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Shifting attention to a thought: electroencephalographic dynamics during a modified word generation task.

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Abstract: What happens if you are asked to come up with a word that includes the letters R, B and F in it? Does the answer pop up spontaneously? Or do you somehow actively orient yourself towards your thoughts, searching for a possible match? In other words: does voluntarily thinking about something involve first an attentional shift? Here we approach this question using electroencephalographic recordings in a modified word-generation task. Modulation of early visual event-related potentials to an attentional probe presented before subjects find the target word, indicates that thinking voluntarily about something requires a certain amount of withdrawal of attention from the immediate external context. Fronto-parietal activity during the initial phase of the task suggests that a supra-modal attentional network is involved when one voluntarily orients to a relevant aspect of experience, regardless of whether this is external, in the environment, or internal, in one's mental space.