Chapter XII

An Application of Multi-Agent Simulation to Policy Appraisal in the Criminal Justice System

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ABSTRACT
This chapter reports on a multi-agent approach to the construction of a model of the English criminal justice system. The approach is an integration of model-building with ways of enabling people to engage in strategic policy making and take into account the complex interactions of the criminal justice system. From the workings of the police to court procedures to prisons, decisions in one area of the criminal justice system can be crucial in determining what happens in another area. The purpose was to allow assessment of the impact across the whole justice system of a variety of policies.
INTRODUCTION

This chapter reports on a multi-agent approach to the construction of a model of how the criminal justice system in England operates. The model’s principal purpose is to allow the impact of policy variants across the whole justice system to be assessed.

Because the model is designed to help people to think about what happens when things are changed in a deliberative manner, we provide some examples of policy changes for which the model is designed to help. We also discuss a visualization that is representative of what the model can do for different policy views.

In the next section, we describe the structure of criminal justice in England. Section 3 discusses the purpose of the project, which goes beyond the mere construction of a model. In producing the model there were at least two aspects of interest: the way in which the problem was approached, and the physical representation of a solution which we call a “model”. These are discussed in Sections 4 and 5.

THE CONTEXT

The criminal justice system in England is delivered by diverse government bodies— as is true in many other countries. In England these are not part of a single government department. There are three departments involved: the Home Office which is by far the biggest financially and in terms of human resource; the Department of Constitutional Affairs; and the Crown Prosecution Service.

Each of these has its own government minister, and in the case of the first two, has a range of responsibilities outside of those that we consider in constructing a model of the criminal justice system. Thus the Home Office is also responsible for immigration and for homeland security, whereas the Department of Constitutional Affairs also has responsibility for civil and family law.

The Home Office’s criminal justice responsibilities include the Police Service, the Prison Service and the Probation Service. But this is not a direct operational responsibility. Other agencies are responsible for the delivery of each service. there is little direct financial accountability (although all rely on central government funds) and only limited operational interference. Top-level targets are set for each service but how useful these are is uncertain. Operational control is divided across 42 areas of the country. Determining how things are run is a local matter.

The Department of Constitutional Affairs is responsible both for the courts and, via an executive agency, for the provision of free criminal defence services (known as Legal Aid). The courts are divided between lower and higher courts: The former are called magistrates’ courts and deal with lesser offences; the latter are called the Crown Court and generally deal with more serious cases. The Crown Prosecution Service is responsible for prosecuting criminal cases. It is the least complex of the three bodies.

How the criminal justice system functions depends crucially on the way in which each of these bodies delivers services, and on the interactions between what happens in one, and what happens in another, as well as within each agency. Within each part of the system, there are thousands of individual agents who act according to sets of rules some of which are fairly proscriptive, and others which are rules of thumb, often undescribed.
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