Appendix A

Supplementary Results for Chapter 5

A.1 Neural Oscillator

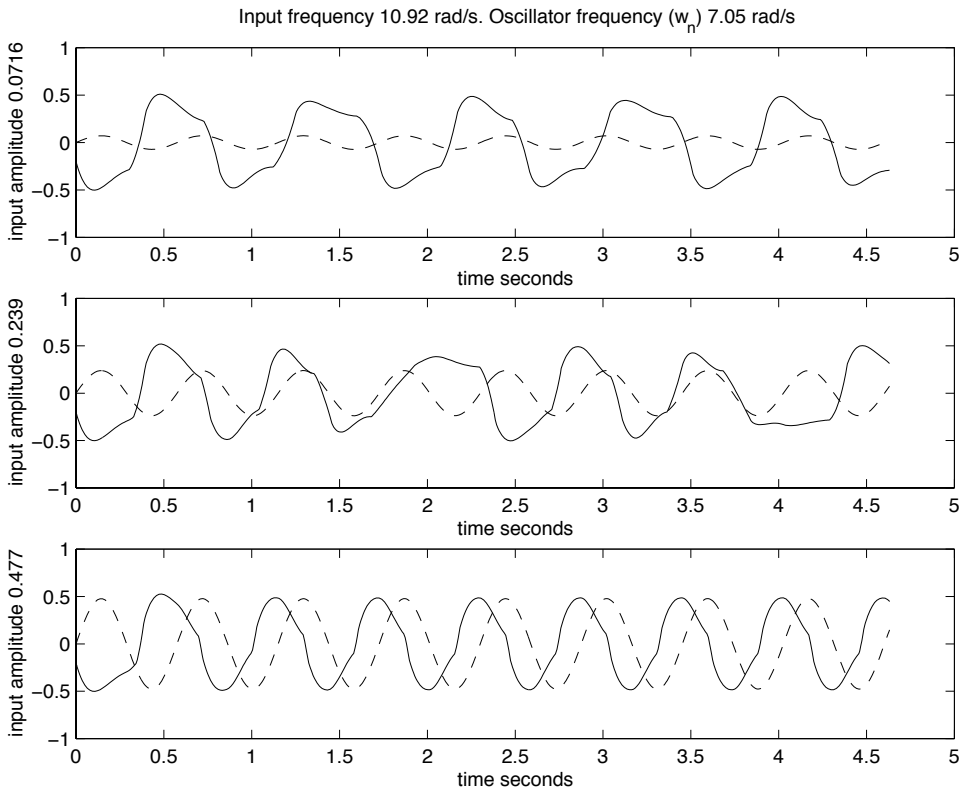

Figure A.1: Plots showing the output of a neural oscillator pair and sinusoidal input signal for varying amplitudes of input. (from Williamson(2002))

When the amplitude of the input signal is small (top), the oscillator is not entrained but oscillates at its endogenous frequency. As the input is increased the oscillator is almost entrained but slips every few cycles. For larger input amplitudes, the oscillator locks to the input frequency (bottom).

A.2 Self-regulating homeostat

The following results suggest that the modifications made to the basic homeostat did not disrput its essential characteristics. As shown in Figure A.2, the system returns to the same stable state after minor perturbation (marked **a** at iterations 250 and 525), and re-stabilises following critical perturbation (arked **A** at iteration 350). As we would expect, the increase in size means that the network takes longer to stabilise.

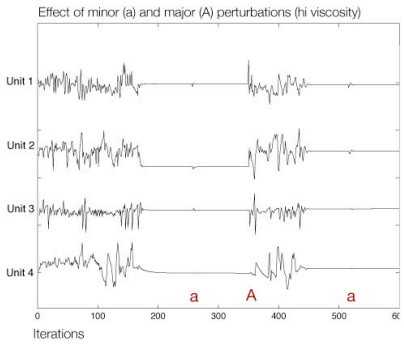

Figure A.2: Outputs of a ten-unit self-regulated homeostatic network demonstrating stability to minor perturbation and re-stability after critical interference.

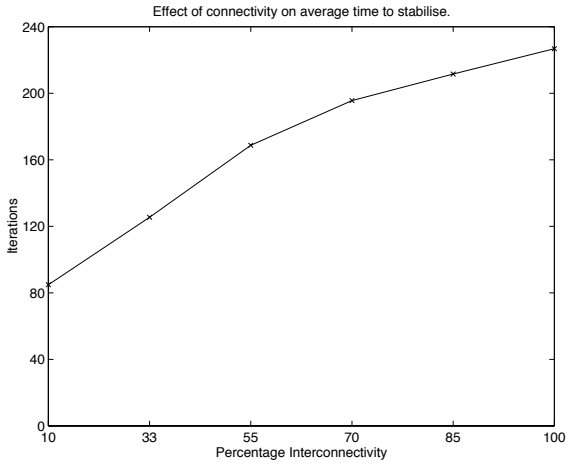

Figure A.3: Change in stability as a function of interconnectivity for an auto-regulated network

Figure A.3 shows the increase in the average time to stabilise with an increase in percentage connectivity for an auto-regulated network. The inverse relationship between connectivity and stability observed in the standard homeostat is preserved. Here connectivity refers to the degree of *interconnectivity*, each module being fully *intra*connected.

Appendix B

Technical set up for installations and performances

B.1 Set up for Ashby's Grandmother's Footsteps

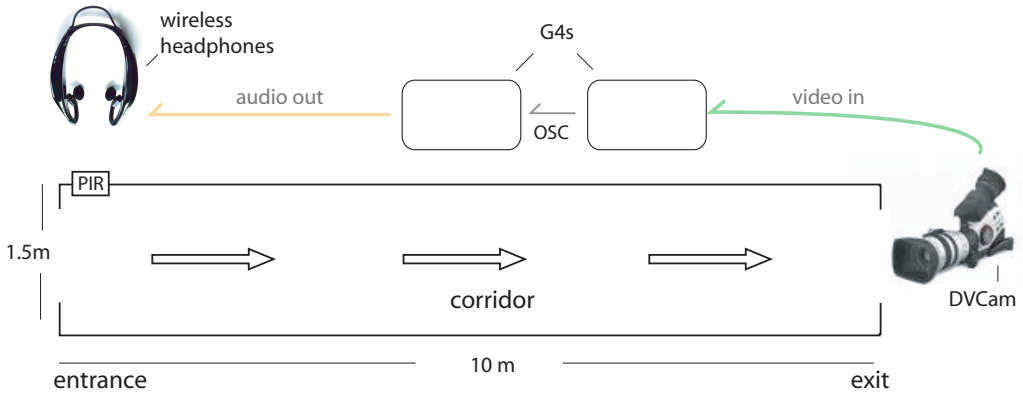

Figure B.1: Set up for Ashby's Grandmothers Footsteps installation

B.2 Technical Set up for Self-karaoke in installation and performance

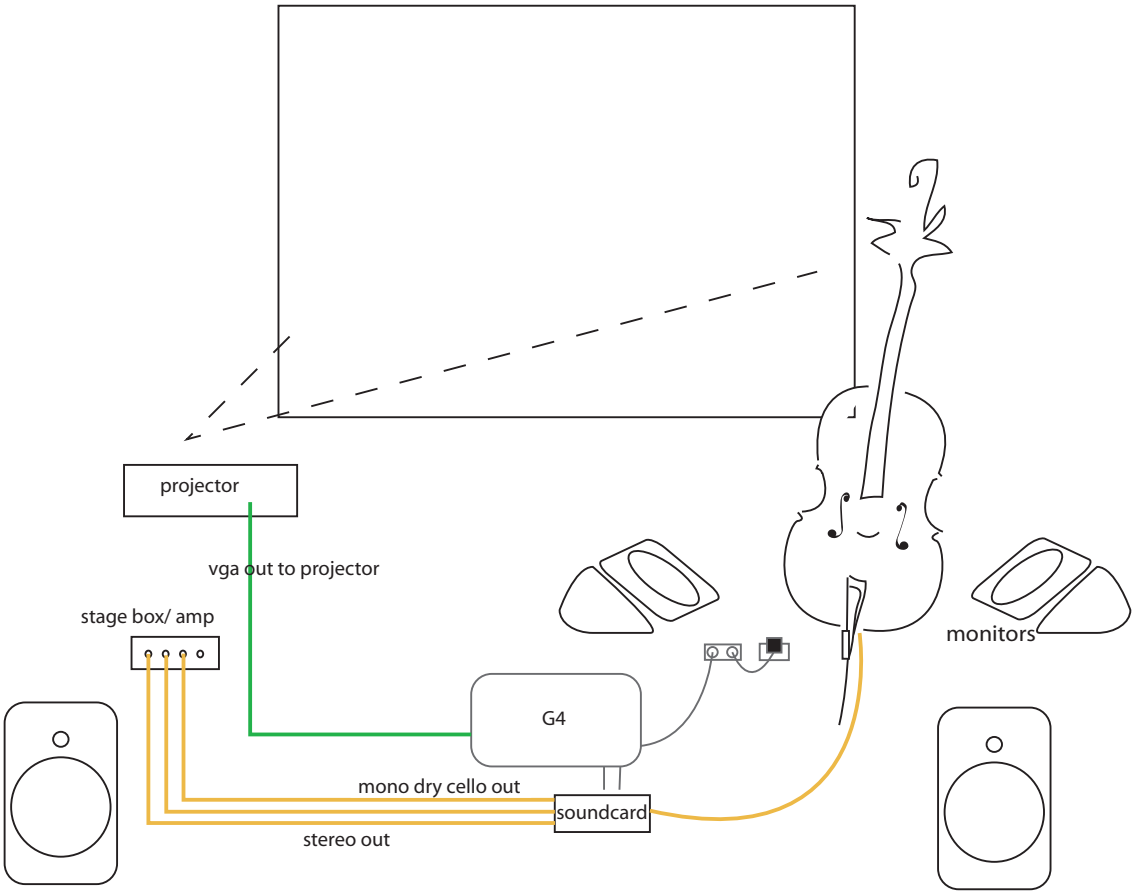

Figure B.2: Set up for Fond Punctions Performances

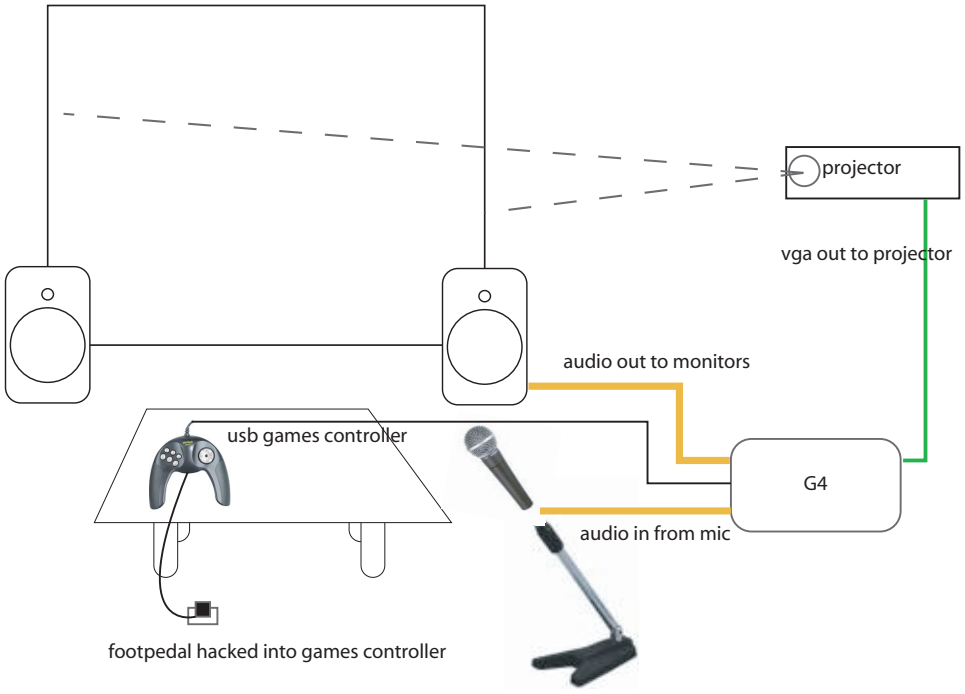

Figure B.3: Set up for Self-karaoke Pond in installation