Propositions

1. Inhibitory inputs from the cerebellar nuclei can reset the phase of the sinusoidal oscillations of olivary neurons (this thesis).
2. Different oscillatory profiles result in different responsiveness to GABAergic activation (this thesis).
3. Gap Junctions between olivary neurons are modifiable entities that can be down-regulated by intracellular pathways involving PKA and CaMKII (this thesis).
4. The amplitude of SSTO is one of the factors that modulate the output of IO neurons (this thesis).
5. Olivary neurons can potentially show phase-modulation of their burst size but only for limited range of oscillation amplitudes (this thesis).
6. Olivary neurons show sinusoidal oscillations of their membrane potential, which phase can be reset both by excitatory and inhibitory activation of the IO neuron (Khosrovani et al 2007, this thesis).
7. Olivary neurons show two main different types of oscillations: Low-Threshold Oscillations (LTO) and Sinusoidal Sub-Threshold Oscillations (SSTO). This underlies two (or more) functionally distinct populations of neurons in the IO rather than different "states" of a unitary neuronal population (Unpublished observations).
8. Uncoupled olivary neurons can generate SSTOs with increased excitability at hyperpolarized states and different voltage sensitivity from the ones present in a coupled network. In line with this, the modulation of the size of the burst is more consistent in coupled than uncoupled neurons. (De Zeeuw et al. 2003, this thesis).
9. T-type calcium channels density determines the oscillation profile of olivary neurons and consequently affects the output modulation capability of IO neurons (Chorev 2006, this thesis).
10. Despite the hassle that the IO undergoes when extracted from its socket, frozen, sliced and exposed to any kind of mechanical shocks in order to perform *in vitro* electrophysiological experiments, it is still able to maintain -in complete accordance with the *in vivo* preparation- its capability of being enigmatic (30 years of literature, this thesis).
11. The "semicolon" (;) is a punctuation sign which importance in modern languages is still a matter of debate, however, its relevance appears clear as soon as you overlook one of them in a Matlab script (This thesis, data not shown).