AI and Human Enhancement: Examining Attitudes on Neural Chips and Embryonic Gene Editing

Dagmar Heintze, Karim Iqbal, Olivia Pietrzak, and Cristina Rivera

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A Appendix A: Ability of neural implants and gene editing to predict scientific attitudes Visualizations

BCHIP14 and SC1

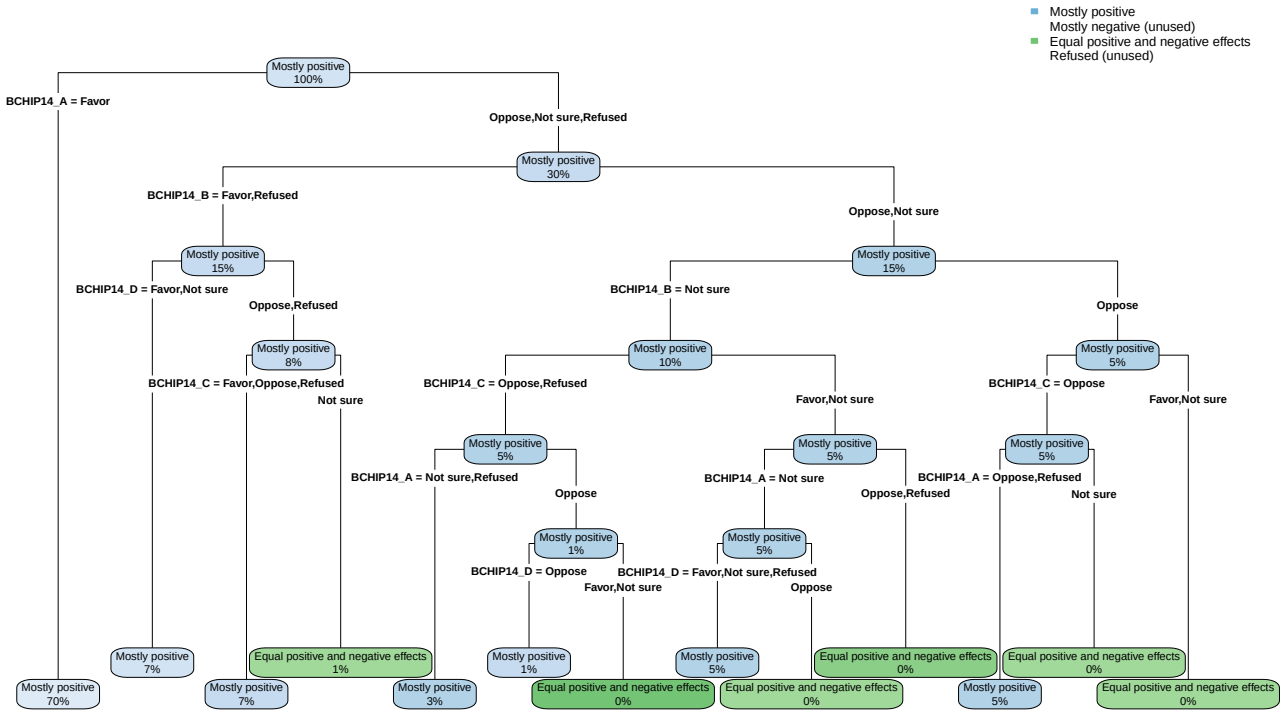

Figure 1: BCHIP14 and SC1

SC1 and GENEV3

Table 1: Confusion Matrix Random Forest SC1 and BCHIP14

	A	B	C	D
Mostly positive	898	0	7	0
Mostly negative	60	3	1	0
Equal positive and negative effects	292	0	9	0
Refused	5	1	0	1

Note: A: Mostly positive, B: Mostly negative; C: Equal positive and negative effects; D: Refused

Table 2: Confusion Matrix Random Forest SC1 and GENEV3

	A	B	C	D
Mostly positive	905	0	0	0
Mostly negative	64	0	0	0
Equal positive and negative effects	301	0	0	0
Refused	7	0	0	0

Note: A: Mostly positive, B: Mostly negative; C: Equal positive and negative effects; D: Refused

SC1 and GENEV4

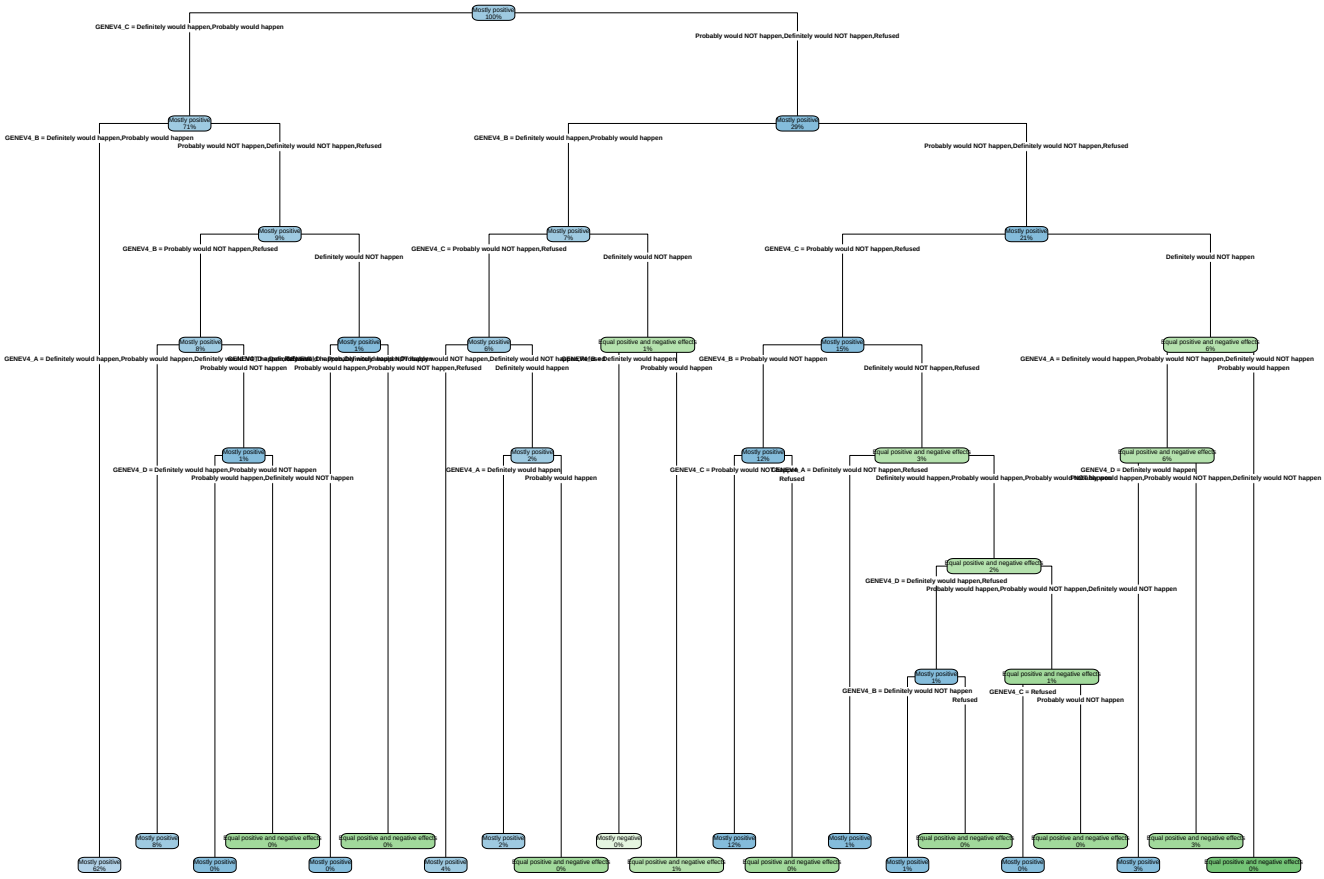

Figure 2: SC1 and GENEV4

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Analysis of Variable Impacts Across Regression Models

Differences in Impact Across Models

Variable Inconsistency Across Outcomes

Logistic Regression In the logistic regression models, variables such as `BCHIP14_a_W99` through `BCHIP14_d_W99` consistently exhibit similar effects across various model specifications

(ranging from GENEV3_W99 to GENEV4_d_W99). The direction of the effect, whether positive or negative, remains constant across these models. This consistency suggests a stable association between these predictors and the outcome variable across different scenarios.This stability could imply a deep-rooted set of beliefs about such technologies, potentially based on ethical convictions or fundamental understanding.

Linear Regression Conversely, in the linear regression framework, the impact of comparable variables displays notable variability across different model outcomes (from GENEV3 to GENEV4d). For example, the variable BCHIP14a shows a range of effects from a non-significant impact in GENEV4a to a significantly negative influence in GENEV4d. This variability implies that the effect of BCHIP14a may be contingent upon other unmeasured factors or contextual elements that are not consistently accounted for across the models.

Significance of Variables

Logistic Regression The logistic regression analysis demonstrates robustness in the significance of the variables, with most maintaining their statistical importance across different models. This indicates a strong and consistent relationship between these predictors and the dependent variable, reinforcing the reliability of the logistic model outcomes.

Linear Regression In contrast, the significance of variables such as BCHIP14c in the linear regression models varies more broadly. This variable shows significant positive effects in some configurations and significant negative effects in others. Such discrepancies suggest a complex interaction between BCHIP14c and the dependent variable, potentially influenced by other variables not included in the model.

Table 3: Results from logistic regression analysis.

Model	Term	Coefficient	Std. Error	Z-Value	P-value	Odds Ratio
GENEV3_W99	Intercept	-2.108	0.370	-5.702	1.19E-08***	0.121
	BCHIP3_W99	-0.204	0.084	-2.430	0.0151*	0.815
	BCHIP14_a_W99	0.418	0.108	3.886	0.0001***	1.520
	BCHIP14_b_W99	0.318	0.135	2.367	0.0179*	1.375
	BCHIP14_c_W99	0.383	0.072	5.299	1.17E-07***	1.467
	BCHIP14_d_W99	0.296	0.072	4.092	4.27E-05***	1.345
GENEV4_a_W99	Intercept	-0.574	0.406	-1.413	0.158	0.563
	BCHIP3_W99	-0.132	0.117	-1.126	0.260	0.877
	BCHIP14_a_W99	0.568	0.147	3.874	0.0001***	1.765
	BCHIP14_b_W99	0.875	0.157	5.589	2.28E-08***	2.399
	BCHIP14_c_W99	-0.289	0.114	-2.525	0.0116*	0.749
	BCHIP14_d_W99	-0.114	0.119	-0.954	0.340	0.892
GENEV4_b_W99	Intercept	-2.198	0.404	-5.442	5.26E-08***	0.111
	BCHIP3_W99	-0.318	0.113	-2.799	0.0051**	0.728
	BCHIP14_a_W99	0.576	0.120	4.819	1.45E-06***	1.779
	BCHIP14_b_W99	0.523	0.144	3.642	0.0003***	1.687
	BCHIP14_c_W99	0.413	0.093	4.434	9.27E-06***	1.512
	BCHIP14_d_W99	0.335	0.091	3.674	0.0002***	1.398
GENEV4_c_W99	Intercept	-1.294	0.403	-3.210	0.0013**	0.274
	BCHIP3_W99	-0.171	0.112	-1.525	0.127	0.843
	BCHIP14_a_W99	0.616	0.121	5.105	3.30E-07***	1.851
	BCHIP14_b_W99	0.180	0.148	1.217	0.224	1.197
	BCHIP14_c_W99	0.410	0.093	4.396	1.10E-05***	1.507
	BCHIP14_d_W99	0.219	0.092	2.383	0.0172*	1.245
GENEV4_d_W99	Intercept	0.926	0.349	2.657	0.0079**	2.526
	BCHIP3_W99	-0.076	0.070	-1.089	0.276	0.927
	BCHIP14_a_W99	-0.151	0.115	-1.309	0.190	0.860
	BCHIP14_b_W99	0.389	0.135	2.873	0.0041**	1.475
	BCHIP14_c_W99	-0.224	0.067	-3.355	0.0008***	0.799
	BCHIP14_d_W99	-0.128	0.070	-1.838	0.066	0.880