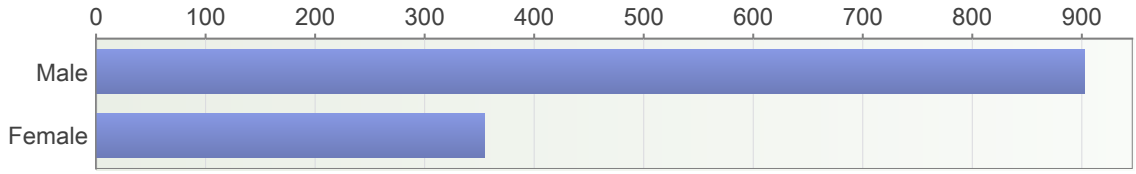
Human evolution final 1-29000

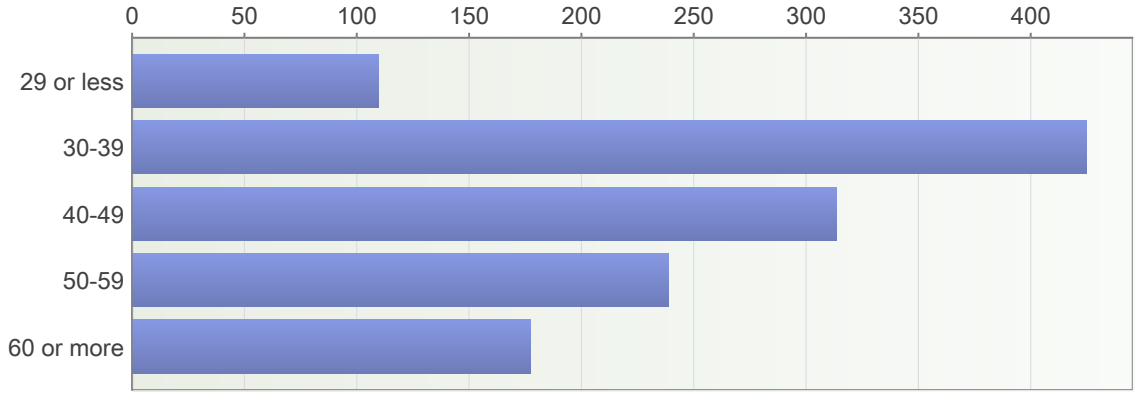
1. Gender

Vastaajien määrä: 1254



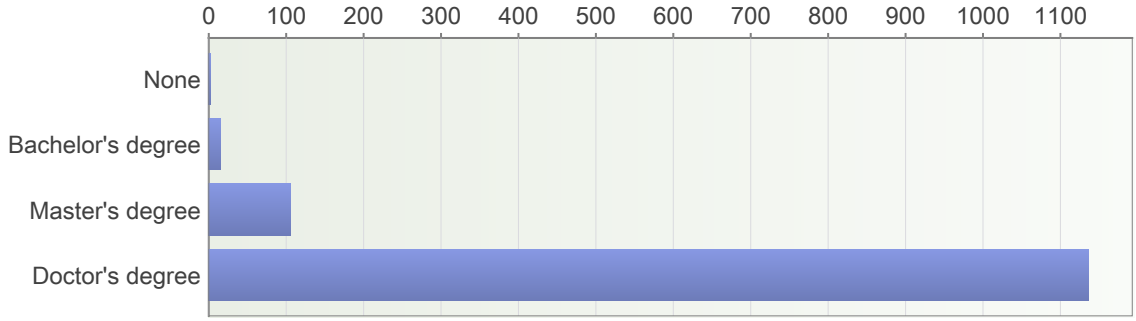
2. Age

Vastaajien määrä: 1261



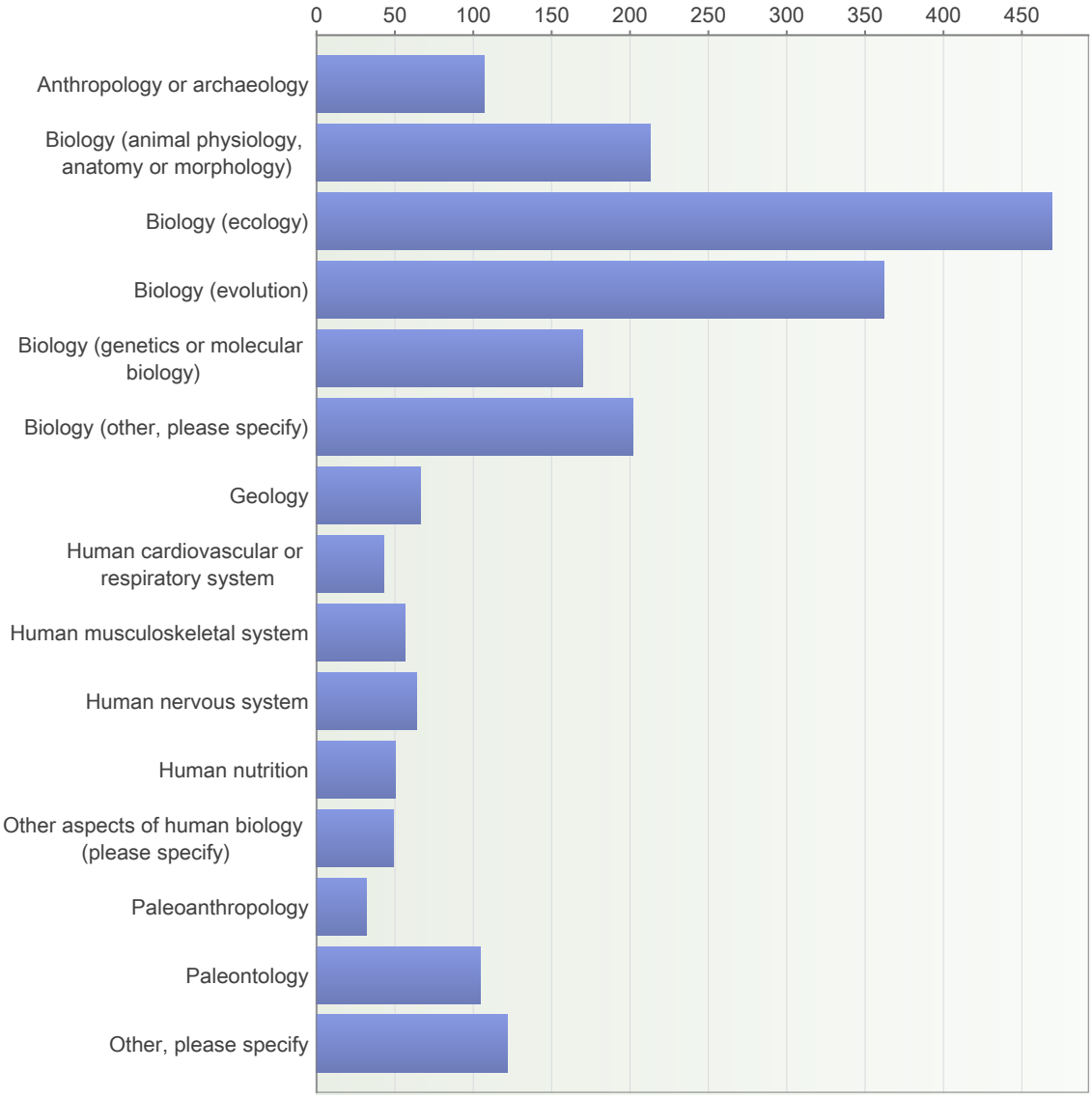
3. Academic education

Vastaajien määrä: 1258



4. Main fields of expertise

Vastaajien määrä: 1263



5. Scientific experience: How many publications have you (co)authored?

Vastaajien määrä: 1263

	none	1-10	11-40	41 or more	Yhteensä	Keskiarvo
Peer reviewed articles in scientific journals	1	330	453	476	1260	3,11
Articles or books targeted at the general public	376	647	118	43	1184	1,85
Yhteensä	377	977	571	519	2444	2,48

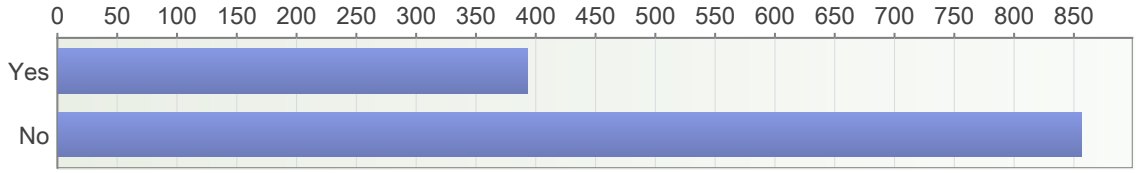
6. Scientific experience: How many publications have you (co)authored on human evolution?

Vastaajien määrä: 1259

	none	1-10	11-40	41 or more	Yhteensä	Keskiarvo
Peer reviewed articles in scientific journals	997	216	28	10	1251	1,24
Articles or books targeted at the general public	1028	134	6	3	1171	1,13
Yhteensä	2025	350	34	13	2422	1,19

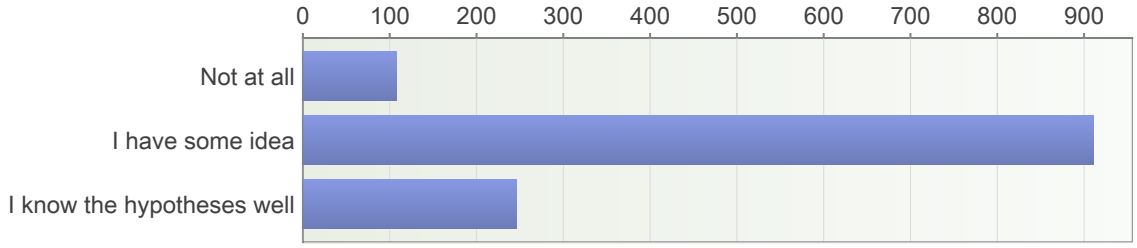
7. Have you taught university courses that cover the evolutionary origin of humans?

Vastaajien määrä: 1248



8. How familiar are you with the existing evolutionary hypotheses on what caused humans to differentiate from apes?

Vastaajien määrä: 1264



9. Humans are the only mammals whose main mode of locomotion is to walk on their hind legs with the spine held erect. This has required extensive structural and functional changes to the body, and an improved balance-keeping mechanism. How likely do you think it is that the following might cause obligate bipedalism to evolve in a primate?

Vastaajien määrä: 1256

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
When covering long distances on the ground, walking or running erect on two legs is energetically more efficient than walking or running on four legs.	237	375	107	336	195	1250	2,9
In the canopy, walking erect facilitates using multiple supports (as in orangutans) and hence makes it possible to move on thinner branches than when brachiating or moving quadrupedally.	67	376	255	362	190	1250	3,19
In a littoral habitat, walking erect allows wading in deeper water with the nostrils above the surface (apes cross water bodies bipedally), and the same posture increases streamlining when swimming and diving for food (as in penguins).	106	340	192	334	275	1247	3,27
Walking erect helps in thermoregulation in the savanna by exposing less skin to the midday sun and more skin to cooling wind.	88	375	235	366	183	1247	3,15
Walking erect makes it possible to see above the savanna grass and hence spot danger from further away.	288	612	118	177	54	1249	2,28
Walking erect makes foraging more efficient, because hands are not needed for locomotion.	435	543	94	132	42	1246	2,04
Walking erect makes it easier for a male to carry high-quality food such as meat to the female and infants.	169	382	242	303	154	1250	2,91
Walking erect makes it possible for a female to carry its offspring in its arms.	159	396	190	336	161	1242	2,95
Walking erect makes it easier to use tools and weapons.	573	438	67	105	64	1247	1,92
Walking erect is favored by sexual selection, as it makes the genitals more visible.	29	147	267	416	394	1253	3,8
Yhteensä	2151	3984	1767	2867	1712	12481	2,84

10. Human brains are larger than those of any other primate. Brains are energetically costly to build and maintain, and a big head makes giving birth dangerous both to the mother and the baby. How likely do you think it is that the following might cause encephalization (evolution of a big brain) in a primate?

Vastaajien määrä: 1257

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
A shift in diet towards eating more meat triggers encephalization, because meat is rich in energy.	98	348	215	361	234	1256	3,23
A shift in diet towards eating more fish and other seafood triggers encephalization, because seafood is rich in both energy and the omega-3 fatty acids that are an essential component of brain tissue.	73	282	269	374	254	1252	3,36
The use of fire triggers encephalization, because cooking increases the nutritional value of plant foods.	71	281	253	377	265	1247	3,39
Complex social organization causes pressure for greater intelligence and hence triggers encephalization.	478	577	84	80	30	1249	1,88
Collaborative hunting causes pressure for greater intelligence and hence triggers encephalization.	302	640	156	112	40	1250	2,16
Spoken language causes pressure for greater intelligence and hence triggers encephalization.	422	525	122	125	55	1249	2,09
Warfare causes pressure for greater intelligence and hence triggers encephalization.	115	348	293	322	166	1244	3,06
Encephalization is a secondary effect of neoteny (the retention of juvenile features into adulthood), which is advantageous when specialized adult morphology adapted to one environment has become maladaptive in a new environment.	109	264	432	278	162	1245	3,1
Encephalization is triggered by bipedalism, which changes the blood circulation and provides a cooling mechanism for the larger brain.	24	155	363	417	290	1249	3,64
Encephalization is triggered by nakedness, which provides a cooling mechanism for the larger brain.	6	50	282	441	463	1242	4,05
Yhteensä	1698	3470	2469	2887	1959	12483	3

11. Almost all mammals have fur, which provides protection against physical damage, sunburn and extreme temperatures. Humans are unique among primates in having a functionally naked skin. How likely do you think it is that the following might cause body hair to be lost in a primate?

Vastaajien määrä: 1254

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
Direct skin-to-skin contact strengthens the emotional bond between a female and its nursing offspring.	41	173	189	444	404	1251	3,8
Direct skin-to-skin contact makes sex more enjoyable, and is favored by sexual selection.	37	180	200	412	421	1250	3,8
In animals that feed messily on carrion, naked skin stays cleaner than hairy skin (or feather-covered skin as in vultures).	24	227	272	397	317	1237	3,61
In mammals that live in permanent nests, naked skin helps to avoid a high ectoparasite load.	79	546	251	240	129	1245	2,83
In mammals that live partly or entirely in water, fur is often lost because it causes drag when swimming but fails to provide efficient insulation when wet (e.g. walrus, hippopotamuses, dolphins).	89	303	222	325	304	1243	3,36
In mammals that hunt on the savanna, naked skin dissipates heat more efficiently and reduces the risk of becoming overheated.	205	565	186	207	83	1246	2,52
Large mammals can regulate their body temperature without investing in hair, and humans are relatively large compared to other primates.	68	395	347	304	126	1240	3,02
Once the use of clothes has become common, fur becomes unnecessary.	133	285	177	258	394	1247	3,4
Yhteensä	676	2674	1844	2587	2178	9959	3,29

12. Human skin is unique among primates in being attached to a subcutaneous fat layer that can become so thick as to impede physical movement. Human babies are energetically costly to the mother, because they are much more plump than those of other primates at birth and accumulate even more fat during lactation. How likely do you think it is that the following might cause a subcutaneous fat layer to evolve in a primate?

Vastaajien määrä: 1254

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
In conditions of variable food supply, subcutaneous fat can store energy for times of food scarcity, and in infants it secures the development of the large brain.	505	627	70	32	15	1249	1,74
In wet conditions, subcutaneous fat provides more efficient insulation than hair does, and it makes swimming easier by increasing buoyancy and streamlining of the body.	102	336	284	312	210	1244	3,15
Subcutaneous fat is an adaptation to thermoregulation in the savanna, together with nakedness and sweating.	120	478	318	231	97	1244	2,76
Subcutaneous fat defines the body shape and its evolution is driven by sexual selection.	43	292	254	365	289	1243	3,45
Yhteensä	770	1733	926	940	611	4980	2,78

13. Humans are unique among primates in having a descended larynx (the head of the windpipe is permanently situated in the throat rather than in the nasal cavity). This causes a risk of choking (potentially fatally) on food or one's own tongue. How likely do you think it is that the following might cause a descended larynx to evolve in a primate?

Vastaajien määrä: 1251

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
Articulate speech requires a descended larynx, because this makes it possible to produce a wider variety of sounds.	536	508	139	39	26	1248	1,81
A descended larynx makes the voice stronger and more impressive, and can evolve through sexual selection (as in the males of some deer).	120	439	304	257	122	1242	2,86
A descended larynx can evolve as an adaptation to diving (as in some aquatic mammals), because it makes it possible to close the air passages when under water and to inhale rapidly through the mouth when surfacing.	35	189	337	334	345	1240	3,62

Yhteensä	691	1136	780	630	493	3730	2,76

14. Some apes have learned to communicate through signs and symbols, but none has learned to speak. How likely do you think it is that the following might cause a primate to shift from visual and olfactory communication to verbal speech?

Vastaajien määrä: 1251

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
Speech is triggered by the descended larynx, which allows making a wider variety of sounds.	222	535	232	160	84	1233	2,47
Speech requires voluntary breath control, which can evolve as an adaptation to diving. In water, visual and olfactory cues are inadequate and therefore liable to be replaced by vocal communication (as in whales).	29	169	277	391	374	1240	3,74
Speech requires voluntary breath control, which can evolve after bipedalism frees breathing from the constraint posed by the mechanics of locomotion.	71	371	348	292	160	1242	3,08
Speech provides a means for females to reassure their offspring who have to be put down while foraging.	23	181	281	426	321	1232	3,68
Social pressure for more elaborate communication triggers evolution of speech.	517	548	88	52	35	1240	1,82
Collective hunting requires a means of effective communication and therefore triggers evolution of speech.	314	609	132	133	51	1239	2,19
Transmitting cultural tradition (e.g., how to cope with unusually severe droughts) from one generation to the next requires a means of effective communication and therefore triggers evolution of speech.	299	498	174	171	100	1242	2,42
Yhteensä	1475	2911	1532	1625	1125	8668	2,77

15. The origins of the following human traits have been rarely discussed in the scientific literature, but the proposal has been made that they evolved because the ancestors of humans were adapting to a semi-aquatic way of life at some stage after the separation of the human and ape lineages. Please indicate how likely you find this explanation for each trait.

Vastaajien määrä: 1245

	Very likely	Moderately likely	No opinion	Moderately unlikely	Very unlikely	Yhteensä	Keskiarvo
Human babies can be taken for a swim long before they can walk. They are comfortable in water and capable of holding their breath when submerged.	139	374	259	267	203	1242	3,02
Unlike apes, humans have an arched nose and flexible nostrils. These help prevent water from entering the respiratory tract when diving.	38	308	337	302	256	1241	3,35
Humans have a relatively weak sense of smell, as aquatic mammals often do.	39	213	325	358	301	1236	3,54
Humans have partial webbing between their fingers and toes. Webbed feet are common among semi-aquatic animals (such as otters and ducks), but are not found in non-human primates.	25	222	297	336	351	1231	3,62
Cooling sweat is excreted from eccrine glands in humans but from apocrine glands in other primates. Apocrine glands could have lost their thermoregulatory function in human ancestors during a period when dip-cooling replaced sweat-cooling.	24	219	530	237	222	1232	3,34
Humans sweat more profusely than any other primate. Since this can lead to fatal loss of water and electrolytes in a few hours, the trait probably evolved in conditions of abundant water and salt supply.	77	427	301	230	204	1239	3,05
Compared to other primates, humans are stronger swimmers and can dive both deeper and further.	97	390	319	232	195	1233	3,03
The diving reflex (slowing down of heartbeat and oxygen usage in water) increases the resistance of the brain to apnea, and its magnitude in human divers is comparable to that in semi-aquatic mammals such as otters and beavers.	79	393	381	190	185	1228	3,01
Compared to other primates, humans are unusually fond of immersing themselves in water. This is manifested in the popularity of beach holidays, swimming and bathing.	61	239	312	243	374	1229	3,51
Yhteensä	579	2785	3061	2395	2291	11111	3,27

16. The proposal that all the human traits mentioned in the previous questions could have evolved as adaptations to a coastal habitat and a semi-aquatic way of life has been dubbed the Aquatic Ape Hypothesis (AAH). To what degree do you agree with the following criticism that has been targeted against this idea?

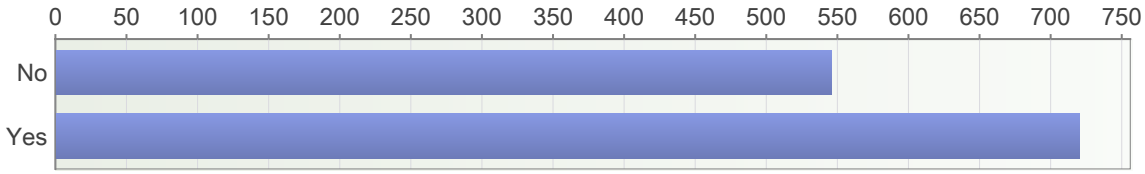
Vastaajien määrä: 1227

	Fully agree	Mostly agree	No opinion	Mostly disagree	Strongly disagree	Yhteensä	Keskiarvo
AAH conflicts with what is known about evolutionary processes in general.	69	224	549	290	89	1221	3,09
A major problem with AAH is that it is based on extreme environmental determinism.	109	384	451	220	54	1218	2,78
AAH is not needed, because all human traits can be explained by terrestrial scenarios.	156	422	411	198	34	1221	2,62
AAH is merely an exercise in comparative anatomy, not a scientific hypothesis.	71	240	523	289	98	1221	3,08
Not all aquatic mammals have naked skin, so hairlessness cannot be considered an aquatic adaptation.	218	491	302	177	31	1219	2,44
Humans may be similar to aquatic mammals in some traits, but this is only a coincidence and has no evolutionary relevance.	178	396	409	202	34	1219	2,6
According to AAH, humans should swim better than apes and have more streamlined bodies, but they do not.	67	263	613	221	50	1214	2,94
AAH lacks credibility, because the evidence presented in its favor is false.	30	107	780	208	86	1211	3,18
AAH is not supported by fossil evidence, because this shows no skeletal adaptations to an aquatic environment.	174	383	555	86	19	1217	2,5
AAH is contradicted by the fossil record, because this suggests a permanently non-aquatic environment.	156	331	554	140	29	1210	2,63
AAH lacks credibility, because its proponents do not agree on when and where the supposed aquatic phase took place.	67	215	658	209	67	1216	3
There has not been enough time for an aquatic phase.	80	247	604	229	54	1214	2,94
AAH is too simplistic to be taken seriously.	78	202	538	290	101	1209	3,11
AAH is less parsimonious than other proposed hypotheses: it has to explain both how human traits evolved in water, and how they were retained after return to land.	207	454	408	116	28	1213	2,43
AAH is internally less consistent than other proposed hypotheses.	121	275	680	99	35	1210	2,71
AAH is unscientific, because it cannot make predictions.	23	79	571	351	183	1207	3,49

AAH is unscientific, because it has been used in feministic argumentation.	9	20	529	256	398	1212	3,84
AAH can be ignored, because it was not published in a peer reviewed journal, and because it is mostly discussed in forums other than scientific journals.	30	133	498	314	238	1213	3,49
AAH can be ignored, because its main proponents are not professionals in the field of human evolution.	22	111	566	297	213	1209	3,47
AAH is pseudoscience comparable to creationism.	20	84	511	292	300	1207	3,64
Yhteensä	1885	5061	10710	4484	2141	24281	3

17. Had you heard of the Aquatic Ape Hypothesis before this survey?

Vastaajien määrä: 1265



18. How much have the following sources contributed to what you know about the Aquatic Ape Hypothesis?

Vastaajien määrä: 704

	Considerably	A little	Not at all	Yhteensä	Keskiarvo
Articles in scientific journals	90	211	379	680	2,43
Books by Elaine Morgan	72	73	529	674	2,68
Books by other authors	82	196	403	681	2,47
Articles or programs in popular media (press, TV, radio)	137	336	210	683	2,11
University courses on human evolution	82	177	413	672	2,49
Personal communication from someone who knew the hypothesis	124	221	330	675	2,31
Blogs or other personal web pages	35	111	526	672	2,73
Wikipedia	19	91	558	668	2,81
Yhteensä	641	1416	3348	5405	2,5

19. How common were the following attitudes towards the Aquatic Ape Hypothesis (AAH) in those sources?

Vastaajien määrä: 696

	Common	Rare	Not seen	Yhteensä	Keskiarvo
AAH was rejected as implausible.	274	163	243	680	1,95
AAH was mentioned or described, but no opinion on its validity was expressed.	317	220	151	688	1,76
AAH was found more plausible than alternative hypotheses.	95	318	266	679	2,25
Yhteensä	686	701	660	2047	1,99