

How the characteristics of a problem differ in the military context

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Introduction of whole PhD project

Problem-based learning is widely used in civilian schools, but is not very often applied in military educational establishments. This also applies to early-call conscripts (future commanders in reserve) training in Estonian Defence Forces.

Reserve unit's commanders are expected to be able to act in very complex environment (battlefield) in accordance to requirements of mission command (e.g. take initiative, decide and act independently while leading their troops and fulfilling commanders intent).

As a result of the training they can act and even lead their troops quite well under concrete orders, but fail to take the initiative and act independently in the situations, where there are no direct orders available.

Problem-based learning has proved to be successful in many occasions in civilian schools – not only improving knowledge and skills of learners, but also have positive effect on interest, motivation and attitudes of students (Potvin & Hasni, 2014).

The same learning outcomes are important in early-call conscript's training. Thus problem-based learning might be useful tool to improve their training.

This PhD project as whole aims to compile a problem-based teaching/learning model in order to improve early-call conscripts training.

As a result of this, conscripts are expected to have suitable knowledge, skills and attitudes towards willingly taking initiative, deciding and acting while leading their troops in battlefield (which can be seen as difficult problem situation).

Objectives of current study

This study (part of PhD project) starts with clarifying the characteristics of a problem in military context. It aims to answer the following questions:

- How is problem typically defined in the scientific literature and how well those definitions suit in to the context of military?
- What are those aspects of the problem in military profession, which deviate from general definition of the problem?

Literature cited

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Results

Problem in general. A problem has been defined as an *unknown entity* e.g. difference between the current state and goal state (Jonassen, 2000). The need to *achieve goals* has been mentioned; in this case, a problem occurs if the solver has to achieve an objective (Mayer & Wittrock, 1996).

A value for the solver has been argued: Arlin (1989), for example, adds that there has to be “*felt need*”, e.g., motivation to solve it (Arlin, 1989).

Thus, a problem must offer some social, cultural, or intellectual *value to the solver* (Jonassen, 2000). It is also argued that in the case of a real problem it is not exactly known how the goal state looks like and how to reach it (Robertson, 2001). [See figure 1.](#)

Problem in the military context. The definition of a problem suits in the military context, but some adjustments can be made. Although the need for a practical and motivating environment (Meacham & Emont, 1989) and situation (Jonassen, 2000) were mentioned, a problem was still typically defined only as an unknown entity between the current state and goal state.

However, in the military context, in addition to *specific practical situation* it is always necessary to consider the problem in the context of a “*bigger picture*”, which gives the problem a broader military background.

Another difference is that in the military, problem solvers operate in the context of a *military subordination system*, where solving the problem is an *order*.

As a result of that, the problem *still exists* even if the solver *cannot recognize it*. In the military context, an unsolved problem (but given as order to solve) in practical situation can escalate to a bigger problem for someone else later.

Thus in military, *problems cannot be ignored even though they might not offer any cultural, intellectual or social value to the solver* – they must be solved anyway and cannot be overlooked by the solver as the definitions typically suggest.

The acceptance of losing human life and the unclear price of the goal makes problem solving in the military profession quite different from the general definition of a problem. [See figure 2.](#)

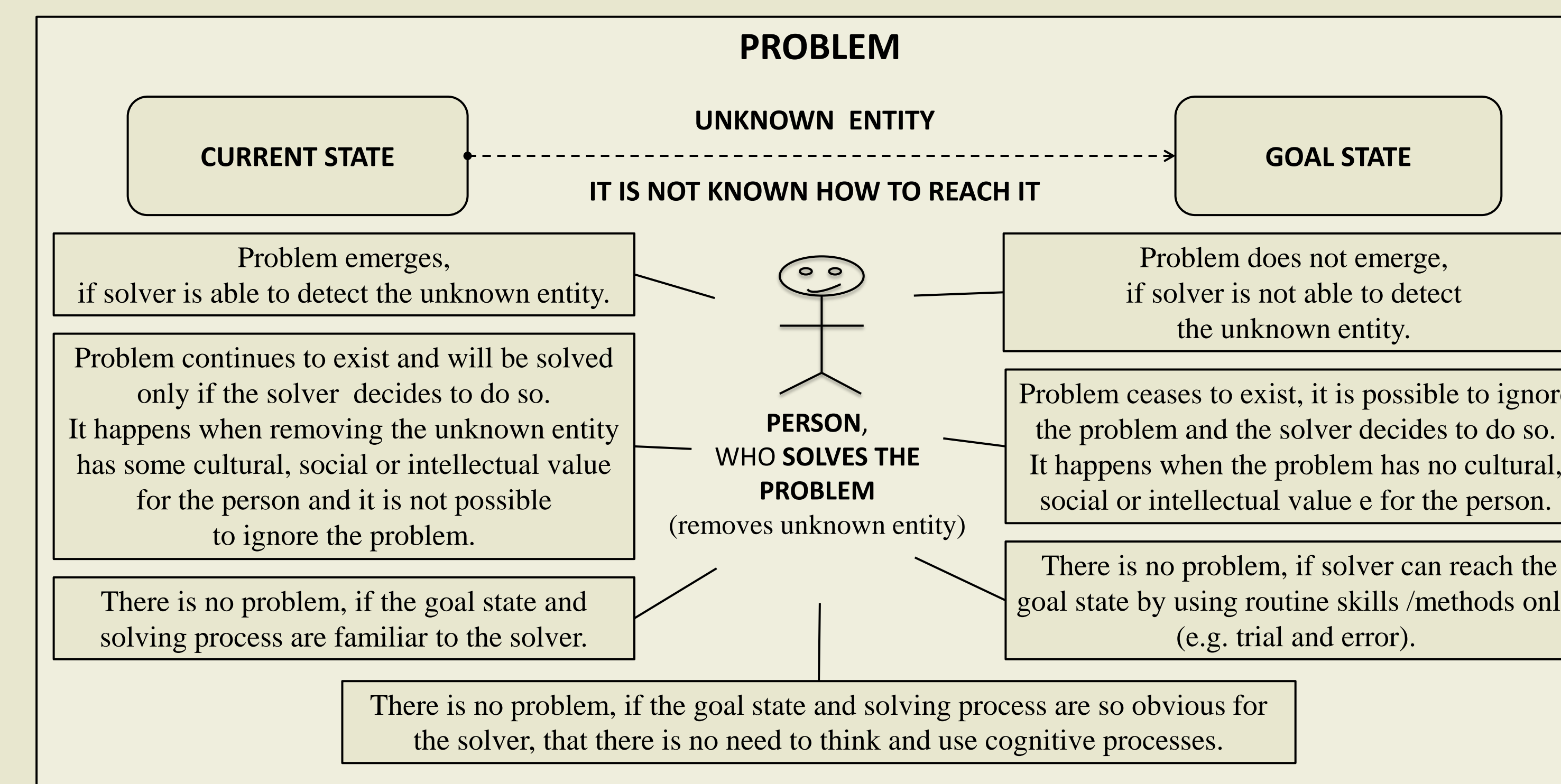


Figure 1. Characteristics of problem in general (Davis, 1973; Eysenc, 1984; Mayer&Wittrock, 1996; Meachan&Emont, 1998; Arlin, 1998; Jonassen, 2000; Nitko, 2001 ja Robertson 2001).

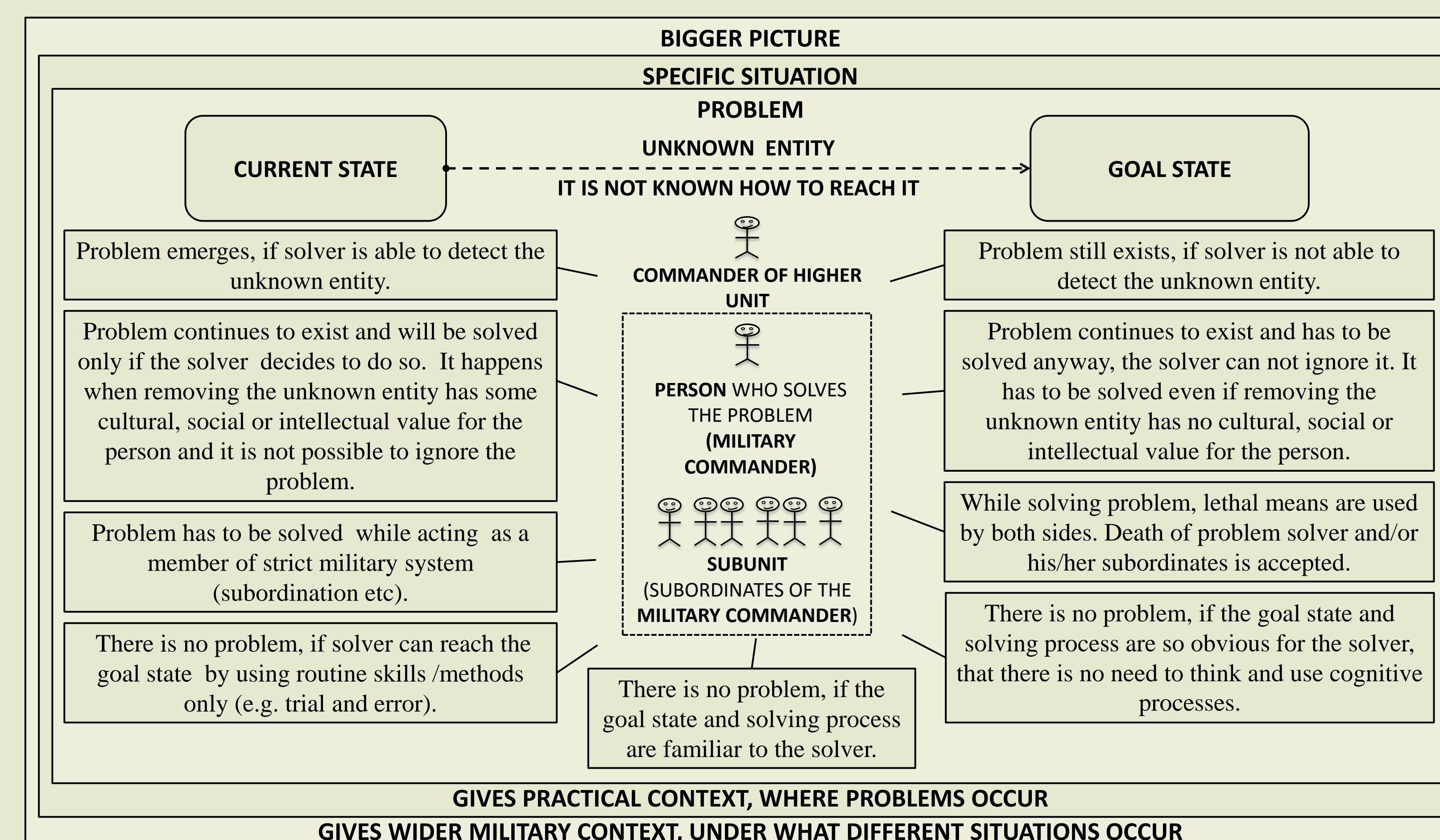


Figure 2. Characteristics of problem in military context (adapted model based on previous model, author own experiences in the field of military training and results of interviews).

Methods and procedures

In order to fulfil the objectives of this study I used two main methods:

- (1) An overview of the literature about the definition of the problem was given.
- (2) Interviews (semi-structured) were held with 6 different military officers and non commissioned officers in order to find out and specify different aspects of problem in military context. All interviews were transcribed and later categorized with the NVIVO10 programme in two stages: deductive and inductive.

Conclusions

In conclusion, a problem in the military context can be defined the same way as in general: an unknown entity between the current state and goal state in some practical situation, which, at the same time, is part of a “*bigger picture*”. In military profession the most important characteristics, which deviate from general definition of the problem, are:

- (1) **Value of the achieved goal compared to human life:** There might be a need to kill human beings and as a commander - sacrifice the lives of your subordinates (including danger to be killed yourself). This is different from all other professions and creates huge moral dilemmas.
- (2) **Value for the problem solver:** As a result of previous point: in military profession problems might not offer any social, cultural or intellectual value, but they have to be solved anyway.
- (3) **Acting under strict military system in complex environment:** In military profession one can not just ignore problems while following orders and/or higher commanders intent (risk taking and prioritizing still accepted) in the changing environment, which can sometimes make otherwise simple problems difficult.
- (4) **The scale of impact and level of significance:** characteristics, which military commander has to consider: (1) group under influence, (2) level of threat to this (or bigger) group.

Way ahead

Upcoming studies aim to implement a **problem based learning/teaching model for early-call conscripts training: empirically by:**

- Developing the models, which are in line with SAT (Systems Approach to Training) model support discovering potential real life problems in reservists future military service and incorporating them in to the early-call conscripts training.
- Testing the models by discovering some potential real life problems of future reservists and asking expert opinion about those problems.
- Testing the models by asking experts to evaluate discovered problems.
- Selecting problems to be added in to the design process, getting expert solutions to those problems.
- Based on the results of previous steps designing a problem based training program for early-call conscripts.
- Testing the designed program empirically by conducting training for influenced group of early-call conscripts in accordance to designed program.
- By using control (not influenced) group, comparing the effectiveness of designed problem-based program.

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