

results are anonymized and randomized as much as possible for a small group (5 practitioners in age from 25 to 50 years with meditation experience ranged from 5 to 10 years) to remove bias.

III. EXPERIMENTS

An overview of all attempts and their parameters is given in Table I. Experiments in the phase 1a and 1b are fully reproducible in the selected group of meditators, we observe only a variation in intensity of temperature responses. We also observed a non-temperature response of surrounding electro-chemical sensors on presence of meditators in all cases, however, detecting the exact begin and end of exercises, as shown in Fig. 7, was possible only in several attempts. Since this topic represents the focus of other works [29], [33], [34], it was not pursued further here. Control measurements were carried out a) in parallel to experimental sessions on separate calorimeters (as non-targeted sensors); b) during so-called 'empty sessions' (meditators were present but no sessions were conducted), several examples of control attempts are shown in Figs. 10(a)-10(c).

Table I
PARAMETERS OF PERFORMED EXPERIMENTS, 'N OF SENSORS' – DIFFERENT SENSORS USED IN ONE ATTEMPT.

phase	N attempts	N sensors	N positive	description
1a	12	1	12	body temperature
1b	10	4	10	hand temperature
1c	7	5	–	surrounding objects
2	63	18(3x6)	57	external calorimeters
2	67	18(3x6)	11	control (most positive responses in non-targeted sensors)
			0.00012	Chi-square test, p value
			0.0008	U test, p value
total	159	independent experiments		
	2427	operator-sensor sessions		

A. The phase 1 experiments

1a. Body temperature effects have been measured with three methods (IR, skin surface, core temperature). The temperature data depends essentially on behavior of a meditator, even small changes in position (during a 2-3 hour experiment) disturb a thermodynamic equilibrium of the body and are reflected in an increasing or decreasing trend of t . Temperature dynamics depends on a fat content of tissues, clothing, room temperature and other factors that affect thermodynamic conditions. Therefore, experiments have been performed in a fixed position of a meditator, providing enough time for stabilizing body temperature before and after attempts. Fig. 5 demonstrates several experiments with raising or lowering body temperature through meditative visualization in ASC. We observe an almost immediate response of body temperature to the visualization, the area of persistent changes after the session is clearly visible; its duration is longer than the session itself. Inclination of

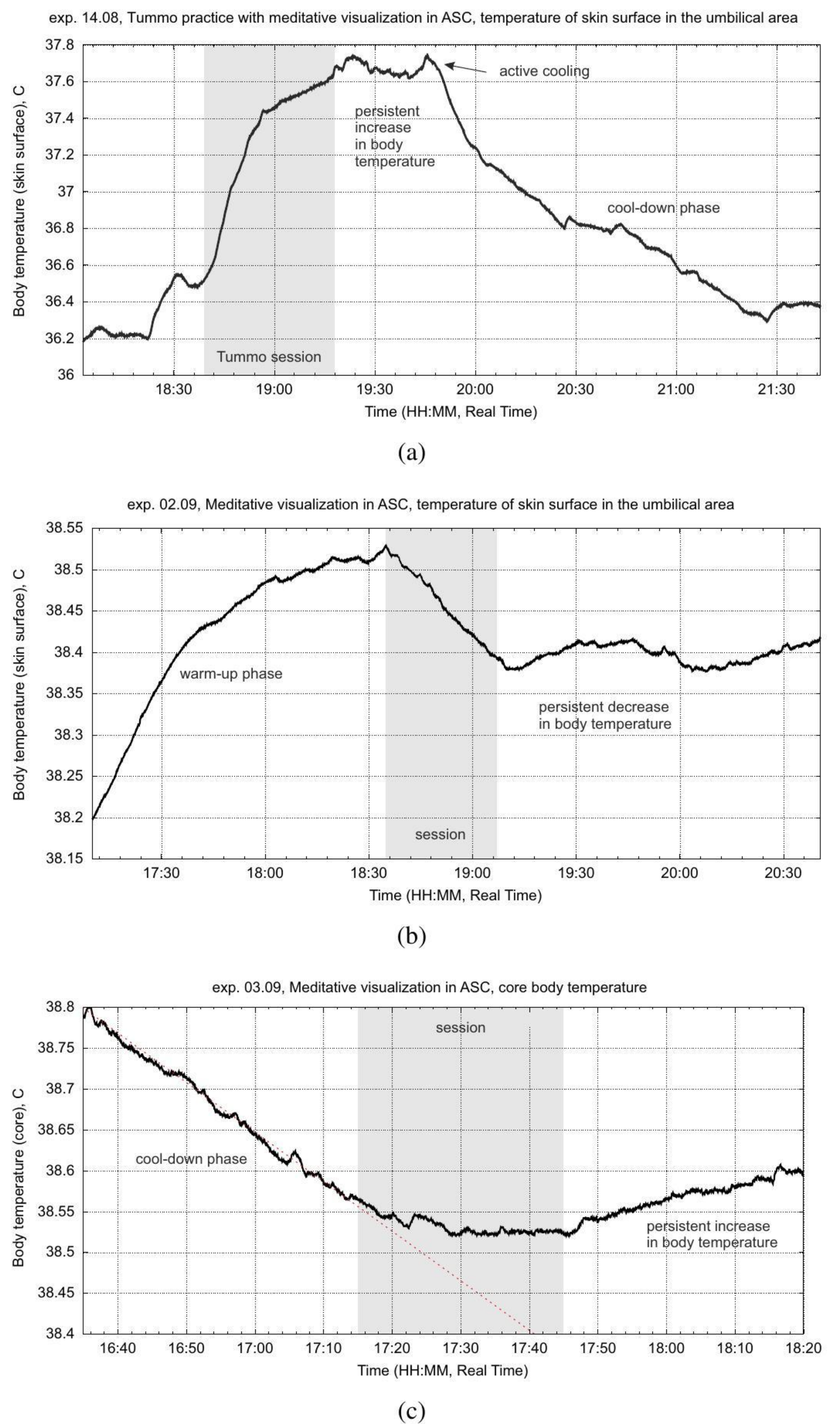


Figure 5. Examples of typical temperature effects for meditative visualization in ASC: (a) Tummo session with increasing the body temperature (measured by contact skin surface method in abdominal region near the navel); (b) Using meditative visualization for lowering body temperature (measured by contact skin surface method in abdominal region near the navel); (c) Variation of core temperature during meditative visualization without breathing exercises. Regions of persistent changes after the sessions is well visible in all cases.

temperature dynamics during the sessions is higher for regions of 'natural' warm-up and cool-down phases, this indicates their more intensive thermodynamic mechanisms. Experiments on lowering body temperature does not include breathing exercises.

1b. Additional attempts with heating up 15 ml water in small containers have been undertaken to measure the heat produced by hands if focusing attention on one of the hands. Each container has one t sensor immersed in the fluid and one t sensor measuring air temperature outside the container. Without attention, hands produce almost equal amount of heat that results in a stable differential temperature of water and air sensors. Focusing attention on one hand increases its skin