or 40 years ago, and more and more has no other hunters in their family. Different approaches give different stances and opinions, which cause different interpretations and persuasions that affect behaviour in a given situation.

From the worksheets of conflicting statements, the group identify their discussions to be about dilemmas "*How would I handle this situation?, (...) are you always obligated to act?*". (Workshop, 2021) The group is aware that the response that worked for one hunter in one situation might not work or be appreciated in another, similar situation. In other words, how to act is context dependable,

and thus they do not want to dictate a single course of action. They are all clear about their own persuasion and how they would act individually, but they are also aware of the challenges, especially new hunters, are faced with when they first begin to hunt. The group wants to equip hunters for these kinds of situations, without shutting out other potential solutions. The creation of dilemmas and multiple reactions allow for different interpretations of the situations to be faced. By exemplifying several correct acts, the space for action in a given context remains open while illustrating other options. This allows for different approaches, and thus the creation of dilemmas with multiple solutions function as boundary objects at a potential semantic boundary. Dilemmas as ‘answers’ allow a discussion of interpretations and allow each hunter to act according to context and to reflect on context boundaries.

## Continuing negotiation - pragmatic boundary

After the workshop, the group discuss the process and outcome of the work.

B express that he doesn't know anything about educational techniques or have any experience doing these things, but he also thinks that it went okay. They all agree that the approach (creation of dilemmas), is applicable to many other practical hunting situations as a way to facilitate reflection and by doing it through workshops as this one, you allow non-teachers to contribute.

*“It is a way where you end up with an end product that could become e-learning, drawing on B’s experience. Even though his knowledge about e-learning and education is limited, you may draw on his professional competences, by facilitating it this way. By doing so, it is not only people with a didactic background or people familiar with producing e-learning who may contribute.”* (Workshop, 2021)

Continuation of the work and process of discussing, describing and negotiating dilemmas, incorporating these into hunting stories to spark reflection, makes for a pragmatic boundary object. A boundary object, at a pragmatic boundary, allow for knowledge to be altered and transformed across contexts, like the contexts that changes with every hunter group constellation. The participants found that creating dilemmas from real issues through workshops, as the one they have just finished, may help facilitate a most needed focus and reflection on ethics, and that more situations could be described and discussed from the creations of similar dilemmas. Working continuously from the dilemmas describing situations, telling stories incorporating new topics of interest will secure refinement and advancement of hunters’ knowledge on ethics in hunting. This approach to content

creation allows any hunter, regardless of knowledge on education and learning, to participate in the production of knowledge and the advancement of the collective state of knowledge. To keep this concept going, hunters need to be asked to supply situations and dilemmas they have encountered. The group suggested it to be done either through questionnaires or directly through the e-learning system. The e-learning system must then, besides the function to share the produced content and insights, securing availability to all within the community also feature options to submit stories and dilemmas.

## Concluding remarks

From the analysis, it becomes evident that three boundaries have the capacity to hinder knowledge building in the hunting community. First, there is a syntactical boundary concerned with the language and the way hunters communicate through stories. The language of hunters is special and functions as a common ground and a basis for hunters conversation. Using the language creates a baseline from which to move forward, while the hunting story builds the excitement and allows other hunters to imagine the situation and establish interest. The second is the semantic boundary concerned with interpretation that can not be ascribed to language, but are ascribed to knowledge of contexts. And the third, the pragmatic boundary, the workshop that allows for ethics to be revisited, a boundary that in this case will only function if the other two are in order.

Working from the theory of boundary objects, allows a greater focus on the gaps between groups, contexts and also between individuals. It allows identifying what needs to be overcome in order to, in this case, convey and share ethical considerations.

The identified boundaries and boundary objects can aid hunters' work in workshops, as the stories and storytelling in hunters' natural language, forms a joint syntax, or language easily understood by all hunters. The stories allow the hunters a much-needed context to a statement necessary for comprehension. The boundary objects may also help exchange knowledge without alienating the beliefs and approaches of others, as is the purpose of the dilemma approach the group employ. So far the boundary objects have been connected to interactions both the syntactical, of language and storytelling, and the semantic boundary concerned with the dilemmas allowing for different views to be presented. It is, however, in knowledge building compellingly necessary that knowledge advance.

For knowledge to advance, it needs to be examined and discussed, action with need to combine the above-mentioned boundary objects in the workshop as an overarching pragmatic boundary object.

## Discussion

Within the field of CSCL current research primarily focus on technological artifacts as sources of intersubjective meaning making. Researchers are occupied with investigating software that assists, allows and increases collaboration and the effect and outcome of such collaborative learning. It is the aim to enhance or build new IT artifacts as facilitators of collaboration. An approach that makes very good sense when looking at learning that takes place in structured formal settings such as schools and universities, where students go to learn every day, engaging in learning on the same level as their fellow students. But what about different types of education? What about aspirants and students that does not conform to the same standards of age, setting or educational background, level of skill etc.? How can we investigate computer supported collaborative learning in other settings than those in the formal education system?

With this thesis, I have sought to investigate how working with issues and real life situations may help to overcome boundaries in knowledge building amongst hunters on the topic of hunting ethics. Employing the concept of boundary objects on the empirical data from a small group workshop has allowed identification of several different boundaries throughout the process, as well as ways to successfully cross them. In the following, I will discuss the results and how this approach can be useful, in creating e-learning in a non-formal educational setting.

I suggest starting in small groups to identify who these groups are and who they represent, as well as investigating how they talk, how they interact and how they negotiate as working with and engaging the negotiations, discussions and dilemmas made boundaries between hunters visible.

The workshop approach was originally designed to test collaboration between hunters, in the attempt to create content on the ethics curriculum for the e-learning system. A test that would help decide if this should be adopted as a strategy for creating e-learning content at DHA. The workshop would allow me to test whether regular hunters could be invited to participate in preparing e-learning without being trained educators, despite the didactic challenges of a heterogeneous group such as Danish hunters. By concentration on the content creation, didactics needed less attention, as didactics focus



more on the delivery of said content than the content itself. The participants were also a diverse group, they were of different educational levels, different ages, engaged in different types of hunting and even though there were no new hunters, they had all been hunters for different durations. As the workshop progressed, it became clear that the challenges of the Facebook audience from whom I gathered the empirical data for the worksheets, was found to be the same in the real life setting. The discussions were the same, although far more civil. The challenges attributed to their differences in interpretation created boundaries, boundaries of comprehension due to their individual interpretations of the situations depicted in the statements. Watching the participants negotiate understanding of the statements by using their experiences and their skills in hunters storytelling, opened for not only identifying boundaries but also revealed natural inherent boundary objects that would allow for a boundary crossing across different hunters contexts.

## What does the case do for CSCL?

This case, however limited in magnitude, functioned to show that the field of CSCL need to address the challenge of computer supported collaborative learning in non-formal contexts and environments. Learning and, as of interest to this study, knowledge building, takes place in multiple arenas, and non-formal contexts. A theme on the rise with the ongoing focus on Lifelong Learning and with it, contexts, such as the one seen in the hunting community, calls for a different strategy than that of formal settings (schools, universities etc.). In the formal education system, people are there to learn every day, an arena that would allow continuous use of collaborative learning software. In such an arena, it truly makes great meaning to investigate how a group of students creates joint meaning, to improve software and the possibilities it brings. In other contexts however, such as the context of hunters' continuation education, having groups continuously meeting and partake in collaborative learning, will be a challenge that all to itself could constitute an entire research project. Researchers need, in fields as hunters' continuous education, to back up a few steps, to first identify how and under what circumstances collaboration will be possible. An infrastructure of workshops, as the workshop, described in this thesis, will allow for knowledge to advance by continuously visiting and revisiting dilemmas of real life situations, using an e-learning platform to both distribute dilemmas and possible solutions, and to collect reactions from those who engage in the e-learning.



- [1] Jagt i et historisk lys. *Bæredygtig jagt*. Retrieved October 15, 2020 from [baeredygtigjagt.dk](http://baeredygtigjagt.dk)
- [2] Muriel Bourdon. 2014. Lifelong Learning from the '70s to Erasmus for All: A Rising Concept. *Procedia - Soc. Behav. Sci.* (2014). DOI:<https://doi.org/10.1016/j.sbspro.2014.01.697>
- [3] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 2 (January 2006), 77–101. DOI:<https://doi.org/10.1191/1478088706qp063oa>
- [4] Paul R. Carlile. 2002. A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organ. Sci.* (2002). DOI:<https://doi.org/10.1287/orsc.13.4.442.2953>
- [5] Council of Europe. Formal, non-formal and informal learning. Retrieved July 27, 2021 from <https://www.coe.int/en/web/lang-migrants/formal-non-formal-and-informal-learning>
- [6] Danmarks Jægerforbund - A. 2017. Strategi 2017-2021. *Jaegerforbundet.dk*. Retrieved October 2, 2020 from <https://www.jaegerforbundet.dk/om-dj/hvem-er-vi/organisation/strategi/>
- [7] Danmarks Jægerforbund - B. Ordbog over jægerudtryk. *Jaegerforbundet.dk*. Retrieved July 27, 2021 from <https://www.jaegerforbundet.dk/jagt/bliv-jaeger/nyjaeger/ordbog-over-jaegerudtryk/>
- [8] Danmarks Jægerforbund - C. Viden og uddannelse til jægere. *Jaegerforbundet.dk*. Retrieved July 27, 2021 from <https://www.jaegerforbundet.dk/det-sker-i-dj/kurser-og-arrangementer/kursusreolen/>
- [9] Danmarks Jægerforbund - D. 2021. Lovforslag om naturnationalparker afviser rekreativ jagt. *Jaegerforbundet.dk*. Retrieved from <https://www.jaegerforbundet.dk/om-dj/dj-medier/nyhedsarkiv/2021/lovforslag-om-naturnationalparker-afviser-jagt/>
- [10] Danmarks Naturfredningsforening. 2020. Nye mulige giftedrab på rovfugle: Fire havørne fundet døde. *dn.dk*.
- [11] Sebastian Dennerlein. 2013. Understanding and supporting intersubjective meaning making in socio-technical systems: A cognitive psychology perspective. In *CEUR Workshop Proceedings*.
- [12] Silvia Dewiyanti, Saskia Brand-Gruwel, Wim Jochems, and Nick J. Broers. 2007. Students' experiences with collaborative learning in asynchronous Computer-Supported Collaborative Learning environments. *Comput. Human Behav.* (2007). DOI:<https://doi.org/10.1016/j.chb.2004.10.021>
- [13] P Dillenbourg. 1999. What do you mean by collaborative learning? chapter 1. *Collab. Cogn. Comput. approaches* (1999).

- [14] Pierre Dillenbourg, Sanna Järvelä, and Frank Fischer. 2009. The evolution of research on computer-supported collaborative learning: From design to orchestration. In *Technology-Enhanced Learning: Principles and Products*. DOI:[https://doi.org/10.1007/978-1-4020-9827-7\\_1](https://doi.org/10.1007/978-1-4020-9827-7_1)
- [15] Mads Dragsbæk. 2020. *Ethics in hunting education*.
- [16] European Commission. 2001. Making a European area of lifelong learning a reality – communication from the commission, COM(2001) 678 final. *Eric* (2001).
- [17] Folketinget. 2021. Er jagt og fiskeri foreneligt med streng naturbeskyttelse? *eu.dk*. Retrieved from <https://www.eu.dk/da/aktuelt/nyheder/2021/februar/er-jagt-og-fiskeri-foreneligt-med-streng-naturbeskyttelse>
- [18] Nick J. Fox. 2011. Boundary objects, social meanings and the success of new technologies. *Sociology* (2011). DOI:<https://doi.org/10.1177/0038038510387196>
- [19] Mickey Gjerris, Sune Borkfelt, Christian Gamborg, Jes Harfeld, and Sara Kondrup. 2016. *Jagt. Natur, mennesker, dyr og drab*. (1. ed.). Forlaget Klim, Aarhus.
- [20] Bente Halkier. 2015. Fokusgrupper. In *Kvalitative metoder : en grundbog*. 137–151.
- [21] Charlotte Jensen. 2007. *Nyjægere i Danmark. En undersøgelse af unge og nye jægers baggrund, motivation, jagtadfærd, viden og holdninger til jagt og natur*.
- [22] Colin Latchem. 2014. Informal Learning and Non-Formal Education for Development. *J. Learn. Dev.* (2014).
- [23] Miljø- og fødevareministeriet. 2020. Vejledning til jagttegnsundervisning. Retrieved from <https://mst.dk/media/200046/vejledning-til-jagttegnsundervisning-2020.pdf>
- [24] Ministry of Children and Education. 2018. Non-formal adult education. Retrieved July 27, 2021 from <https://eng.uvm.dk/adult-education-and-continuing-training/non-formal-adult-education>
- [25] OECD. 2001. Lifelong Learning for all: Policy directions. *Educ. policy Anal.* (2001).
- [26] Francesca Pozzi, Stefania Manca, Donatella Persico, and Luigi Sarti. 2007. A general framework for tracking and analysing learning processes in computer-supported collaborative learning environments. *Innov. Educ. Teach. Int.* (2007). DOI:<https://doi.org/10.1080/14703290701240929>
- [27] Marlene Scardamalia and Carl Bereiter. 2003. *Knowledge building* (2nd ed.). Macmillan Reference, New York.
- [28] Marlene Scardamalia and Carl Bereiter. 2006. Knowledge Building : Theory , Pedagogy , and Technology. *Cambridge Handb. Learn. Sci.* (2006).

- [29] Marlene Scardamalia and Carl Bereiter. 2005. Knowledge Building. In *The Cambridge Handbook of the Learning Sciences*. Cambridge University Press, 97–115.  
DOI:<https://doi.org/10.1017/cbo9780511816833>
- [30] Silke Schworm and Alexander Renkl. 2006. Computer-supported example-based learning: When instructional explanations reduce self-explanations. *Comput. Educ.* (2006).  
DOI:<https://doi.org/10.1016/j.compedu.2004.08.011>
- [31] D A Schön. 1982. *The Reflective Practitioner: How Professionals Think In Action*. Basic Books.
- [32] Seismonaut and Miljøstyrelsen. 2019. *Evaluering af formidling og efteruddannelse inden for jagt og vildtforvaltning*.
- [33] Gerry Stahl, Timothy Koschmann, and Dan Suthers. 2006. Cambridge Handbook of the learning sciences. Computer-supported collaborative learning: An historical perspective. *Cambridge Handb. Learn. Sci.* (2006).
- [34] Susan Leigh Star and James R. Griesemer. 1989. Institutional Ecology, ‘Translations’ and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907–39. *Soc. Stud. Sci.* (1989).  
DOI:<https://doi.org/10.1177/030631289019003001>
- [35] Sebastian Strauß and Nikol Rummel. 2020. Promoting interaction in online distance education: designing, implementing and supporting collaborative learning. *Information and Learning Science*. DOI:<https://doi.org/10.1108/ILS-04-2020-0090>
- [36] Michelle Scalise Sugiyama. 2017. Oral storytelling as evidence of pedagogy in forager societies. *Front. Psychol.* (2017). DOI:<https://doi.org/10.3389/fpsyg.2017.00471>
- [37] Daniel D. Suthers. 2006. Technology affordances for intersubjective meaning making: A research agenda for CSCL. In *International Journal of Computer-Supported Collaborative Learning*. DOI:<https://doi.org/10.1007/s11412-006-9660-y>
- [38] Daniel D. Suthers. 2005. Collaborative knowledge construction through shared representations. In *Proceedings of the Annual Hawaii International Conference on System Sciences*. DOI:<https://doi.org/10.1109/hicss.2005.151>
- [39] Niels Søndergaard, Nicholai Vigger Knudsen, Jes Skadborg Mikkelsen, Niels Henrik Simonsen, and Danmarks Jægerforbund (Eds.). 2020. *Lovsamling til jægeren 2020-2021* (20/21 ed.). SEGES, Aarhus.
- [40] TvMidtvest. 2019. Ulvedrab for landsretten: Mourits Trolldoft vil have endnu en DNA-undersøgelse. *tvmidtvest.dk*.
- [41] UNESCO. 2012. *International Standard Classification of Education (ISCED) 2011*. DOI:<https://doi.org/10.15220/978-92-9189-123-8-en>

- [42] Jan van Aalst. 2009. Distinguishing knowledge-sharing, knowledge-construction, and knowledge-creation discourses. *Int. J. Comput. Collab. Learn.* (2009). DOI:<https://doi.org/10.1007/s11412-009-9069-5>
- [43] Rene Victor Valqui Vidal. 2005. *The Future Workshop: Democratic problem solving*.
- [44] Vildtforvaltningsrådet. 2006. *Indfangning, udsætning og jagt på fasan, agerhøne og gråand i Danmark*. Retrieved from <https://www.ft.dk/samling/20051/almdel/mpu/bilag/235/242800/index.htm>
- [45] Jane S. Vogler, Diane L. Schallert, Michelle E. Jordan, Kwangok Song, Anke J.Z. Sanders, Yueh hui Yan Te Chiang, Ji Eun Lee, Jeongbin Hannah Park, and Li Tang Yu. 2017. Life history of a topic in an online discussion: a complex systems theory perspective on how one message attracts class members to create meaning collaboratively. *Int. J. Comput. Collab. Learn.* (2017). DOI:<https://doi.org/10.1007/s11412-017-9255-9>
- [46] Guangji Yuan and Jianwei Zhang. 2019. Connecting knowledge spaces: Enabling cross-community knowledge building through boundary objects. *Br. J. Educ. Technol.* (2019). DOI:<https://doi.org/10.1111/bjet.12804>
- [47] Jianwei Zhang, Guangji Yuan, and Maria Bogouslavsky. 2020. Give student ideas a larger stage: support cross-community interaction for knowledge building. *Int. J. Comput. Collab. Learn.* (2020). DOI:<https://doi.org/10.1007/s11412-020-09332-4>
- [48] Rikke Ørngreen and Karin Levinsen. 2017. Workshops as a research methodology. *Electron. J. e-Learning* (2017).