Appendix 3. Supplementary material to statistical analysis and detailed group information.

This appendix contains specifications on the statistical tests and software we used as well as a description of variables used for the statistical analysis (see Table A3.1) and an overview of detailed group information (Table A3.2).

Preceding each statistical test, we applied the Shapiro-Wilk test (Shapiro and Wilk 1965) to test whether or not the data was normally distributed. If the test produced positive results at a 5% significance level, we rejected the assumption of normality and we reported results of non-parametric tests. To compare proportions across the treatments, we used a Pearson's chi-square test (D'Agostino et al. 1988) or a Fisher's exact test respectively, depending on the case frequencies (Kanji 1993).

All reported p-values are two-sided. All variables used display (mean) group values. We consider for all four treatments the first 14 rounds of the game for our analysis. We used the statistical software STATA 12.1 from 2012.

As for the logistic regressions, we tested for specification errors, goodness-of-fit, multicollinearity as well as for influential observations (do-files are available upon request). The reported models hold these diagnostics.

Table A3.1. Description of variables used for analysis. All variables display (mean) group values.

Variable	Value range	Description
Crossing potential threshold (severe overexploitation)	$0 \vee 1$	Group crosses the potential threshold within 14 rounds.
Modest overexploitation	$0 \vee 1$	Group exploits the resource above what is optimal at some point during the game but does not cross the potential threshold.
Depletion	$0 \vee 1$	Group depletes the resource stock. When depletion happens in agreement, we refer to cooperative depletion.
Cooperative group	$0 \vee 1$	Group is able to reach agreement with respect to its exploitation strategy for the entire experiment and the agreements followed by all group members, i.e., with no cheating.
Group agreement round one	$0 \vee 1$	Group uses the communication possibility to reach an agreement on harvest strategy in the first round. This does not imply that subjects actually follow this agreement.
Efficiency	[0, 1]	Share of actual joint earnings over the maximum possible.
Gini coefficient (individual earnings)	[0, 1]	Represents the distribution of individual earnings within a group.
Understanding of resource dynamics[†]	[1, 5]	Perceived understanding about how the resource changes over time.
Gender composition[†]	[0, 1]	This variable is dichotomous on individual level (1 = female).
Group of 4 subjects	$0 \vee 1$	Groups consist of three or four subjects (1 = four subjects).
Weird index[†]	[0, 1]	This variable is dichotomous on individual level. Subject from a western, educated, industrialized, rich, democratic (weird) country = 1, see Henrich et al. (2010). European, North American, and Australian subjects are here classified as such.

Know others from before[†]	[0, 1]	This variable is dichotomous on group level (1 = at least one subject indicated knowing someone else from before).
Age[†]	>18	Number of years spent as part of the biosphere.

[†] Variables obtained from postexperimental questionnaire (see Appendix 2).

See Table A3.2 on next page.

Table A3.2. Detailed group information.

Group name	Group no.	# sub-jects	Coop. group	Gini coef. = 0	Crossing potential threshold	Depletion	Modest over-expl.	Group agree-ment round one	Reasons for crossing potential threshold	Reasons for depletion	EOG effect?
Threshold treatment											
A03	1	3	Yes	No	No	No	No	Yes	--	--	--
B01[¶]	2	3	Yes	Yes	No	No	No	Yes	--	--	--
B02	3	4	Yes	No	No	No	No	Yes	--	--	--
C01	4	3	Yes	Yes	No	No	Yes	Yes	--	--	--
CT1[|]	5	4	No	No	No	No	No	Yes	--	--	--
CT2[|]	6	4	Yes	Yes	No	No	Yes	Yes	--	--	--
CT3[|,¶]	7	4	Yes	Yes	No	No	No	Yes	--	--	--
CT4[|]	8	4	Yes	Yes	No	No	No	Yes	--	--	--
CT5	9	4	No	No	No	No	No	Yes	--	--	--
E02	10	4	No	No	Yes, in round 12	Yes, in round 13	No	Yes	n/a	n/a	n/a
T01	11	4	No	No	Yes, in round 1[‡]	No	No	No	Group agreement in round one only between 3/4 subjects, the one that did not agree took out 20 resource stock units.	--	--
T02	12	4	Yes	No	No	No	No	Yes	--	--	--
T03	13	3	Yes	No	No	No	No	Yes	--	--	--
T04	14	3	Yes	No	No	No	No	Yes	--	--	--
T05	15	4	Yes	Yes	No	No	No	Yes	--	--	--
T06[¶]	16	3	Yes	Yes	No	No	No	Yes	--	--	--
T07[¶]	17	4	Yes	Yes	No	No	No	Yes	--	--	--
T08	18	3	Yes	Yes	No	No	Yes	Yes	--	--	--
T09	19	4	Yes	No	No	No	No	Yes	--	--	--
T10	20	4	Yes	No	No	No	No	Yes	--	--	--
High-risk treatment											
UHT01[†]	21	3	No	No	Yes, in round 10	No	--	No	Combination of poor communication (unclear group agreement) and one subject that took much more than the others in round 10.	--	--
UHT02[†]	22	3	No	No	No	No	No	No	--	--	--

UHT03[†]	23	4	No	No	No	No	Yes	Yes	--	--	--
UHT04	24	3	No	No	Yes, in round 11	Yes, in round 12	--	Yes	One subject harvested more than agreed upon.	Trust eroded, decision of the other two subjects to deplete stock in round after they crossed the threshold by taking each the available stock size.	No
UHT05[†,¶]	25	4	Yes	Yes	No	No	No	Yes	--	--	--
UHT06[†]	26	4	No	No	No	No	No	Yes	--	--	--
UHT07[†]	27	4	Yes	Yes	No	No	Yes	Yes	--	--	--
UHT08[†]	28	3	No	No	Yes, in round 10	No	--	Yes	Crossed the threshold on purpose, group wanted to know which scenario they play.	--	--
UHT09[†]	29	4	No	No	No	No	Yes	Yes	--	--	--
UHT10[†]	30	4	No	No	Yes, in round 2	Yes, in round 3	--	No	Combination of cheating and misunderstanding of the cheater regarding the hysteresis effect.	Trust eroded, all but one subject harvested more than agreed upon (harvest of 1 resource stock unit) which lead to depletion of the resource.	No
UHT11[†]	31	3	Yes	No	No	Yes, in round 12[§]	No	Yes	--	Due to believe that game would end soon.	Yes
UHT12[¶]	32	4	Yes	Yes	No	No	No	Yes	--	--	--
UHT13[†]	33	4	Yes	Yes	No	No	Yes	Yes	--	--	--
UHT14[†]	34	3	Yes	No	No	No	No	Yes	--	--	--
UHT15	35	4	Yes	Yes	No	No	No	Yes	--	--	--
UHT16[†]	36	4	No	No	No	No	No	Yes	--	--	--
UHT17[†]	37	3	No	No	Yes, in round 6[‡]	No	--	Yes	Crossed the threshold on purpose, group wanted to know which scenario they play.	--	--
UHT18	38	4	Yes	No	No	No	No	Yes	--	--	--
UHT19[†]	39	4	Yes	No	No	No	Yes	Yes	--	--	--
UHT20[†]	40	4	No	No	No	No	Yes	Yes	--	--	--
UHT21[†]	41	4	No	No	Yes, in round 8	Yes, in round 12	--	Yes	Combination of cheating and misunderstanding of the cheater regarding the hysteresis effect.	Trust eroded and although they initially decided to rebuild the resource stock, in round 12, one subject took it all.	No
Medium-risk treatment											
U01[¶]	42	3	Yes	Yes	No	No	No	Yes	--	--	--
U02[†]	43	4	Yes	No	No	No	No	Yes	--	--	--
U03[†,¶]	44	4	Yes	Yes	No	No	No	Yes	--	--	--
U04	45	3	Yes	No	No	No	No	Yes	--	--	--
U05[†]	46	4	Yes	No	No	No	No	Yes	--	--	--
U06[†,¶]	47	3	Yes	Yes	No	No	No	Yes	--	--	--
U07	48	4	Yes	No	No	No	No	Yes	--	--	--

U08[†]	49	4	Yes	No	No	No	No	Yes	--	--	--
U09	50	3	No	No	Yes, in round 2	Yes, in round 5	No	No	Poor communication (weak group agreements).	No agreements for rebuilding the stock, stock decreases to 5 units and then they deplete it.	No
U10[†,¶]	51	4	Yes	Yes	No	No	No	Yes	--	--	--
U11[†,¶]	52	4	Yes	Yes	No	No	No	Yes	--	--	--
U12[†]	53	4	Yes	No	No	No	No	Yes	--	--	--
U13	54	4	Yes	No	No	No	No	Yes	--	--	--
U14	55	4	Yes	No	No	No	No	Yes	--	--	--
U15[†,¶]	56	4	Yes	Yes	Yes, in round 10	Yes, in round 11[§]	No	Yes	Miscalculation of group.	When they realized the calculation mistake in the round after they crossed the threshold (and that they played scenario B), they decide to end the game by depleting the remaining resource stock.	No
U16[†]	57	4	No	No	Yes, in round 14	No	No	No	Two subjects harvested more than agreed upon.	--	--
U17[†]	58	4	Yes	No	No	No	No	Yes	--	--	--
U18[†]	59	4	No	No	No	No	Yes	No	--	--	--
U19[†]	60	4	No	No	Yes, in round 1[‡]	No	No	No	No communication in round one (in which they crossed the threshold).	--	--
U20	61	4	Yes	Yes	No	No	Yes	Yes	--	--	--
U21	62	4	Yes	No	No	No	No	Yes	--	--	--
U22	63	4	No	No	Yes, in round 7	Yes, in round 8[§]	No	Yes	Miscalculation of group.	When they realized the calculation mistake in the round after they crossed the potential threshold, they decide to end the game by depleting the remaining resource stock. The group did not realize that they actually played scenario A.	No
U23	64	3	No	No	Yes, in round 14	No	No	No	Crossed the threshold on purpose, group wanted to know which scenario they play.	--	--
Low-risk treatment											
ULT01	65	3	No	No	No	No	Yes	Yes	--	--	--
ULT02	66	4	Yes	Yes	No	Yes, in round 7[§]	Yes	Yes	--	Due to believe that game would end soon.	Yes
ULT03	67	3	Yes	No	No	No	No	Yes	--	--	--
ULT04	68	3	No	No	Yes, in round 4	No	No	No	No communication at all.	--	--
ULT05[†]	69	3	Yes	No	Yes, in round 10	Yes, in round 12[§]	No	Yes	Crossed the threshold on purpose, group wanted to know which scenario they play and slowly decrease the resource stock.	Two rounds later they decided to deplete the resource stock before the experimenters would end the game.	Yes

ULT06	70	4	Yes	Yes	No	No	No	Yes	--	--	--
ULT07[†]	71	4	No	No	Yes, in round 1	Yes, in round 2	No	No	One subject did not take part in deciding on group agreements, this subject made the group cross the threshold.	Trust eroded, long discussion on collaboration, trust, individual gain. Group decided to take 0 resource stock units in next round. All do so but one subject; he/she depleted the stock (not the one that made the group cross the threshold).	No
ULT08[|]	72	4	No	No	Yes, in round 13	No	No	No	Crossed the threshold on purpose, group wanted to know which scenario they play.	--	--
ULT09	73	3	No	No	Yes, in round 12	No	No	No		--	--
ULT10[¶]	74	3	Yes	Yes	Yes, in round 5	Yes, in round 9[§]	No	Yes	Crossed the threshold on purpose while slowly reduce the resource stock.	Decided to deplete the resource stock four rounds after they crossed the threshold since they believed the game would end before they can bring back the stock to a higher regeneration rate.	Yes
ULT11	75	3	No	No	Yes, in round 8	Yes, in round 13[§]	No	No	One subject refused to cooperate.	First group agreement happened in round 13, when they decided to end the game.	No
ULT12[¶]	76	3	Yes	Yes	No	No	Yes	Yes	--	--	--
ULT13	77	3	No	No	No	No	Yes	No	--	--	--
ULT14	78	4	No	No	No	Yes, in round 12[§]	No	No	--	Due to believe that game would end soon.	Yes
ULT15	79	3	No	No	Yes, in round 14	No	No	No	Crossed the threshold on purpose, group wanted to know which scenario they play.	--	--
ULT16	80	4	Yes	No	No	No	No	Yes	--	--	--
ULT17	81	4	No	No	No	No	Yes	Yes	--	--	--
ULT18[¶]	82	4	Yes	Yes	No	No	No	Yes	--	--	--
ULT19	83	4	Yes	No	No	No	No	Yes	--	--	--
ULT20	84	4	No	No	No	No	No	Yes	--	--	--

Note: Expl. means exploitation. EOG means end of game effect, i.e. group ended the game due to believe that experimenters would end it soon. Note that a group that crossed the potential threshold and depleted the resource stock within the same round was not classified as a group that crossed the potential threshold.

[†]These groups played scenario B.

[‡]These groups reversed the regime shift, i.e. they rebuilt the resource stock to the higher regeneration rate.

[§]These groups depleted the resource stock in cooperation.

[|]These groups played less than 14 rounds (CT02 and CT04 played 12 rounds and the other groups played 13 rounds) due to time restrictions.

[¶]These groups shared the harvest equally in each round throughout the entire game.

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