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Existing visualization design and evaluation frameworks rest on a distinction between the designer and the user. However, there is little explicit guidance on design, analysis and evaluation when the designer is the user. A simple solution to this problem is for the researcher (who combines the designer and user roles) to be clear about which activity they are conducting at which point in time. To support the researcher, we propose a design, analysis and evaluation model. This model complements existing visualization design and evaluation frameworks. We have adopted this model in our ongoing research into uncertainty in crowdsourced crisis information.

We situate scenarios, features and justifications within a cyclical action research process of hypothesising (designing), planning action, taking action, evaluating action and specifying learning. We begin a research cycle by hypothesising that is, we formulate working hypotheses (an analysis activity). We then plan action, where we write a scenario and identify, and justify, features (design activities). We also formulate a development plan. We then take action, where we develop a design and document design decisions (design activities), and undertake analysis and document findings (analysis activities). Finally we evaluate action and specify learning (an evaluation activity). We write a research report where we reflect on the research cycle.