

# The coevolution of system and developer's understanding in practicing an Empirical Modelling approach to systems development: a case study on cricket simulation

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## **Abstract**

In systems development, the developers' intuitive knowledge and insight into the problem and into the artifact being constructed coevolves with the system under development. As the developer gains more knowledge about the problem domain, it is not unusual to make changes to the developing artifact. As Naur (1984) argues, the development process is a 'continued interplay' between the developer's growing knowledge, of both the problem and its solution, and the developing artifact and the real world. This interplay includes the interaction between the developers throughout the development process. As a result, systems development can be viewed as a collaborative problem solving and learning process. Empirical Modelling is a body of principles and tools that can be used in systems development. It potentially provides better support to the aforementioned interplay between the developers and the system.

This talk presents a case study on a software development project directed at cricket simulation. It was an undergraduate group project in a module in computer science in 1993. The class of 122 students was equally divided into 11 groups according to their expertise. The student developers were asked to develop a cricket simulation for a fictional county cricket club and were asked to practice the Empirical Modelling approach during the early stages of the development. The focus in my case study has been on the coevolution of the system and the developers' understanding during the development process, and particular attention is paid to the application of dependencies and agency, and to modelling the game of cricket through different modes of observation. We randomly chose a group and studied their project reports, meeting minutes and the definitive scripts they developed in detail. We found evidence that the students who do not possess knowledge of cricket gradually learnt about the game through the collaborative work with their teammates and through the progressive development of their individual model of the cricket game.