

# Where Is Your *Ego*? A Population Study over Males and Females Aged 5 to 68 Years Based on Anthropological Considerations

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## Abstract

Although the *Ego* (the *I*) is a non-local metaphor, people have no difficulty locating it in or near the body. A cohort of general population ( $n = 614$ ) aged 5 to 68 localized the *Ego* in the head in 58.6% of cases (in the brain in 17.6%, in or behind the eyes in 12%, in the mouth in 3.4%, in the ears in 1.8%, in the hair in 1.6% and in other minor locations), in the throat in 2.6%, in the chest in 32.2%, in the heart in 23.6% (not in adults aged  $> 19$  years), in the diaphragm (*φρένες*, phrenes) in 4.1%, in the abdomen in 10.7% (in the gastric area in 5.9%, in the intestine in 16.9%), in the upper limbs (especially the hands), in 14.3% in the lower limbs (especially the feet), with sporadic differences between males and females. Age and years of schooling were multivariate predictors of *Ego* location differently in males and females. The *Ego* was reported as multiple in 22.6% of cases, and the most frequent combinations were head + heart (7.5%), head + abdomen (2.6%), and head + limbs (3.7%), with differences by sex. Current *Ego* locations reflect the ancient mythical locations in the *interiora* (entrails). The modern tendency to place the *Ego* in the head, in the brain, and especially behind the eyes is a recent acquisition deriving from neuroscience and from architecture, and is uncommon in children (who are less educated), while it increases with age and schooling.

## Keywords

*Ego*, Epidemiology, Population, Questionnaire, Age, Education, Anthropology

## 1. Introduction

The *Ego* is merely a metaphor. According to Carl G. Jung, it is a complex that has

enjoyed particular success (Jung, 2015). It is a recursive construction based on explicit autobiographical memory, which is unique to *Homo sapiens* (Casiglia, 2020).

The *Ego* (or the *I*, i.e. the subjective consciousness, sometimes improperly named *Self*) is not a physical structure. It would therefore be absurd to try to locate it in a cerebral or extra-cerebral location. In reality, everyone can locate it wherever they prefer or where they feel it, and cannot be contradicted.

In the past, the *Ego* (a very recent complex) did not exist (Casiglia, 2020), and what then passed for *the psyche* was located in various places in the body (in the heart, liver, stomach, intestines, diaphragm, etc.), in those organs that the Latins later called *interiora* (entrails), a term from which the modern concept of *interiority* derived. The ancient Greeks gave the mind fanciful names like *θυμός* (*thumós*), *ἄνεμος* (*ánemos* = soul), *ψυχή* (*psyche*), *φρένες* (*phrénēs* = diaphragm) etc., but these terms referred to concrete things, such as things that left the body when mortally wounded. It's possible that this exit of the *θυμός* at death gave rise to the concept of a breath (*ἄνεμος* = soul in Greek; *spiritus* = spirit in Latin) that left the body at death, a concept we Westerners have accepted in its entirety (Jaynes, 1976). Christianity, with its doctrine of the resurrection of the body, recognized that to maintain an *ἄνεμος* in order to preserve the *Ego*, it was necessary to maintain one's body.

The *Ego in the head* is a very recent construction that is largely due to the development of the neurosciences and to architecture and its converging vanishing lines behind the eyes. The *Cyclops' eye vision* of Håring's projective geometry, located in the median plane of the Vieth-Müller circle has greatly influenced our vision of ourselves, moving the *Ego-center* into the head behind the eyes (Hochstein, 2018). For us in the 21<sup>st</sup> century, egoic consciousness generally appears self-centered, as if the observer were at the center of the universe or what we might call an *Ego-sphere* (Johnson et al., 2002).

Although the *Ego* is non-local, people, when asked about it, have no difficulty saying where they perceive it to be (Limanowski & Hecht, 2011).

## 2. Materials and Methods

614 informed-consent subjects recruited from the general Italian population were studied. With my staff, I have been involved since 30 years in epidemiological population-based studies, had already studied a large and representative sample of the Italian population also on a psychological point of view (Casiglia et al., 2002; Casiglia et al., 2005; Casiglia et al., 2013; Casiglia et al., 2017; Tikhonoff et al., 2015), and for the purpose of the present analysis extended the recruitment to age classes not previously studied such as childhood and adolescence. The study sample was chosen from this known population (which comprises tens of thousands of people) to exceed the 600 subjects suggested by a preliminary power analysis. Every effort was made to maintain the sample's representativeness, although the ages between 5 and 18 had previously been studied only marginally. In the study

described here, which is based on anthropological considerations, the presence of young subjects was necessary to distinguish between the innate and acquired tendency to perceive the ego in one particular location rather than another, which could be due to cultural conditioning. Hence the high number of young subjects. The final sample included 184 children (aged 5 - 12), 232 adolescents (aged 13 - 19), and 107 adults (aged 20 - 68). All were administered a test consisting of a sheet of paper bearing the image of a human being, depicted from the front and in profile (Limanowski & Hecht, 2011), devoid of obvious sexual characteristics and suitable for both males and females. The task was as follows: *With a pencil, indicate where you feel your Ego is located.* No further instructions were provided. In particular, the *Ego* was not defined a priori because 1) its definition is uncertain (Casiglia, 2020), 2) I did not want to influence the subjects by providing information that would in turn be conditioning, and 3) other researchers had already demonstrated years ago and published in the present journal that people are able to indicate their *Ego* without difficulty (Limanowski & Hecht, 2011).

The indications collected were analyzed using anatomotopographic criteria (Figure 1). The frequency of responses for the entire cohort and for the three age groups was analyzed by group, taking into account the confounding covariates of age, gender, and years of schooling. Receiver operating characteristics (ROC) curve analysis identified a plausible cutoff for each location, which was then considered only if accepted in a multivariate system adjusted for confounders.

When the *Ego* was positioned at more than one location, the most frequent aggregations were described for the entire cohort and for age groups, stratified and analyzed by sex. Attribution to each location was confirmed by individual LOGIT with the location as the dependent variable and the confounders as the independent variables, producing odds ratios (OR) of association.

In sensitivity analysis, the frequencies of the different locations were shown in relation to their respective cutoffs.

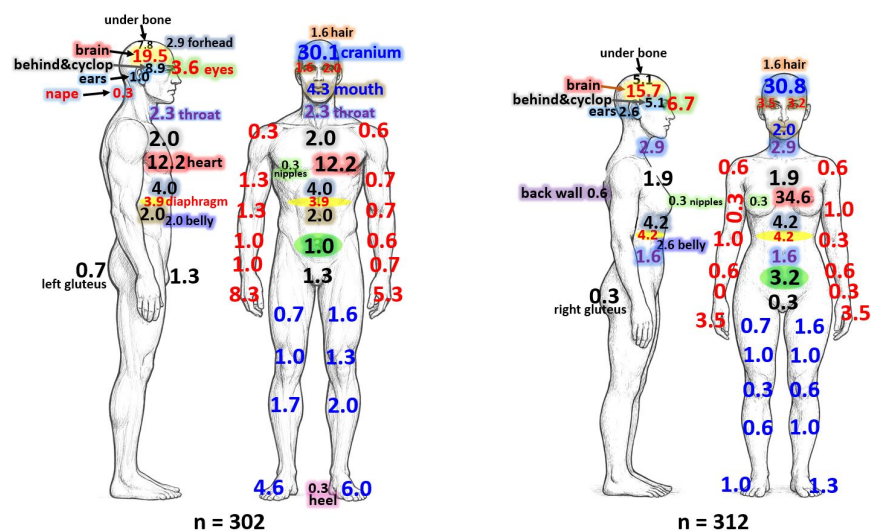
## 3. Results

### 3.1. Descriptive Statistics and Univariate Analysis

#### Single Localizations

**1) All subjects combined (Table 1 and Figure 1).** Of the 614 participants, 320 felt their *Ego* in their head; of these, 40 were in the entire head, 187 in the skull behind the forehead (108 of which were in the brain), 8 on the face (1.3%), and 19 on the superficial forehead (3.1%). Thirty-two subjects placed it in their eyes, 21 behind the eyes inside the skull, 2 in the *cyclops eye* position, and 2 in both ears. Regarding the localization in the neck, it was located in 16 cases in the throat and in 1 case in the nape of the neck. One hundred and forty-five subjects felt the *Ego* in the heart (or 173 in the heart including the precordium), 3 in a hypothetical right heart, 12 in the extra-cardiac thorax (mediastinum), 1 deep in the lungs, 2 in the nipples, and 2 in the muscular wall of the back. Twenty-five felt it in the diaphragm, 66 (10.7%) in the abdomen (of which 14 in the precisely indicated

navel, 25 in the epigastrium, 11 in the hypogastrium, 13 in the intestine, 2 in the spleen, and 2 in the anterior muscular wall); 5 placed it in the pubic area. One hundred and forty-one felt it in the limbs (104 in the upper limbs and 37 in the lower limbs). Among the limbs, the hands ( $n = 63$ ), the feet ( $n = 40$ ) and the elbows ( $n = 10$ ) were the most frequently indicated localizations. Only 2 subjects placed the *Ego* outside the body (in one case with autoscopic vision). A halo was sometimes referred to the entire body ( $n = 11$ ) (Figure 2) or to a part of it such as the head ( $n = 55$ ), chest ( $n = 8$ ), abdomen ( $n = 6$ ), and limbs ( $n = 6$ ). The halo was an integral part of the *Ego* or was the *Ego*. Thirteen subjects (7 males aged  $21.3 \pm 16.1$  years with  $10.3 \pm 3.2$  years of schooling and 6 females aged  $25.2 \pm 22.4$  years with  $9.5 \pm 7.2$  years of schooling) returned a blank questionnaire, while 3 (1 male aged 57 with 24 years of schooling and 2 females aged 57 and 59 years with 24 years of schooling) stated not to know where their *Ego* was. The sum is greater than the number of participants because several subjects identified multiple localizations. The detailed percentage of these localizations by side and gender is reported in Table 1.

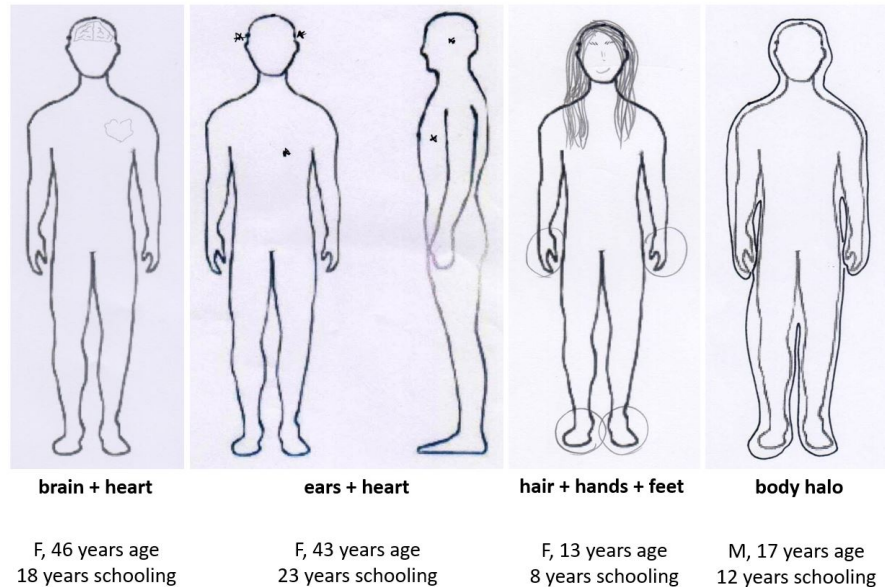


**Figure 1.** Main self-attributions of the *Ego* in 614 males and females aged 5 - 68 years. See Table 1 for further details. The percent frequencies of each attribution are shown (% by sex).

**2) Childhood subjects.** Between the ages of 5 and 12, the *Ego* was felt in the head in 42.9% of cases and specifically in the brain in 7.6% of cases, five times more often in males than in females. It was positioned in the heart in 25.2% of cases, with a clear and significant 2-fold prevalence in females than in males ( $p < 0.001$ ). In females compared to males, there was a clear prevalence of *Ego* in the spleen and navel, while in males there was a significantly greater prevalence of *Ego* in the right hand, right thigh, and both feet. The other localizations are shown in Table 2.

**3) Adolescent subjects.** In the teen-agers (between the ages of 13 and 19), the

*Ego* was felt in the head in 54.2% of cases, with no sex polarization. It was felt in the heart in 23.8% of cases, three times more frequently in females than in males. It was also felt in the thighs in a small percentage of males (0.9% on both the right and left sides) but never in females. The other localizations are shown in **Table 3**.



**Figure 2.** Some original examples of the self-attributions of the *Ego* in 614 males (M) and females (F) aged 5 - 68 years.

**4) Adult subjects.** In subjects >19 years of age, the *Ego* was felt in the head in 60.6% of cases (more precisely in the brain in 37%), in the heart in 19.6%, with a non-significant female predominance ( $p = 0.08$ ), and behind the eyes in 11 cases (10.3%) without any sex difference. The other localizations are shown in **Table 4**.

**Table 1.** Localizations of the *Ego* in the 614 subjects of the entire cohort (5 - 68 years). N: numbers; M: males; F: females; NS: not significant difference.

	All (n = 614)		M (n = 302)		F (n = 312)		<i>p</i> M vs. F
	N	%	N	% M	N	% F	
All the head	40	6.5	16	5.3	24	7.7	NS
Cranium	187	30.5	91	30.1	96	30.8	NS
Brain	108	17.6	59	19.5	49	15.7	NS
Forehead	19	3.1	10	2.9	9	3.2	NS
Right eye	16	2.6	5	1.6	11	3.5	NS
Left eye	16	2.6	6	2.0	10	3.2	NS
Behind the eyes	21	3.4	13	4.3	8	2.6	NS
Cyclop's eye	22	3.6	14	4.4	8	2.6	NS
Ears	11	1.8	3	1.0	8	2.6	NS

## Continued

Mouth	22	3.4	13	4.3	9	2.9	NS
Right angle of the mouth	1	0.2	1	0.3	0	0	NS
Right parietal bone	3	0.5	3	1.0	0	0	NS
Left parietal bone	1	0.3	0	0	1	0.3	NS
Under cranial vault	2	0.3	2	0.7	2	0.6	NS
Face	8	1.3	4	1.3	4	1.3	NS
Hear	10	1.6	6	1.6	5	1.6	NS
Nose	1	0.2	1	0.3	0	0	NS
Nape	1	0.2	1	0.3	0	0	NS
Throath	16	2.6	7	2.3	9	2.9	NS
Mediastinum	12	1.9	6	2.0	6	1.9	NS
Heart	145	23.6	37	12.2	108	34.6	<0.0001
Neeples	2	0.3	1	0.3	1	0.3	NS
Back wall	2	0.3	0	0	2	0.6	NS
Diaphragm	25	4.1	12	3.9	13	4.1	NS
Epigastrium	25	4.1	12	4.0	13	4.2	NS
Hypogastrium	11	1.8	6	2.0	5	1.6	NS
Belly button	14	2.3	6	2.0	8	2.6	NS
Spleen	2	0.6	0	0	2	0.3	NS
Intestine	13	2.1	3	1.0	10	3.2	=0.06
Pube or genitals	5	0.8	4	1.3	1	0.3	NS
Right shoulder	7	0.5	3	0.3	4	0.6	NS
Arms	9	1.5	7	2.3	2	0.6	NS
Elbows	10	3.3	6	1.9	4	1.3	NS
Right forearm	5	0.8	3	1.0	2	0.6	NS
Left forearm	4	0.6	2	0.6	2	0.6	NS
Wrists	6	0.5	5	1.0	1	0	NS
Right hand	36	5.9	25	8.3	11	3.5	<0.01
Left hand	27	4.4	26	5.3	11	3.5	NS
Right gluteus	3	0.5	2	0.7	1	0.3	NS
Right thigh	3	0.5	2	0.7	1	0.3	NS
Left thigh	6	1.0	5	1.6	1	0.3	NS
Right knee	10	1.6	7	2.3	3	0.3	NS
Right leg	7	1.1	5	1.7	2	0.6	NS
Left leg	9	1.5	6	2.0	3	1.0	NS
Right foot	17	2.8	14	4.6	3	1.0	<0.001
Left foot	22	3.6	18	6.0	4	1.3	<0.003

**Table 2.** Localizations of the *Ego* in the 184 children (5 - 12 years). N: numbers; M: males; F: females; NS: not significant difference.

	All (n = 184)		M (n = 162)		F (n = 102)		<i>p</i> M vs. F
	N	%	N	% M	N	% F	
All head	79	42.9	46	45.1	33	40.1	NS
Brain	79	42.9	46	45.1	33	40.1	NS
Right eye	4	2.2	1	1.0	3	3.6	NS
Left eye	5	2.7	2	2.0	3	3.6	NS
Behind the eyes	3	1.6	2	2.0	1	1.2	NS
Cyclop's eye	7	3.8	4	2.9	3	4.9	NS
Ears	5	2.7	3	2.0	2	3.7	NS
Face	3	1.6	2	1.2	1	2.0	NS
Here	3	1.6	2	2.0	1	1.2	NS
Throat	2	1.1	0	0	2	2.4	NS
Heart	47	25.2	16	15.7	31	37.8	<0.001
Nipples	1	0.5	0	0	1	1.2	NS
Diaphragm	8	4.4	6	5.9	2	2.4	NS
Belly button	3	1.6	0	0	3	3.6	=0.05
Spleen	2	1.1	0	0	3	3.6	=0.05
Pube and genitals	1	0.5	1	1.0	1	0	NS
Right hand	2	1.1	2	2.0	0	0	NS
Elbows	5	2.7	3	1.2	2	2.0	NS
Right hand	18	9.8	14	13.7	4	4.9	<0.05
Left hand	13	7.1	9	8.8	4	4.9	0.3
Gluteus	2	1.1	2	2.0	0	0	NA
Right thigh	2	1.1	1	1.0	1	1.2	0.9
Left thigh	3	1.6	2	2.0	1	1.2	0.7
Right knee	2	1.1	2	2.0	0	0	NA
Left knee	3	1.6	3	2.9	0	0	NA
Right leg	5	2.7	5	4.9	0	0	<0.04
Left leg	5	2.7	4	3.9	1	1.2	0.3
Right foot	10	5.4	10	9.8	0	0	<0.004
Left foot	13	7.1	12	11.8	1	1.2	<0.007

**Table 3.** Localizations of the *Ego* in adolescents (13 - 19 years). The localizations not reported were not shown in table. M: males; F: females; NS: not significant difference.

	All (n = 323)		M (n = 162)		F (n = 161)		<i>p</i> M vs. F
	N	%	N	% M	N	% F	
Head	175	54.2	93	54.4	82	50.9	NS
Brain	57	17.6	30	18.5	27	16.9	NS
Forehead	13	4.0	6	3.7	7	4.3	NS

## Continued

Right eye	12	2.7	4	2.5	7	4.3	NS
Left eye	11	3.4	4	2.5	7	4.7	NS
Behind the eyes	7	2.2	5	3.1	2	1.2	NS
Cyclop's eye	11	3.4	10	6.2	1	0.6	<0.007
Eers	5	1.5	1	0.6	4	2.5	0.2
Mouth	16	4.9	10	6.2	6	3.7	0.3
Face	5	1.5	2	1.2	3	1.9	0.6
Hear	7	2.1	3	1.8	4	2.4	0.7
Thoath	10	3.1	5	3.1	5	3.1	1.0
Mediastinum	12	3.7	6	3.7	6	3.7	1.0
Heart	77	23.8	17	10.5	60	37.3	<0.0001
Nipples	1	0.3	1	0.6	0	0	NS
Diaphragm	12	3.7	6	3.7	6	3.7	NS
Stomach	2	0.6	1	0.6	1	0.6	NS
Belly button	8	2.5	5	3.1	3	1.9	NS
Intestine	6	1.9	4	1.2	2	2.5	NS
Abdominal wall	2	0.6	0	0	2	1.2	NS
Pube	4	1.2	3	1.8	1	0.6	NS
Right shoulder	3	0.9	1	0.6	2	1.2	NS
Left shoulder	4	1.2	2	1.2	2	1.2	NS
Right arm	4	1.2	2	1.2	2	1.2	NS
Righ elbow	4	1.2	2	1.2	2	1.2	NS
Right forfearm	3	0.9	1	0.6	2	1.2	NS
Left forearm	2	0.6	0	0	2	1.2	NS
Right wrist	2	0.6	0	0	2	1.2	NS
Left wrist	2	0.6	1	0.6	1	0.6	NS
Right hand	15	4.6	9	5.6	6	3.7	NS
Left hand	11	3.4	5	3.1	6	3.7	NS
Right thigh	3	0.9	3	1.8	0	0	=0.08
Left thing	3	0.9	3	1.8	0	0	=0.08
Knees	5	0.6	1	0.6	1	0.6	NS
Legs	4	0.6	0	0	2	1.2	NS
Right foot	14	4.3	8	4.9	6	3.7	NS

**Table 4.** Localizations of the *Ego* in adults (20 - 68 years). The localizations not reported were not shown in table. M: males; F: females; NS: not significant.

	All (n = 614)		M (n = 302)		F (n = 312)		<i>p</i> M vs. F
	N	%	N	% M	N	% F	
Head	66	60.6	23	50.5	43	62.3	NS
Cranium	50	46.7	19	50.0	31	44.9	NS

## Continued

Brain	37	34.6	17	36.7	20	30.0	NS
Forhaed	3	2.8	1	2.6	2	2.9	NS
Behind the eyes	11	10.3	6	15.8	5	7.2	NS
Ears	1	0.9	0	0	1	1.5	NS
Thoath	4	3.7	2	5.6	2	2.8	NS
Heart	21	19.6	4	10.5	17	24.6	=0.08
Diaphragm	5	4.7	0	0	5	7.2	=0.09
Stomach	4	3.7	0	0	4	5.8	NS
Belly button	3	2.8	1	2.6	2	0.6	NS
Hands	4	3.7	3	7.8	1	0.3	NS
Left foot	1	0.9	1	2.6	0	0	NS

### 3.2. Multivariate Analysis

#### 3.2.1. All Subjects Combined

In all subjects considered together, the decision to place the *Ego* in the head was directly associated with years of schooling (OR 1.110,  $p < 0.037$ ), while age and gender were indifferent. Nevertheless, within the head, the localization of the *Ego* in the brain was directly associated not only with years of study (OR 1.165,  $p = 0.049$ ) but also inversely with male gender (OR 0.626,  $p = 0.014$ ).

The localization outside the head was inversely associated with both years of study (OR 0.926,  $p = 0.009$ ) and male gender (OR 0.694,  $p = 0.037$ ). The *Ego* in the abdomen was directly associated with age (OR 1.043,  $p = 0.037$ ), while gender and schooling had no impact. *Ego* in the heart was inversely associated with male sex (OR 0.260,  $p < 0.0001$ ) while age and education had no impact.

The same was true, with slightly different parameters (OR 0.346,  $p = 0.003$ ), for the extended anatomical localization of the heart defined as precordium. No parameters associated with localization in the thorax could be identified. *Ego* in the upper extremities was associated directly with male sex (OR 4.427,  $p < 0.0001$ ) and inversely with education level (OR 0.791,  $p < 0.0001$ ). This was also true for the lower limbs, which were directly associated with male sex (OR 1.544,  $p < 0.0001$ ) and inversely with years of schooling (OR 0.731,  $p = 0.003$ ), while upper limb localization was directly associated with male sex (OR 3.360,  $p < 0.001$ ) but not with education. The accuracy of self-localization (using arrows, dots, highlighted areas, or other unique markers) was directly associated with years of schooling (OR 0.454,  $p = 0.023$ ), and was independent of sex and age, while it was always associated with the multiplicity of localizations, which however did not affect the models. Localization in multiple was directly associated with the presence of halos (OR 2.076,  $p = 0.008$ ) and was also the only parameter directly associated with localization in the auditory-phonatory system (OR 1.786,  $p < 0.0001$ ) and in the visual system (OR 1.578,  $p < 0.0001$ ).

#### 3.2.2. Males

In males only, localization in the head was directly associated with years of edu-

cation (OR 0.171,  $p = 0.007$ ), localization in the brain directly with years of education (OR 1.199,  $p = 0.015$ ) and inversely with age (OR  $-0.123$ ,  $p = 0.045$ ), localization outside the head inversely associated with years of education (OR 0.171,  $p = 0.007$ ), and localization in the limbs in general (OR 0.801,  $p = 0.011$ ) and in the lower limbs in particular (OR 0.728,  $p = 0.042$ ) was inversely associated with education level. Localization in the heart or precordium was not associated with any parameter despite being more represented in females than in males. The number of *Ego* localizations participated directly in all models without affecting them.

### 3.2.3. Females

In females, localization in the head was inversely associated with age (OR 0.094,  $p = 0.023$ ), while localization in the precisely indicated heart (OR  $-0.784$ ,  $p = 0.047$ ) and precordium (OR  $-0.828$ ,  $p = 0.05$ ) was inversely associated with the presence of a halo. Localization in the limbs in general (OR 0.743,  $p = 0.003$ ) and lower limbs in particular (OR  $-0.372$ ,  $p = 0.034$ ) was associated with years of education.

### 3.3. Multiple Localizations of the *Ego*

As mentioned above, the *Ego* was frequently perceived as multiple both in females and in males (Table 5 and Figure 2).

**Table 5.** Multiple localizations of the *Ego*. N: numbers; M: males; F: females; NS: not significant difference.

	N	%	N	%	N	%	p
	All (n = 614)		M (n = 302)		F (n = 312)		M vs. F
Entire cohort (5 - 68 years)							
Head + heart	46	7.5	13	4.3	33	10.6	<0.003
Brain + heart	20	3.3	5	1.7	15	4.8	<0.03
Head + abdomen	17	2.8	5	1.6	12	3.8	<0.05
Head + upper limbs	17	2.8	9	3.0	8	2.6	NS
Head + thorax	13	2.1	4	1.3	9	2.9	NS
Head + diaphragm	8	1.3	2	0.7	6	1.9	NS
Head + intestine	7	1.1	1	0.3	6	1.0	NS
Head + lower limbs	6	1.0	4	1.3	2	0.5	NS
Brain+ abdomen	5	0.8	4	0.3	1	1.3	NS
Children (5 - 12 years)							
Head + heart	9	4.9	4	3.9	6	6.1	NS
Head + upper limbs	9	4.9	6	5.9	3	3.7	NS
Head + abdomen	4	2.2	2	2.0	2	2.4	NS
Head + lower limbs	4	2.2	4	3.9	0	0	=0.07
Head + chest	3	1.6	2	2.0	1	1.2	NS
Brain + heart	2	1.1	1	1.0	1	1.2	NS
Head + diaphragm	1	0.5	1	1.0	0	0	NS

## Continued

	Adolescents (13 - 19 years)						
Head + heart	27	8.4	7	4.3	20	12.4	<0.01
Brain + heart	15	4.6	4	2.5	11	6.8	=0.06
Head + chest	8	2.5	2	1.2	6	3.7	NS
Head + abdomen	6	1.9	2	1.2	4	2.5	NS
Head + upper limbs	6	1.9	2	1.2	4	2.5	NS
Head + diaphragm	3	0.9	1	0.6	2	1.2	NS
Head + intestine	3	0.9	1	0.6	2	1.2	NS
Head + lower limbs	2	0.6	2	1.2	0	0	NS
	Adults (20 - 68 years)						
Head + heart	8	9.3	2	5.2	10	11.6	NS
Head + abdomen	6	5.6	0	0	3	8.7	=0.06
Head + diaphragm	4	3.7	0	0	4	5.8	NS
Head + intestine	4	3.7	0	0	4	5.8	NS
Brain + heart	3	2.8	0	0	3	4.4	NS
Head + chest	2	1.9	0	0	2	2.9	NS
Head + upper limbs	2	1.9	1	2.6	1	1.4	NS

In the entire cohort, 79 subjects (36 males and 43 females) perceived two *Ego*, 23 (11 males and 12 females) perceived three, 13 (3 males and 10 females) perceived four, 4 (2 males and 2 females) perceived five, 3 (1 male and 2 females) perceived six, and 1 male perceived seven.

Among the children, multiple *Ego* were two in 29 cases (16 males and 13 females), three in 9 cases (5 males and 4 females), four in 2 cases (2 males and 2 females), five in 2 males, and six in 1 male. Among adolescents, 39 (16 males and 22 females) experienced two *Ego*, 8 (3 males and 5 females) experienced three, 6 (1 male and 5 females) experienced four, 2 females experienced five, 2 females experienced six, and 1 female experienced seven. Among adults over 19 years of age, 12 (4 males and 8 females) experienced two *Ego*, 6 (2 males and 4 females) experienced three, and 3 females experienced four. The most frequent and significant combinations were head + heart, brain + heart, and head + abdomen (all more frequently in females under the age of 20 years), and head + upper limbs. These were followed by head + thorax, head + diaphragm, head + intestines, head + lower limbs, and brain + abdomen.

Both in males and females, the number of *Ego* localizations participated directly in all models without affecting them.

### 3.4. Cut-Off Analysis

The ROC curve analysis provided the univariate high/low cut-offs of age. Only those conformed in multivariate LOGIT adjusted for confounders were considered as valid. Based on multivariate analysis, the cutoffs confirmed as valid for

both males and females were those for the head, skull, brain, behind the eyes, heart (including the heart as precordium), thorax, abdomen, and limbs (including hands and feet). Including the cutoff values in place of the native variable yielded the results summarized in **Table 6**. The frequency of placement was significantly higher in the head, cranium and brain above 11, 14, and 13 years of age, respectively, and higher in these localizations above 8 years of schooling. Localization behind the eyes was higher after 16 years of age and after 11 years of study. Localization in the heart was higher up to 14 years of age and up to 16 years of study, while that in the mediastinum was higher above 14 years of age and 9 years of study, after which the differences disappeared. Only starting at 29 years of age and 14 years of study was the *Ego* most often located in the abdomen. The *Ego* was most often located in the upper limbs under 14 years of age (under 11 years for the hands) and under 8 years of study (under 6 years for the hands), in the lower limbs under 12 years of age and under 13 years of study.

**Table 6.** Cut-off values (CU) of age and schooling obtained via ROC curves analysis, and main frequencies of localization of the *Ego* in the entire cohort by CU. NS: non-significant difference. Only the CU confirmed in multivariate analysis are shown. The symbol *vs.* indicates  $\geq CU$  (on the left) *vs.*  $< CU$  (on the right).

	By years of age		By years of schooling	
	CU	% vs. % ( <i>p</i> value)	CU	% vs. % ( <i>p</i> value)
Head	11	55.7 vs. 34.3 (<0.0001)	8	53.8 vs. 12.5 (<0.0001)
Cranium	14	39.3 vs. 23.5 (<0.0001)	8	31.8 vs. 0 (<0.001)
Brain	13	20.5 vs. 2.9 (<0.0001)	8	18.3 vs. 0 (<0.03)
Behind the eyes	16	8.0 vs. 1.2 (<0.0001)	11	8.6 vs. 1.2 (<0.0001)
Mouth	18	4.4 vs. 0.7 (<0.05)	15	4.1 vs. 0 (NS)
Not-in-the-head	11	65.7 vs. 44.2 (<0.0001)	8	55.2 vs. 39.7 (<0.0001)
Heart	14	21.8 vs. 25.8 (NS)	16	25.1 vs. 13.2 (<0.02)
Mediastinum	14	13.8 vs. 7.3 (<0.01)	9	14.2 vs. 7.7 (<0.01)
Abdomen	29	17.0 vs. 6.5 (<0.01)	14	11.8 vs. 6.5 (NS)
Upper limbs	14	11.5 vs. 5.1 (<0.005)	8	11.6 vs. 4.5 (NS)
Hands	11	17.6 vs. 4.7 (<0.0001)	6	15.0 vs. 4.4 (<0.0001)
Lower limbs	12	11.6 vs. 3.7 (<0.0001)	7	12.7 vs. 3.1 (<0.0001)
Feet	12	10.3 vs. 2.1 (<0.0001)	6	12.9 vs. 2.1 (<0.0001)
Out of the body	18	2.19 vs. 0 (<0.001)	16	2.6 vs. 6.2 (<0.004)
Presence of halo(s)	13	14.0 vs. 4.9 (NS)	8	19.0 vs. 6.6 (<0.0001)

## 4. Discussion

### 4.1. The Localizations of the *Ego*

Our results demonstrate that, in 98% of cases, general population subjects are able, from the age of 5, to indicate the localization where they perceive their *Ego*, and they do so easily and willingly, without having to force themselves. This localiza-

tion is perceived and reported as being inside the body in 99.7% of cases and outside the body in 0.3%. It is single in 79.9% of cases and multiple in 20.1%.

#### 4.1.1. The *Ego* in the Head

The *Ego* is perceived in the head in just over half of cases (but in the skull in only 30.5% and in the brain in only 17.6%), percentages that increase in both males and females with increasing age (especially after age 11) and level of education (especially after 8 years of formal study), demonstrating that the *Ego in the head* is an acquired and cultural trait rather than innate.

More precisely, a relatively low percentage of people places the *Ego* exactly in the brain (20.5% after the age of 13 and 2.9% before this age). The *Ego in the brain* is absent before 8 years of schooling, indicating a role for modern education in giving importance to the brain as the seat of mental activity. In ancient times (at least until Leonardo da Vinci), the brain was undervalued and considered merely an organ designed to cool the blood. Unlike the heart, which appears in *βιβλία* in 785 verses, the brain is mentioned only twice, as *κακόφρων* (*kakófron*, which translates the Hebrew נַפֶּשׁ) and as *μανία* (*mania*, i.e. strangeness, extravagance). It was only in the post-medieval era that it began to be seen as the seat of what was then called the soul (the concept of the mind did not yet exist, and the *ψυχή* (*psyché*, *psiche*) was a very concrete function devoid of the modern connotations we usually attribute to it). Today, there is once again a tendency to reject the *ghost in the box* paradigm, and the psyche is considered a widespread function. The *Ego* in the head is sometimes located in the eyes (*the mirror of the soul* in Western culture), sometimes behind the eyes or in the *Cyclops' eye*, particularly after the age of 16 and after 11 years of schooling. The view converges behind the eyes, and modern architecture tends to center the perspective lines behind the eyes. Hair (especially depicted in girls) was the seat of strength in mythology. The mouth (especially indicated before the age of 18 and 15 years of education) is the seat of speech; in some cultures, such as the Jewish one, *the voice is everything*, and in fact, the localization in the mouth or throat (where the vocal cords are located) is accompanied in 1.5% of cases by the localization in the ears. The *Ego* is perceived exclusively or even outside the head in 41.4% of cases, as discussed below.

#### 4.1.2. The *Ego* Outside the Head

With maturity and increasing educational level, the *Ego's* preference for other organs, such as the abdomen, chest, heart, and limbs, strongly decreases, reflecting current culture-induced thinking in contrast to the ancient one that located the functions that we today define *psychic* in the thoracic and abdominal interiors. In prehistory and throughout the history of *Homo sapiens*, at the beginning of the transition from strictly symbolic to linguistic thought (Johansson, 2019), the *Ego* was mostly located outside the head. The ancient Greeks imagined it in the liver, stomach, diaphragm, blood, and other localizations we now consider internal; we might say in the *interiora* (entrails, in Latin), from which the modern term *interiority* derives (Casiglia, 2020; Jaynes, 1976). Sumerian has several terms for heart:

*šag* indicates heart, head, intestines, viscera, uterus, stomach, and abdomen. In Hebrew, the plural word *rahámím* (רַחֲמִים, entrails, womb, uterus) also indicates the set of all wombs and equally well the paternal affection for the child. In practical terms, today only young and uncultured subjects tend to place the *Ego* outside the head (Casiglia, 2020; Jaynes, 1976).

Localization in the heart (presented in our experience exclusively in female adolescents) is the main reason for the *Ego*'s preference for the chest, followed by the mediastinum. For millennia, *heart* has been considered the seat of the *Ego* and of the soul, a concept that has come down to us in specific beliefs (such as those against heart transplants) or symbols (such as the *hand on the heart* during significant public ceremonies). In *βίβλια* (Bible), the heart appears in 625 verses of the Old Testament and in about 160 of the New Testament, while the brain is mentioned only twice, as *κακόφρων* (*kakófron*, which translates the Hebrew טעם) and as *μανία* (*mania*, meaning strangeness, extravagance). The heart in the *Nova Vulgata* corresponds to *cor* in Latin, to *καρδία* (*kardia*) in Greek, and to לב or לבב (*leb* or *lebab*) in Hebrew. In *The Text of the Thirty* heart it indicates something that lies in the middle, important for psychosocial life. Even in the New Testament, the word *heart* never refers to the heart pump, but always to something like the interior life. Today we can say that the biblical heart refers to our unconscious, if it is true that קהלת (*Qōhelet*), speaking of man, states that *not even at night does his heart rest* (Bible, 2008). In ancient times the term *heart* symbolically designated the whole person in the unity of consciousness, intelligence and freedom (Casiglia, 2020), indicated the *interiority*, was the seat of memory and the center of operations, choices, and plans (what we now call *narratization*) (Jaynes, 1976). Jung would say that the heart is the *Selbst* (Self), which, however, is achieved through a complicated process of individuation (Jung, 2015).

The *Ego* in the mediastinum and more generally in the extra-cardiac thorax finds a correspondence in the Greek *θυμός* (*thumós*), a very concrete faculty considered to coincide with life or vitality which emerged following fatal wounds. In our study, the cardiac localization is typical of adolescent females only, probably in relation to the high prevalence of sentimental heart problems felt in this age range in the population taken into account. The *Ego* in the nipples has clear sexual connotations linked to personal experiences but also to collective sedimentations. Localization in lower limbs and particular in feet is mostly chosen by school-age males, perhaps related to gymnastics and sports, particularly Italian soccer. Only after 18 years of age and 16 years of formal study does the *Ego* localization outside the body become more frequent, either as a detached site (sometimes with auto-scopic vision) (Facco, 2010; Facco et al., 2019) or as a halo surrounding a body area or the entire body.

#### 4.1.3. Multiple Localizations of the *Ego*

Many subjects (26.6%) experienced the *Ego* as multiple, positioning it in different localizations. This is due to the well-known fact that the *Ego* is nothing more than

a metaphor, and can be felt anywhere, within or outside the body, without any harm to mental health if the multiplicity is not accompanied by clinical mental disorders. Our study demonstrates that, although the majority of psychiatrists consider a multiple *Ego* a sign of pathology, this is not necessarily true, as the phenomenon occurs in a large portion of healthy general population. Various philosophers and psychoanalysts have long clarified that the *Ego* is made up of discrete parts, although it is most often perceived as a single *Ego* or there is one dominant *Ego* (Jaynes, 1976). After Wirchow (Boldrini et al., 2015), the *Ego* decisively ceases to be a monolithic unit, a simple substance, to become an unstable compound, an archipelago of *islands of consciousness*, a *coalition consciousness* whose structure is not dissimilar to that of the coral polyps. The *Ego* of normal individuals is only the strongest, not the only one; its hegemony is based on a system of constructed alliances, and requires a continuous expenditure of energy (Jung, 2015). To speak of *an individual* (an indivisible entity) is now etymologically absurd, given that the *Ego* is seen not as a monarchical figure but as a democratic archipelago with a ruler, perhaps not even always the same one. When the hegemonic *Ego* is missing or not adequately formed, multiple personalities can manifest, representing a rare pathological variant of *normality* not emerging from our results. Psychiatrists (especially because the diagnostic manuals say so) prefer to deal with people who are convinced to have a unique *Ego*. Moreover, non-pathologic episodes of *Ego dissociation* frequently and normally occur in everyday life. And in hypnosis (Casiglia, 2015; Casiglia, 2025; Casiglia & Gadotti, 2022) it is very easy to split the *Ego* (indeed, dissociation is an integral part of the hypnotic procedure consequent to receptor effects) (Casiglia, 2024). Only when accompanied by personally or socially disruptive disorders is the multiple *Ego* (then called multiple personality) indicative of illness. From an anthropological perspective, the multiplicity of the *Ego* can be traced back to its origins from the aggregation of unconscious bicameral voices in the late Neolithic (Casiglia, 2020; Casiglia et al., 2016; Jaynes, 1976).

The present study has primarily anthropological implications and helps mind professionals understand that people are aware of their ego and know where to locate it. An interesting applied finding is that the ego is often perceived as multiple, which gives experimental support to the theory that the ego is an entity composed of subunits; this may explain to psychiatrists why—due to dissociation, disintegration, or loss of a dominant ego—multiple personalities already latently present within the subject’s ego structure can sometimes manifest. Another important consequence is educational and didactic, especially since the study includes childhood and adolescent age groups never previously considered in this type of analysis.

## 5. Limitations of the Study

This study is obviously cross-sectional, which precludes any causal inference. Another limitation is the single-item measurement protocol. On the other hand, alt-

though a single measurement is harmful for a complex concept like the Ego, repeating the test would be impossible because knowledge of the protocol influences every response after the first.

## 6. Conclusion

In conclusion, people are able to easily locate their *Ego* in or near the body, unaware that it is merely a non-local metaphor. Head and heart are the most frequently chosen locations, followed by the limbs, and the *Ego* is generally precisely indicated. Few subjects locate it in the brain. Age and educational background (schooling) determine the location of the *Ego*. The *Ego in the heart* is found in children and adolescents, with greater prevalence in females, while it is not present in adults. It is possible to identify cut-off values above (head, brain, behind the eyes, mediastinum, abdomen, outside the body, and presence of halos) or below (mouth, heart, limbs) which the *Ego* is more indicated. Multiple *Ego* were found in one-fifth of subjects, with a greater but non-significant prevalence in females. The most frequent multiple localizations were head + heart, head + abdomen, and brain + heart and head + limbs. Many localizations of the *Ego* outside the head or brain correspond to ancient localizations found in Greek and Latin mythology.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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## Abbreviations and Acronyms

F: female(s).

LOGIT: logistic regression.

M: male(s).

OR: odds ratio(s).

ROC: receiver operating characteristics.