Faculty of Design

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Systems Works: Building capability to think in systems by understanding daily problems

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SYSTEMS WORKS

Building capability to think in systems by understanding everyday problems

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As design practice has expanded into complex, interconnected problems (Buchanan, 1992), termed Wicked Problems by Horst & Rittel (1973); new ways of seeing may be required to address complexity. Systems Thinking is one methodology to approach this, working to understand the elements and the relationships between them.

However, many resources that exist to explain Systems Thinking are highly theoretical, academic or lack application to a commonly understood problem. Due to this, Systems Thinking as a methodology may prove inaccessible for a layperson to develop their own ability to think in Systems; and therefore may be unable to understand how to effect change on a Wicked Problem.

This project aims to reduce complexity by focusing on a localised context, in daily problems we all face; such as how to get a good night's sleep. This example has been utilised as we are all citizen designers in this respect, and would be able to identify elements that potentially affect our sleep quality individually; and from there identify past, present and/or future systems interventions to positively impact our sleep quality.

By paring back this complexity to an individual challenge, we can reflect on our systemic design practice outside of existing methodology, also allowing those new to systemic practice to develop understanding of concepts such as causality, and understand the consequences of their action in a localised setting.

In understanding causality and consequence of our actions, we can also further develop understanding through reflexive loops (Richmond, 2018) and move up the Ladder of Inference, as proposed by Argyris (1990).

This workshop will employ both individual reflection and a group reflection to explore our own relation to sleep and its quality, and in doing so demonstrate the overlap between our own individual circumstances; allowing us to develop a cumulative perspective that may help envision possibilities outside of our own perspective and/or bias(es).

KEYWORDS: systems thinking, systemic design, wicked problems

RSD TOPIC(S): Health & Well-Being, Methods & Methodology, Sociotechnical Systems

Expanded Description

Overview

This workshop will introduce the concept of 'daily problems' with sleep centred as the case study to develop understanding of systems thinking and its associated terminology, methods and tools.

In order to maximise accessibility to the topic, these terminology will be introduced at the during the workshop introduction, learning how to portray elements and the relationships between through Causal Loop Diagrams on the fly.

Remote collaboration software, i.e. Miro/Figjam will be utilised to enable remote collaboration with a diverse range of participants, as well as video conferencing software to increase engagement.

Upon competition of System Mapping activity, participants will be asked to devise solutions to factors negatively impacting their sleep quality, and a group discussion will be facilitated to reflect on other's responses: particularly similarity in responses and differing perspectives taken, to highlight the individualised approach as one to develop a group's capability to think in systems.

Activity Structure/Outline

Duration	Activity
3 mins	Introduction & Housekeeping
7 mins	Workshop Overview & Key Concepts (Reflexivity, Causality, Elements, Relations)
5 mins	Demonstration: Factors affecting sleep, cause as effect/effect as cause, relations/flows
15 mins	Individual Reflection: Factors affecting sleep quality, creating system maps
10 mins	Grouping categories into themes/insight groups
5 mins	Demonstration: Understanding systems interventions
15 mins	Individual Reflection: Possible Systems Interventions
15 mins	Group Reflection: Bringing it all together (Zooming out to acknowledge other's works^
10 mins	Wrapping up: Words on Reflexivity and how to zoom out to develop understanding
5 mins	Post-Workshop Survey

^ Steps will be undertaken to ensure anonymity of participant's responses

Participant Activity: Example of Responses

Examples of previous responses can be seen in the below section, detailing individual responses (Fig 1.1 & Fig 1.2.), as well as the cumulative data from a series of 8 participants. Upon completion of this activity, a System Map of all the participants responses will be collated to visualise the data.
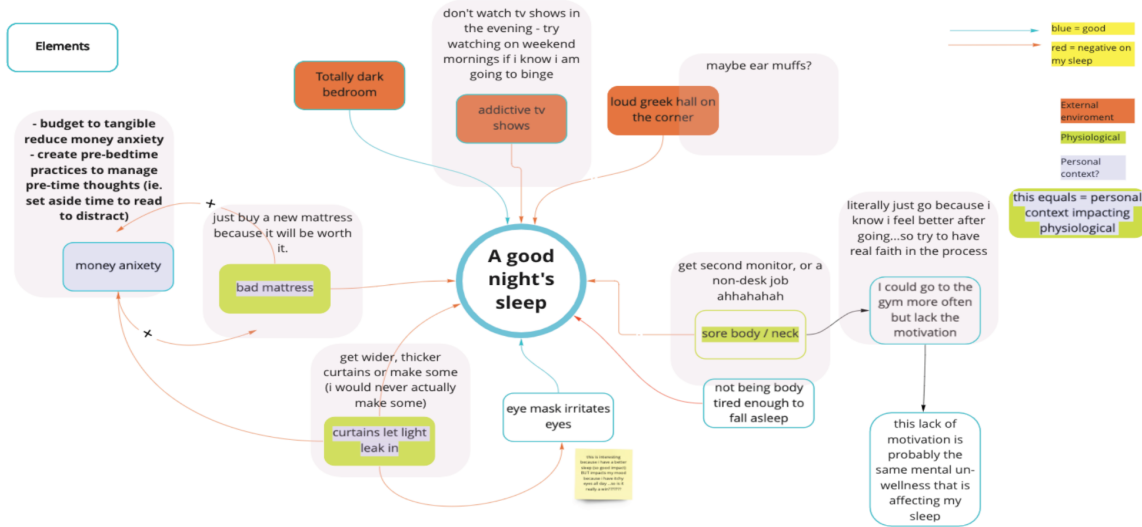
Figure 1.1. – Individual Response #1: System Map and System Interventions for improving sleep quality
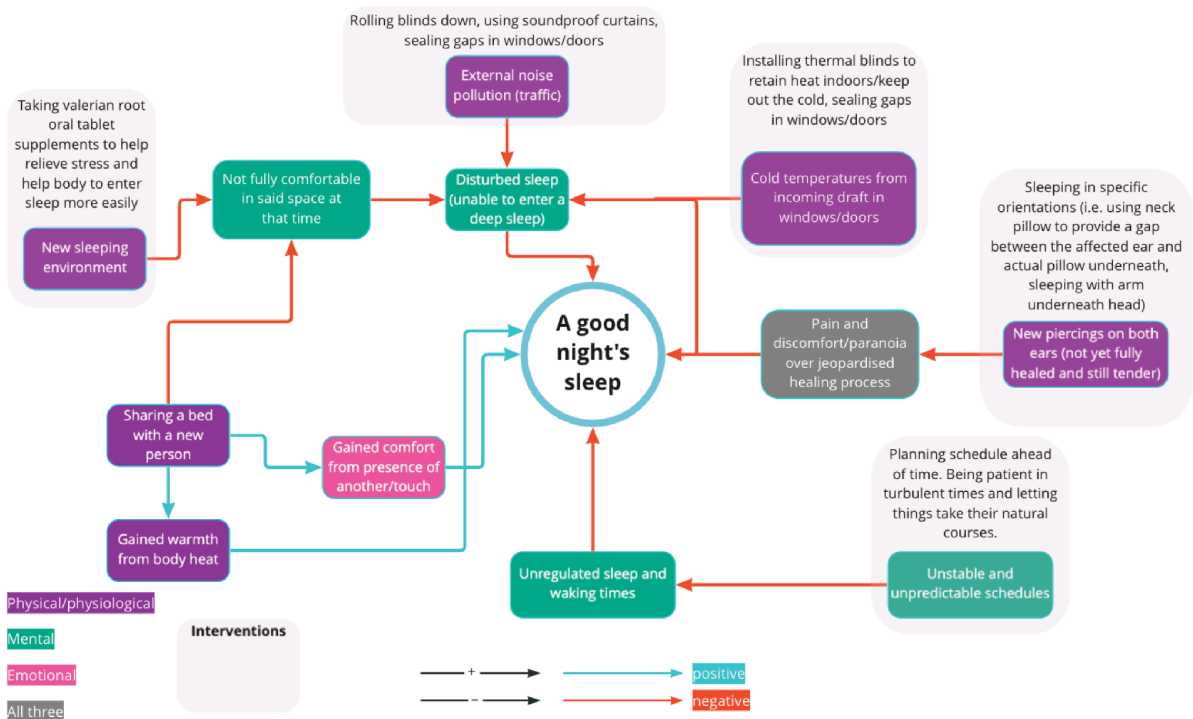
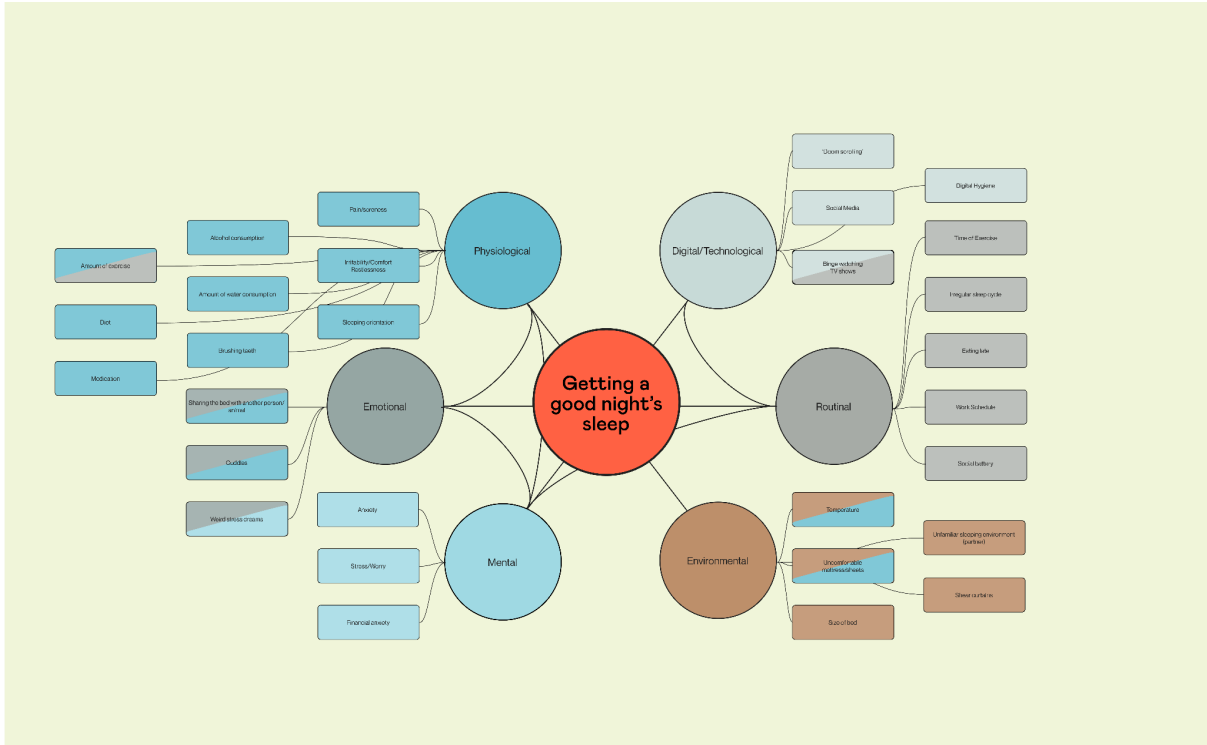*Figure 1.2. – Individual Response #2: System Map and System Interventions for improving sleep quality*

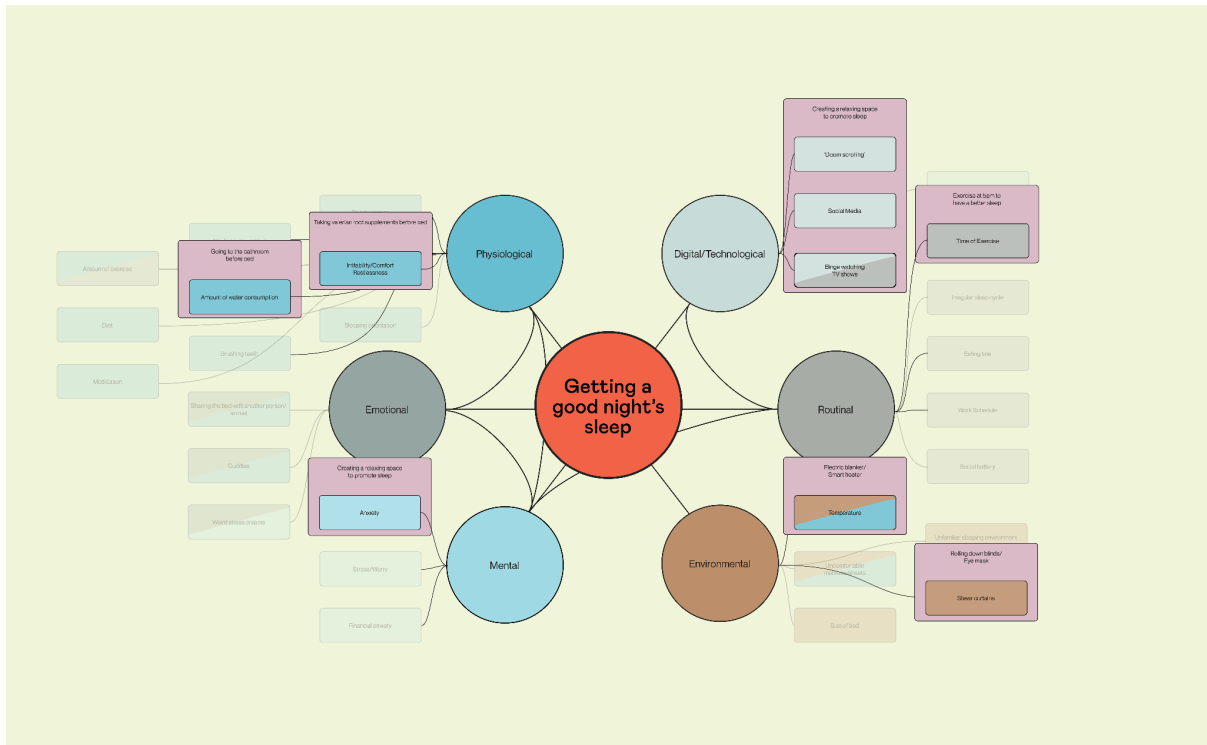*Figure 1.3. – Cumulative System Map of factors affecting sleep quality*

Figure 1.4. – Cumulative System Map of system interventions to improve sleep quality

References

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Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. Policy sciences, 4(2), 155-169.