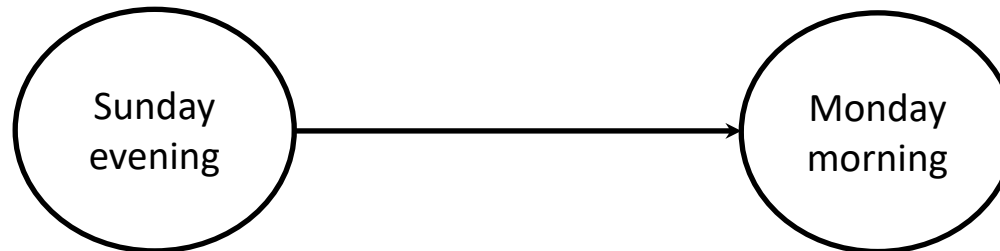


# How to construct individual case formulations (ICFs) based on functional analysis

# Elements of formulation diagrams in ICF: Causality and contingency

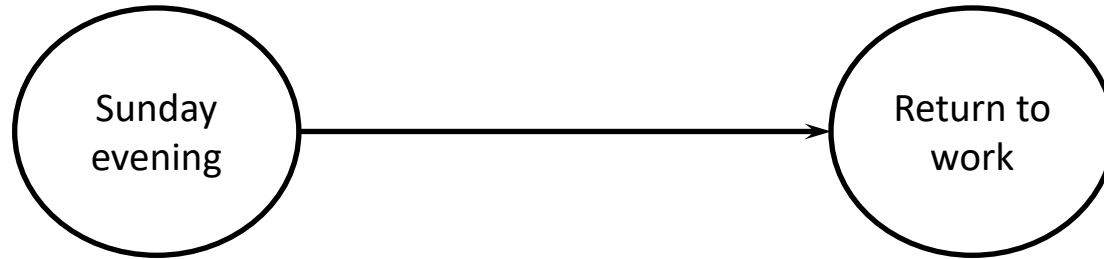
Causality is a function of the relationship between two or more events in space and time, where one or more events will follow if the first occurs. In ICF diagrams, causality is represented by an arrow.



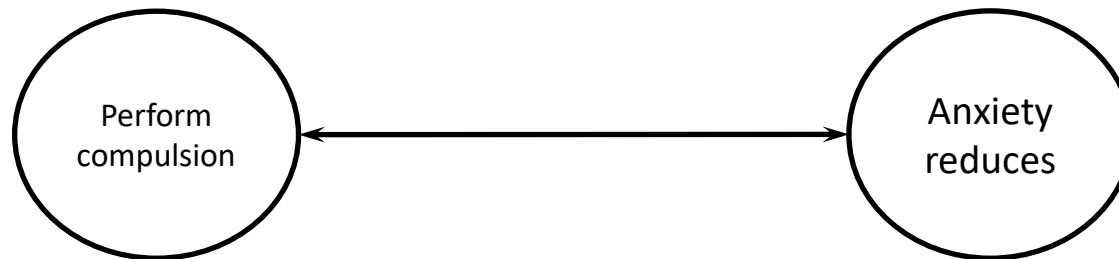
# Diagramming Causality and Contingency

When a person anticipates a causal relationship between events, we can say that this contingency has been learned.

Whether adaptive:



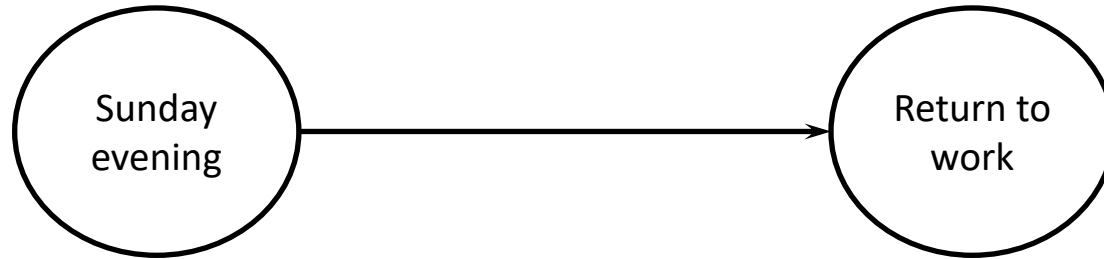
Or maladaptive:



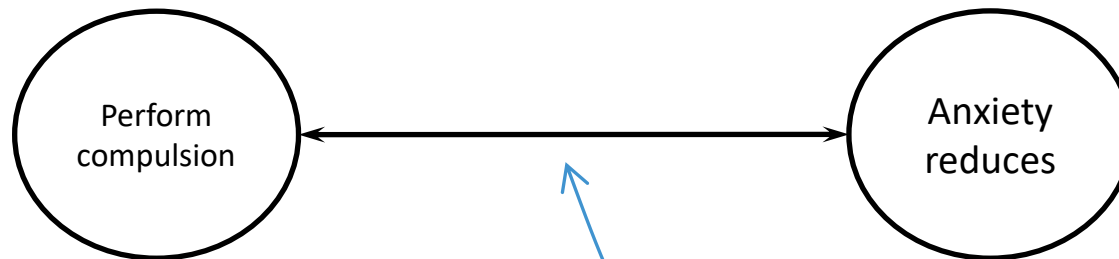
# Diagramming Causality and Contingency

When a person anticipates a causal relationship between events, we can say that this contingency has been learned.

Whether adaptive:



Or maladaptive:

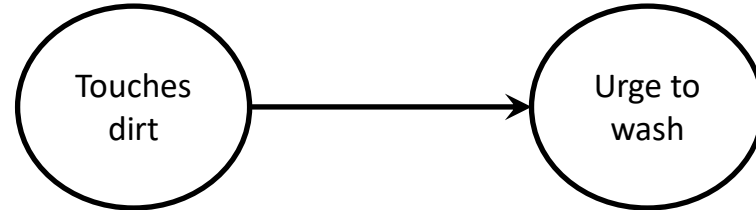


*Note the double-headed arrow, representing a reciprocal relationship*

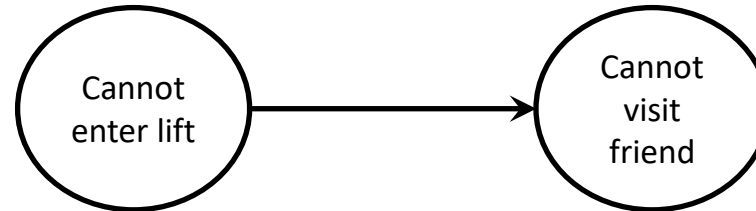
# Representing problems

Problems are represented in terms of the content of the contingent relationship

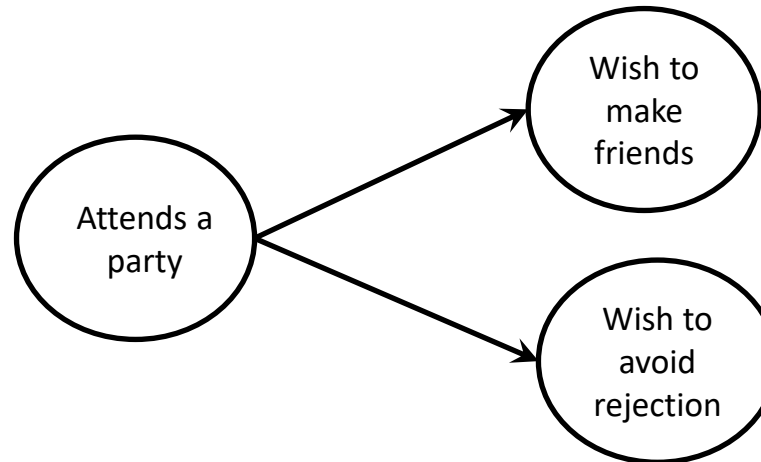
*Undesired response*



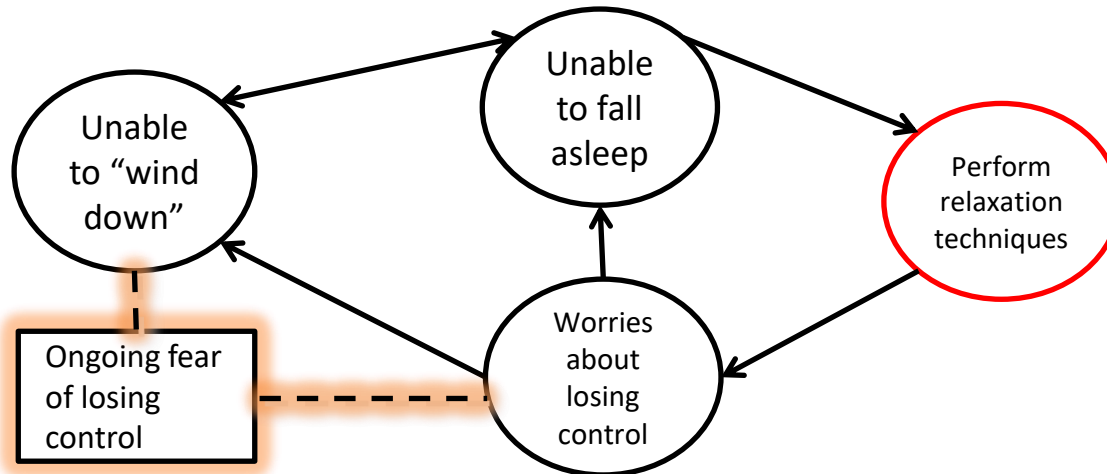
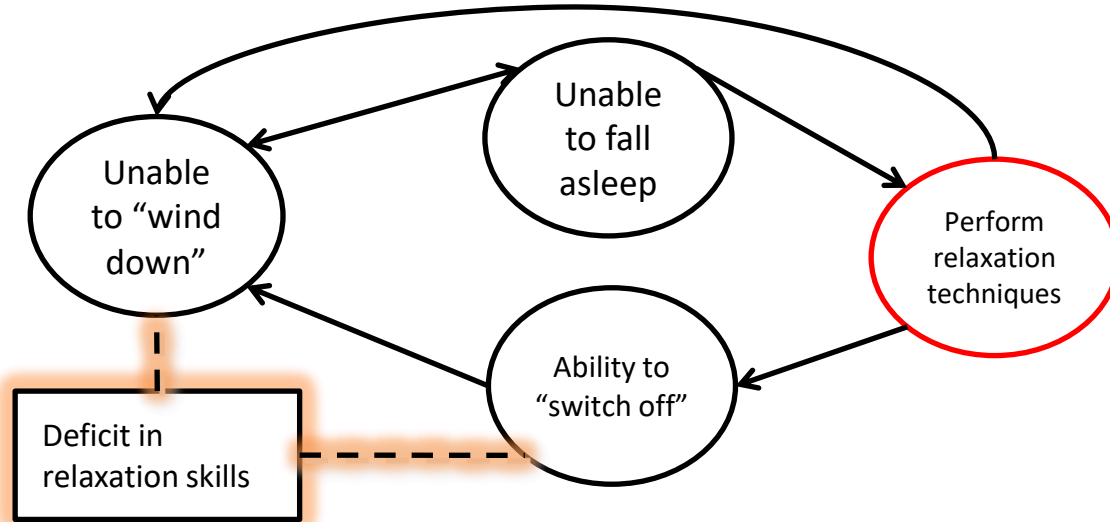
*Absence of desired response*



*Conflicting responses*

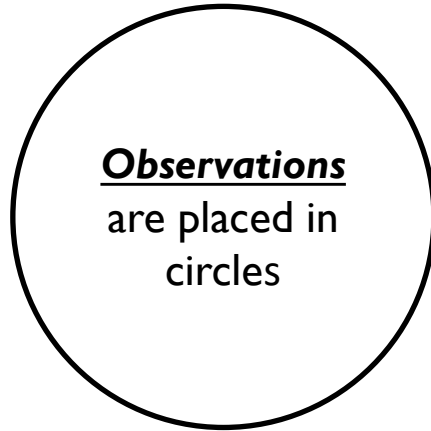


Note the elements in the diagram outlined in orange —how do they differ from the other elements?



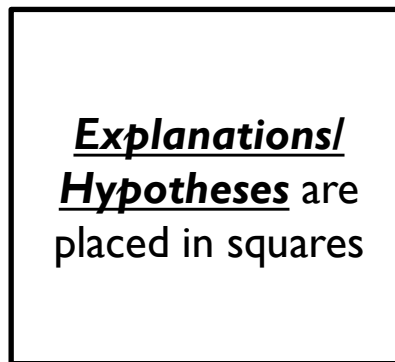
# Distinguishing observations from explanations/ hypotheses within the ICF approach

## *Symbolic conventions*



Including:

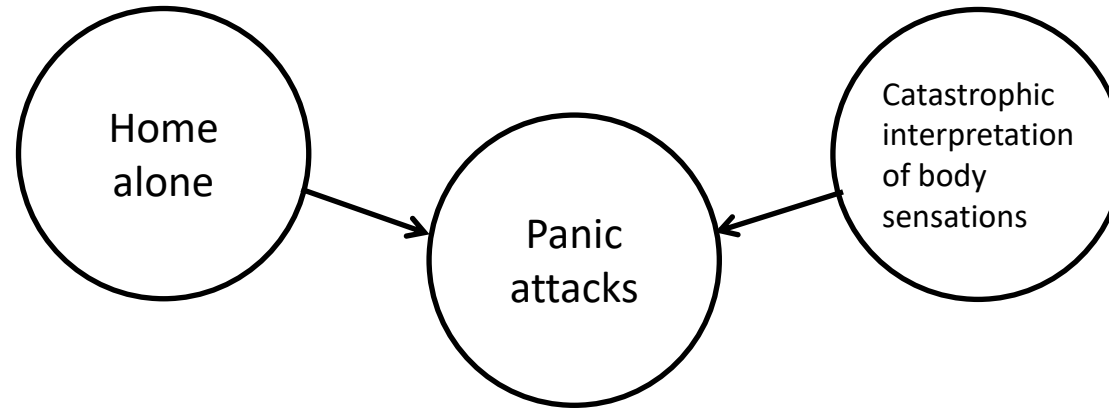
- Environmental events
- Thoughts
- Behaviours
- Emotions
- etc.



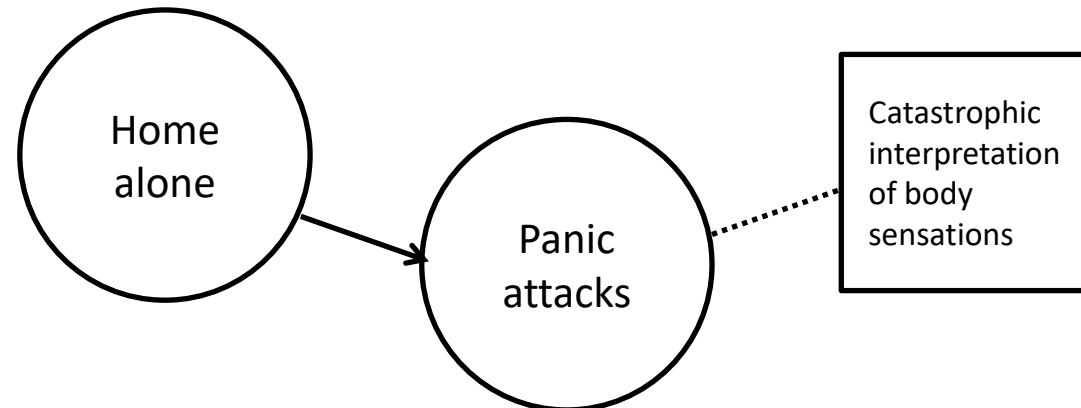
- Proposed ways of *explaining* the causal relationships between observations including:
  - Theoretical conjectures
  - Hunches
  - Cultural assumptions
  - etc.

# Distinguishing observations from hypotheses

**Incorrect:** Hypotheses and observations not distinguished

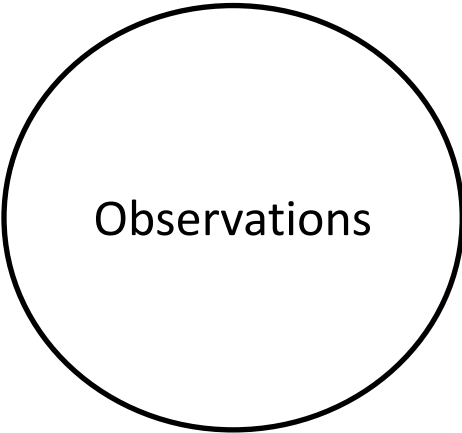



**Correct:** Hypotheses and observations are distinguished symbolically, clarifying that hypotheses are *explanatory* and not *causal*





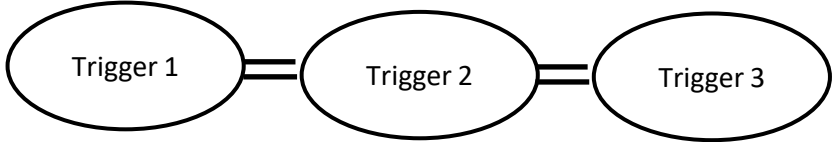
# Further guidance on formulation quality for observations, explanations, and inter-relationships between elements

	Promote	Avoid
 <p>Observations</p>	<ul style="list-style-type: none"> <li>• Described in sufficient detail</li> <li>• Confined to what is objectively observable</li> <li>• Relative position in diagram depicts real world relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Vague and subjective descriptions</li> <li>• Over-reliant on inference or based on supposition</li> <li>• Placed in diagram arbitrarily</li> </ul>
 <p>Arrows</p>	<ul style="list-style-type: none"> <li>• Clearly indicate how observations inter-relate and how they follow from each other in real life</li> <li>• Are confined to contingent relationships between observations.</li> </ul>	<ul style="list-style-type: none"> <li>• Nature of relationships depicted is not clear-cut or relationship is vague (e.g., observations share a common theme rather than a causal relationship).</li> <li>• Are used to depict explanations</li> </ul>

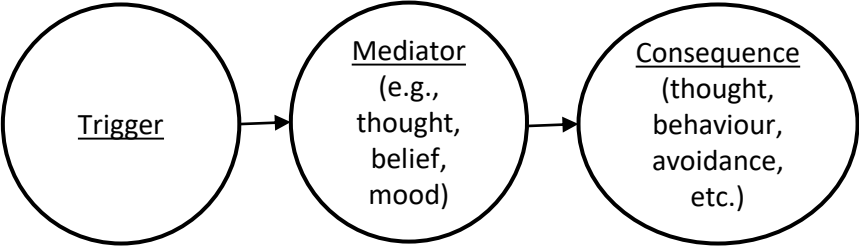
# Further guidance on formulation quality with regard to observations, explanations, and inter-relationships between elements (continued)

	Promote	Avoid
<div data-bbox="351 486 766 832" style="border: 1px solid black; padding: 10px; text-align: center;"><p><b>Explanations</b> (including hypotheses and theories)</p></div>	<ul style="list-style-type: none"><li>• There is a balance between description and explanation</li> <li>• The basis for relating explanations to particular observations is sensible and clear.</li></ul>	<ul style="list-style-type: none"><li>• Explanations are lacking and there is no basis for synthesizing the pattern of relationships among observations –<i>or</i>– there is too much explanation without sufficient underlying objective observations.</li> <li>• Relationship of explanations to observations seems arbitrary or vague</li></ul>

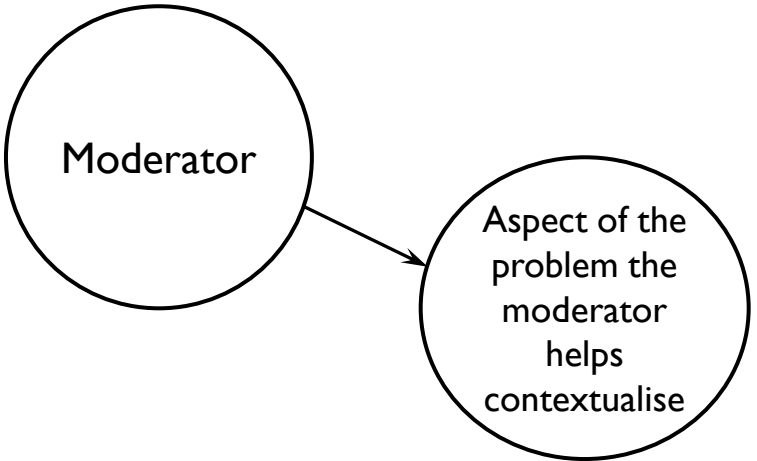
# Further guidance on formulation quality regarding functional equivalence

	Promote	Avoid
 <p>The diagram consists of three ovals arranged horizontally. The first oval on the left is labeled 'Trigger 1', the middle one 'Trigger 2', and the one on the right 'Trigger 3'. Each oval is connected to the next by a double horizontal line, suggesting a sequence or relationship between the triggers.</p>	<ul style="list-style-type: none"><li>• Ensuring basis of functional equivalence is justifiable and convincing</li><li>• Identification of functional equivalence provides context for the problem and the pattern of circumstances in which it occurs that would not otherwise be apparent</li></ul>	<ul style="list-style-type: none"><li>• Arbitrarily linking stray observations that you are unsure of where to place</li><li>• Functional equivalence between observations that may be true on a basic level but does not enhance explanatory power.</li></ul>

# Further guidance on formulation quality regarding mediators

	Promote	Avoid
 <pre>graph LR; Trigger((Trigger)) --&gt; Mediator((Mediator (e.g., thought, belief, mood))); Mediator --&gt; Consequence((Consequence (thought, behaviour, avoidance, etc.)));</pre>	<ul style="list-style-type: none"><li>• The role of the mediator in linking two or more other observations is clear and sensible.</li><li>• Mediators are meaningfully situated within the diagram in a manner that makes their role clear.</li></ul>	<ul style="list-style-type: none"><li>• It is not clear how the mediator meaningfully links indirectly related observations into a coherent causal sequence.</li><li>• Arbitrarily placing the mediator in the diagram so that its role is not clearly conveyed.</li></ul>

# Further guidance on formulation quality regarding moderators

	Promote	Avoid
 <p>The diagram consists of two circles. The left circle is labeled 'Moderator'. An arrow points from the right side of this circle to the left side of a second circle. Inside the second circle, the text reads: 'Aspect of the problem the moderator helps contextualise'.</p>	<ul style="list-style-type: none"><li>• Nature of moderator is clear and relates to time, place, others present or absent, emotional state, historical event, etc.</li><li>• Moderators provide context for what form the problem takes and when it occurs by contributing to a comprehensive contextual picture of the problem.</li></ul>	<ul style="list-style-type: none"><li>• Inclusion of moderator and its relationship to the observation to which it relates seems arbitrary.</li><li>• Included moderators taken together do not provide useful context for understanding when the problem is likely to occur and what form it can take.</li></ul>

# Suggested strategy for creating an ICF diagram

1. Run through the text, identifying potential elements that need to go into the diagram. Elements requiring little or no inference are represented in circles or ovals.
2. Identify elements that are functionally equivalent—e.g., elements that are either (a) all capable of evoking the main problem or (b) how the person responds/tries to cope when the problem arises. Group functionally equivalent elements together, linked by double non-headed lines.
3. Consider what the antecedents are of observed elements (behaviours, unpleasant emotions, thoughts, etc.) or groups of elements (where these are functionally equivalent). Link antecedents to corresponding behaviours with a single headed arrow where the direction of causality is one-way or with a two-headed arrow where the causality is reciprocal.

(continued on next slide)

# **Suggested strategy for creating an ICF diagram (continued)**

4. Consider what the consequences are of observed elements or groups of elements (where functionally equivalent). Link triggering elements to their consequences.
5. Consider what could possibly explain the relationships among the observed elements. Place possible explanations in squares/rectangles and link these to the relevant observed elements with dashed un-headed lines.
6. Refer to the quality pointers on the next set of slides (most of these appeared in previous slides under specific topics). Tweak and modify your diagram to better represent the problem and to better serve as a basis for intervening.

# Maximising the quality of your formulation diagram

	Promote	Avoid
Observations	<ul style="list-style-type: none"><li>• Described in sufficient detail</li><li>• Confined to what is objectively observable</li><li>• Relative position in diagram depicts real world relationships</li></ul>	<ul style="list-style-type: none"><li>• Vague and subjective descriptions</li><li>• Over-reliant on inference or based on supposition</li><li>• Placed in diagram arbitrarily</li></ul>
Arrows	<ul style="list-style-type: none"><li>• Clearly indicate how observations inter-relate and how they follow from each other in real life</li><li>• Are confined to contingent relationships between observations.</li></ul>	<ul style="list-style-type: none"><li>• Nature of relationships depicted is not clear-cut or relationship is vague (e.g., observations share a common theme rather than a causal relationship).</li><li>• Are used to depict explanations</li></ul>



# Maximising the quality of your formulation diagram (continued)

	Promote	Avoid
Explanations	<ul style="list-style-type: none"><li>• There is a balance between description and explanation</li><li>• The basis for relating explanations to particular observations is sensible and clear.</li></ul>	<ul style="list-style-type: none"><li>• Explanations are lacking and there is no basis for synthesizing the pattern of relationships among observations –or– there is too much explanation without sufficient underlying objective observations.</li><li>• Relationship of explanations to observations seems arbitrary or vague</li></ul>

(continued on next slide)

# Maximising the quality of your formulation diagram (continued)

	Promote	Avoid
Functional equivalence	<ul style="list-style-type: none"><li>• Ensuring basis of functional equivalence is justifiable and convincing</li><li>• Identification of functional equivalence provides context for the problem and the pattern of circumstances in which it occurs that would not otherwise be apparent</li></ul>	<ul style="list-style-type: none"><li>• Arbitrarily linking stray observations that you are unsure of where to place</li><li>• Functional equivalence between observations that may be true on a basic level but does not enhance explanatory power.</li></ul>

(continued on next slide)

# Maximising the quality of your formulation diagram (continued)

	Promote	Avoid
Mediators	<ul style="list-style-type: none"><li>• The role of the mediator in linking two or more other observations is clear and sensible.</li><li>• Mediators are meaningfully situated within the diagram in a manner that makes their role clear.</li></ul>	<ul style="list-style-type: none"><li>• It is not clear how the mediator meaningfully links indirectly related observations into a coherent causal sequence.</li><li>• Arbitrarily placing the mediator in the diagram so that its role is not obvious.</li></ul>

(continued on next slide)

# Maximising the quality of your formulation diagram (continued)

	Promote	Avoid
Moderators	<ul style="list-style-type: none"><li>• Nature of moderator is clear and relates to time, place, others present or absent, emotional state, historical event, etc.</li><li>• Moderators provide context for what form the problem takes and when it occurs by contributing to a comprehensive contextual picture of the problem.</li></ul>	<ul style="list-style-type: none"><li>• Inclusion of moderator and its relationship to the observation to which it relates seems arbitrary</li><li>• Included moderators taken together do not provide useful context for understanding when the problem is likely to occur and what form it can take.</li></ul>

(continued on next slide)

# Maximising the quality of your formulation diagram (continued)

	Promote	Avoid
Overall	<ul style="list-style-type: none"><li>The formulation is a coherent and comprehensive account of the available information. The diagram integrates and structures the information to draw together all the factors comprising and influencing the problem and portrays their patterns of interaction.</li></ul>	<ul style="list-style-type: none"><li>A substantial portion of the information in the diagram seems to be fragmentary or aggregated arbitrarily, lacking a coherent structure that integrates observations into patterns of interaction.</li></ul>