Appendix

Theorem 3. The only normalizations that transform all of the analyzed measures into measures Z and A satisfying the symmetries of Ex_2 are the normalization of Crupi et al. and its likelihoodist counterpart. Moreover, measures D, R and G normalized using the Bayesian approach satisfy all symmetries gathered up in Ex_2.

Proof:
Considering the formulation of a confirmation measure in terms of quantities a, b, c, d, and denoting by $f^+(a,b,c,d)$ the formulation of the confirmation measure in case of confirmation, and by $f^-(a,b,c,d)$ the formulation of the confirmation measure in case of disconfirmation, the Ex_2 conditions of symmetry properties can be expressed as follows:

(E^+)	$f^+(a,b,c,d) \neq -f^-(b,a,d,c)$,	(H^+)	$f^+(a,b,c,d) = -f^-(c,d,a,b)$,
(EI^+)	$f^+(a,b,c,d) \neq -f^-(b,d,a,c)$,	(HI^+)	$f^+(a,b,c,d) = -f^-(c,a,d,b)$,
(I^+)	$f^+(a,b,c,d) \neq f^+(a,c,b,d)$,	(EH^+)	$f^+(a,b,c,d) \neq f^+(d,c,b,a)$,
(EHI^+)	$f^+(a,b,c,d) = f^+(d,b,c,a)$,	(E^-)	$f^-(a,b,c,d) \neq -f^+(b,a,d,c)$,
(H^-)	$f^-(a,b,c,d) = -f^+(c,d,a,b)$,	(EI^-)	$f^-(a,b,c,d) = -f^+(b,d,a,c)$,
(HI^-)	$f^-(a,b,c,d) \neq -f^+(c,a,d,b)$,	(I^-)	$f^-(a,b,c,d) = f^-(a,c,b,d)$,
(EH^-)	$f^-(a,b,c,d) \neq f^-(d,c,b,a)$,	(EHI^-)	$f^-(a,b,c,d) \neq f^-(d,b,c,a)$.

Let us observe that in the above formulation, "=" means that the corresponding symmetry is desirable, while "≠" means that the corresponding symmetry is undesirable. To verify if a desirable symmetry holds, we have to prove that it is true for all combinations of a, b, c, d values. In case of an undesirable symmetry, it is enough to prove that it does not hold for at least one combination of a, b, c, d values.

The Tables A-D contain the results of verification of the above symmetries for measures normalized in different ways. Some of the symmetries hold unconditionally, like symmetry H^+ for D_N measure. Such cases are marked as "always" in Tables A-D. Measures that do not always satisfy symmetries EHI^+, H^-, H^+, HI^+, EI^-, I^- do not fulfil Ex_2 conditions as a whole.
As for undesirable symmetries E^+, EI^+, I^+, HI^-, EH^-, EH^+, E^-, EHI^-, however, we are looking for at least one case of a, b, c, d values in which the equation describing them is not satisfied. Thus, measures for which such a combination never occurs (like in case of symmetry I^+ for measure M_N) also do not satisfy Ex_2.

Looking at the results gathered in Tables A-D, we can conclude that the normalization of Crupi et al. and its likelihoodist counterpart, transform all of the analyzed measures into measures Z and A (respectively) satisfying the symmetries of Ex_2. Moreover, measures D, R and G normalized using the Bayesian approach satisfy all symmetries gathered up in Ex_2.

Table A. Symmetries for measures normalized using the approach inspired by Nicod

		D_N	S_N	M_N	N_N	C_N	R_N	G_N
E^+	$c(H, E) \neq - c(H, \neg E)$	iff $ab \neq cd$	iff $ab \neq cd$	iff $b \neq 0$	iff $b^2+bd \neq c^2+ac$	iff $ab \neq cd$	iff $b \neq 0$	iff $c \neq 0$
H^+	$c(H, E) = - c(\neg H, E)$	always	always	iff $c=0$	always	always	iff $c=0$	iff $c=0$
$E\Gamma^+$	$c(H, E) \neq - c(\neg E, H)$	iff $b \neq c$	iff $b \neq c$	iff $b \neq 0$	iff $b \neq c$	iff $b \neq c$	iff $b \neq 0$	iff $c \neq 0$
$H\Gamma^+$	$c(H, E) = - c(E, \neg H)$	iff $a=d$	iff $a=d$	iff $c=0$	iff $a=d$	iff $a=d$	iff $c=0$	iff $c=0$
Γ^+	$c(H, E) \neq c(E, H)$	iff $b \neq c$	iff $b \neq c$	never	iff $b \neq c$	iff $b \neq c$	never	iff $b \neq c$
EH^+	$c(H, E) \neq c(\neg H, \neg E)$	iff $ab \neq cd$	iff $ab \neq cd$	*)	iff $b^2+bd \neq c^2+ac$	iff $ab \neq cd$	*)	iff $b \neq c$
$EH\Gamma^+$	$c(H, E) = c(\neg E, \neg H)$	iff $a=d$	iff $a=d$	**)	iff $a=d$	iff $a=d$	**)	always
E^-	$c(H, E) \neq - c(H, \neg E)$	iff $ab \neq cd$	iff $ab \neq cd$	iff $a \neq 0$	iff $d^2+bd \neq a^2+ac$	iff $ab \neq cd$	iff $a \neq 0$	iff $d \neq 0$
H^-	$c(H, E) = - c(\neg H, E)$	always	always	iff $a=0$	always	always	iff $a=0$	iff $a=0$
$E\Gamma^-$	$c(H, E) = - c(\neg E, H)$	iff $b=c$	iff $b=c$	iff $a=0$	iff $b=c$	iff $b=c$	iff $a=0$	iff $a=0$
$H\Gamma^-$	$c(H, E) \neq - c(E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq 0$	iff $a \neq d$	iff $a \neq d$	iff $a \neq 0$	iff $d \neq 0$
Γ^-	$c(H, E) = c(E, H)$	iff $b=c$	iff $b=c$	always	iff $b=c$	iff $b=c$	always	***)
EH^-	$c(H, E) \neq c(\neg H, \neg E)$	iff $ab \neq cd$	iff $ab \neq cd$	iff $a \neq d$	iff $d^2+bd \neq a^2+ac$	iff $ab \neq cd$	iff $a \neq d$	****)
$EH\Gamma^-$	$c(H, E) \neq c(\neg E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	never

*) iff $a^2bc+ab^2c+abc^2 \neq b^2cd+bc^2d+bcd^2$,
i.e. iff $a \neq d$ *and* $b \neq 0$ *and* $c \neq 0$
**) iff $a^2bc+ab^2c+abc^2 = b^2cd+bc^2d+bcd^2$,
i.e. iff $a = d$ *or* $b = 0$ *or* $c = 0$
***) iff $a^2cd+ac^2d+acd^2 = a^2bd+ab^2d+abd^2$,
i.e. iff $b = c$ *or* $a = 0$ *or* $d = 0$
****) iff $a^2cd+ac^2d+acd^2 \neq a^2bd+ab^2d+abd^2$,
i.e. iff $b \neq c$ *and* $a \neq 0$ *and* $d \neq 0$

Table B. Symmetries for measures normalized using the Bayesian approach

		D_B	S_B	M_B	N_B	C_B	R_B	G_B
E^+	$c(H, E) \neq -c(H, \neg E)$	iff $b \neq c$	never	never	never	never	iff $b \neq c$	iff $b \neq c$
H^+	$c(H, E) = -c(\neg H, E)$	always	always	always	always	always	always	always
EI^+	$c(H, E) \neq -c(\neg E, H)$	iff $b \neq c$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $b \neq c$	iff $b \neq c$
HI^+	$c(H, E) = -c(E, \neg H)$	always	iff $a = d$	iff $a = d$	iff $a = d$	iff $a = d$	always	always
I^+	$c(H, E) \neq c(E, H)$	iff $b \neq c$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $b \neq c$	iff $b \neq c$
EH^+	$c(H, E) \neq c(\neg H, \neg E)$	iff $b \neq c$	never	never	never	never	iff $b \neq c$	iff $b \neq c$
EHI^+	$c(H, E) = c(\neg E, \neg H)$	always	iff $a = d$	iff $a = d$	iff $a = d$	iff $a = d$	always	Always
E^-	$c(H, E) \neq -c(H, \neg E)$	iff $a \neq d$	never	never	never	never	iff $a \neq d$	iff $a \neq d$
H^-	$c(H, E) = -c(\neg H, E)$	always	always	always	always	always	always	Always
EI^-	$c(H, E) = -c(\neg E, H)$	always	iff $a = d$	iff $a = d$	iff $a = d$	iff $a = d$	always	Always
HI^-	$c(H, E) \neq -c(E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$
I^-	$c(H, E) = c(E, H)$	always	iff $a = d$	iff $a = d$	iff $a = d$	iff $a = d$	always	Always
EH^-	$c(H, E) \neq c(\neg H, \neg E)$	iff $a \neq d$	never	never	never	never	iff $a \neq d$	iff $a \neq d$
EHI^-	$c(H, E) \neq c(\neg E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$

Table C. Symmetries for measures normalized using the likelihoodist approach

		D_L	S_L	M_L	N_L	C_L	R_L	G_L
E^+	$c(H, E) \neq -c(H, \neg E)$	never	never	never	never	never	never	never
H^+	$c(H, E) = -c(\neg H, E)$	always	always	iff $b=c$	always	always	iff $b=c$	iff $b=c$
EI^+	$c(H, E) \neq -c(\neg E, H)$	iff $a \neq d$	iff $a \neq d$	never	iff $a \neq d$	iff $a \neq d$	never	never
HI^+	$c(H, E) = -c(E, \neg H)$	iff $a=d$	iff $a=d$	iff $b=c$	iff $a=d$	iff $a=d$	iff $b=c$	iff $b=c$
I^+	$c(H, E) \neq c(E, H)$	iff $a \neq d$	iff $a \neq d$	iff $b \neq c$	iff $a \neq d$	iff $a \neq d$	iff $b \neq c$	iff $b \neq c$
EH^+	$c(H, E) \neq c(\neg H, \neg E)$	never	never	iff $b \neq c$	never	never	iff $b \neq c$	iff $b \neq c$
EHI^+	$c(H, E) = c(\neg E, \neg H)$	iff $a=d$	iff $a=d$	always	iff $a=d$	iff $a=d$	always	always
E^-	$c(H, E) \neq -c(H, \neg E)$	never	never	never	never	never	never	never
H^-	$c(H, E) = -c(\neg H, E)$	always	always	iff $a=d$	always	always	iff $a=d$	iff $a=d$
EI^-	$c(H, E) = -c(\neg E, H)$	iff $a=d$	iff $a=d$	iff $a=d$	iff $a=d$	iff $a=d$	iff $a=d$	iff $a=d$
HI^-	$c(H, E) \neq -c(E, \neg H)$	iff $a \neq d$	iff $a \neq d$	never	iff $a \neq d$	iff $a \neq d$	never	never
I^-	$c(H, E) = c(E, H)$	iff $a=d$	iff $a=d$	always	iff $a=d$	iff $a=d$	always	always
EH^-	$c(H, E) \neq c(\neg H, \neg E)$	never	never	iff $a \neq d$	never	never	iff $a \neq d$	iff $a \neq d$
EHI^-	$c(H, E) \neq c(\neg E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$

Table D. Symmetries for measures normalized using the approach of Crupi et al.
and for measures normalized using the likelihoodist counterpart of the approach of Crupi et al.

		D_C	S_C	M_C	N_C	C_C	R_C	G_C
E^+	$c(H, E) \neq -c(H, \neg E)$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$
H^+	$c(H, E) = -c(\neg H, E)$	always	always	always	always	always	always	Always
EI^+	$c(H, E) \neq -c(\neg E, H)$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$
HI^+	$c(H, E) = -c(E, \neg H)$	always	always	always	always	always	always	Always
I^+	$c(H, E) \neq c(E, H)$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$
EH^+	$c(H, E) \neq c(\neg H, \neg E)$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$	iff $b \neq c$
EHI^+	$c(H, E) = c(\neg E, \neg H)$	always	always	always	always	always	always	Always
E^-	$c(H, E) \neq -c(H, \neg E)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$
H^-	$c(H, E) = -c(\neg H, E)$	always	always	always	always	always	always	always
EI^-	$c(H, E) = -c(\neg E, H)$	always	always	always	always	always	always	always
HI^-	$c(H, E) \neq -c(E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$
I^-	$c(H, E) = c(E, H)$	always	always	always	always	always	always	always
EH^-	$c(H, E) \neq c(\neg H, \neg E)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$
EHI^-	$c(H, E) \neq c(\neg E, \neg H)$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$	iff $a \neq d$