

Chapter 11

Concluding Remarks

Experimental data from electroencephalogram (EEG) studies in financial decision-making, dilemma judgment, voting and media propaganda understanding were presented and discussed in Chapters 7–9, respectively. Some general properties of cerebral processing involved in decision-making arise from these data and discussions.

Analysis of Grand Average calculated for 2 s prior to decision-making revealed the presence of four EEG components or waves and labeled here W_1 – W_4 . Although the format of these components varied according to the type of experiment, their time window was almost invariant: W_1 occurring in general between $-1,900$ to $-1,400$ ms; W_2 occurring in general between $-1,350$ to $-1,000$ ms; W_3 occurring in general between $-1,000$ to -600 ms and W_4 occurring in general between -500 to 0 ms. It may be proposed that each of these components is associated to the following general tasks that are performed to build decision-making:

- (1) W_1 -Decision identification: for example, choice of stock in financial decision-making (Chapter 7); action in moral dilemma judgment (Chapter 8); vote type in thinking about fire arm control (Chapter 9) and argument understanding in media propaganda (Chapter 9);
- (2) W_2 - and W_3 -value, benefit and risk evaluations to calculate decision adequateness: for example, definition of quantity and price of stock to be traded; social and personal risk and benefit in moral dilemma judgment; social benefit and personal risk in vote decision, and coherence and veracity of media arguments;