

### **Cognitive Mapping and Decision Explorer**

Decision Explorer was originally designed to support a particular form of cognitive mapping developed by Colin Eden and his colleagues first at the University of Bath and later at Strathclyde University. It was used on their work in strategy development. The team was influenced by Kelly's personal construct theory (Kelly 1955) and they adopted certain elements of that theory. These elements include the individuality, the sociality, and the commonality corollaries, which were seen as key for working with individuals and teams in organisations. Briefly, these say that people have different experiences and therefore, construe events in different ways (*the individuality corollary*); that to the extent that we are able to construe other people's constructions we can communicate with them - take part in a social process (*the sociality corollary*); and finally, to the extent that we have had experiences similar to other peoples', our personal constructs tend to be similar to the construction of those people (*the commonality corollary*). Furthermore, for problem solving, (*the construction corollary*), that we anticipate future events according to our interpretations of recurrent themes. This is important in strategy development, in that in order to get a sense of commitment and agreement to action, a common way of construing the future is needed.

Therefore, a cognitive map represents an individual's personal construct system i.e. their beliefs, values etc. Several methods can be used to elicit an individual's construct system, such as *repertory grids* (Fransella and Bannister, 1977) and *laddering*. Decision Explorer was originally designed to be a quicker, more elegant method to elicit personal construct systems. [Note that it was originally designed to *collect* data as well as to *analyse* it.] Elements from the repertory grid technique and laddering are evident from the way Decision Explorer users are encouraged to map. The notion of *bi-polar constructs* comes from the repertory grid technique. That is, when you elicit a construct from an individual's personal construct system, you try to get them to contrast it with what they perceive to be its opposite. The opposite pole helps to put into context what the individual meant by their original statement. Consider the statement: mapping helps you explore ideas.

One individual may contrast that statement in the following way:

Mapping helps you explore ideas *rather than* wasting time with lots of pieces of paper.

Another individual might make the same initial statement but contrasts it differently:

Mapping helps you explore ideas *rather than* just making a snap judgement.

The opposite poles help you to understand better the line of reasoning going on in an individual's mind.

Decision Explorer users are also encouraged to use *laddering* when eliciting an individual's personal construct system. You can 'ladder upwards' to determine the consequences of the construct. (As you keep laddering upwards you will form chains of consequences to the individual's value or goal system.) You can also 'ladder downwards' to determine the explanatory constructs or belief system that supports a construct. If you are new to laddering as a technique, you can think of it as asking a

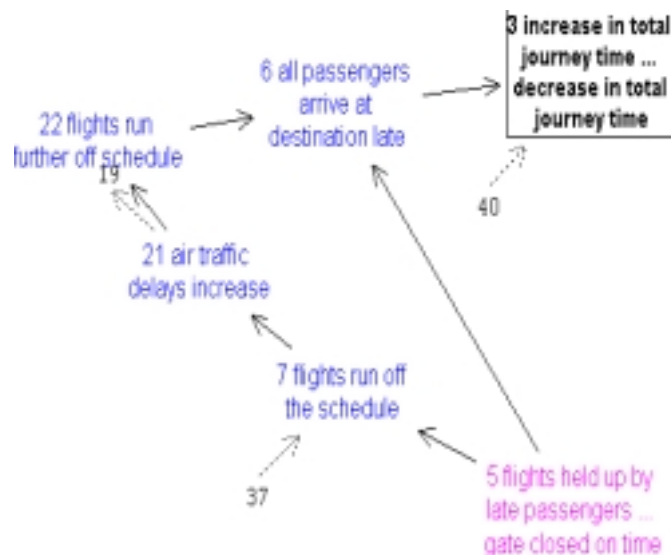
series of simple questions. To move up the ladder to find out the consequences of a construct, you can ask a series of Why? questions. Such as *why* is this important to you or *why* do you want to achieve this? To move down the ladder to determine the belief system or explanation of a construct, you ask a series of How? questions. Such as *how* was that caused or *how* was that achieved or *how else* could that be achieved?

We will use an example from the X-ray project that comes with Decision Explorer. It represents the thoughts of someone who is angry about the long queues at the luggage x-ray machine at an airport. We can start with the element:

5 flights held up by  
late passengers ...  
gate closed on time

(Note that the '...' in the above example, should be read as 'rather than'.)

To ladder up from this element (e.g. to find out the consequences of this element) we ask the question, Why is this important to you? We get the following responses:



As you can see, it leads to the ultimate non-goal - increase in total journey time *rather than* decrease in total journey time.

In the same way, we can find out the factors that led to that construct by asking the question, How was that caused?



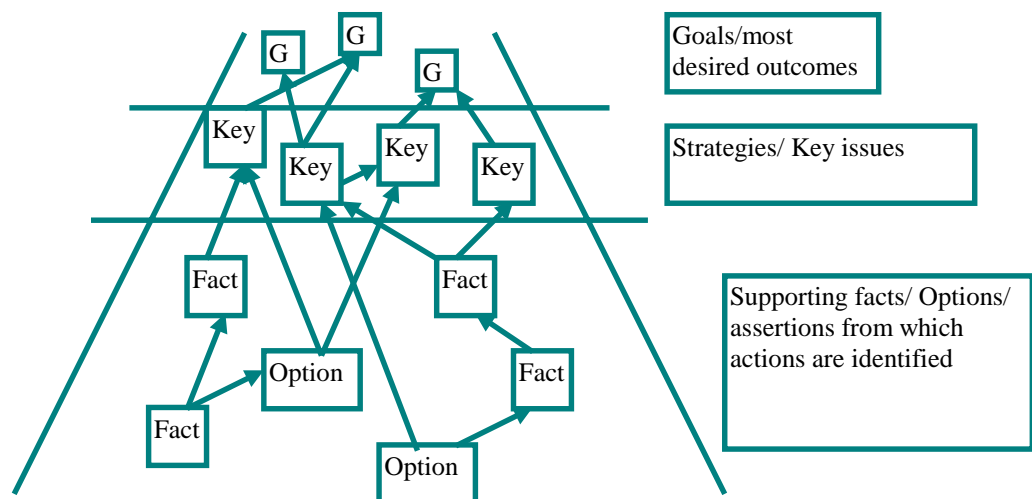
So we can see that long queues at the x-ray machine led to flights held up by late passengers.

By using bi-polar constructs and the laddering technique you can flesh out more completely how an interviewee views their world, what connections they see between issues, what consequences they see things have etc. The map provides a representation of their view of the world and so it should be constructed with them, so that they can verify the connections you are mapping out. The map can act as a basis for helping the interviewee to gather their thoughts, understand their assumptions about certain issues, and perhaps even change their minds. If you want to use Decision Explorer to aid in strategy development, you can make individual cognitive maps with key players and then use the maps to negotiate a way forward - as maps are merged to represent a group view. This goes back to Kelly's construction corollary - that we anticipate future events according to our interpretations of recurrent themes. The group or strategy map is used to facilitate a common way of construing the future.

### Implications for structuring maps in Decision Explorer

It is important to remember that Decision Explorer is a tool that was originally designed to support a particular form of cognitive mapping used to develop strategy in organisations. The tool may be used for other purposes but to take advantage of its analytical features, there are a few principles in mapping that you should follow. These principles are based on using the laddering technique as described above.

People usually start talking about key issues. These should be placed two-thirds up on a map. This will leave space for goals at the top and the elaboration of explanations or options at the bottom. You will need to use the laddering technique to ask Why? questions to get to goals and How? questions to get to supporting facts or options.



### **References**

Fransella, F. And Bannister, D. (1977) *A Manual for Repertory Grid Technique*. London: Academic Press

Kelly, G.A. (1955) *The Psychology of Personal Constructs*. New York: Norton