Supporting Information Appendix

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1 Materials and methods

1.1 Instructions

The instructions consisted printed pages and on-screen instructions. Each participant received a copy of the printed instructions, and these were read out loud by an experimenter. The printed instructions were the same for all participants. Treatments differed only in the on-screen instructions, which complemented the printed pages and explained the specific details relevant to each treatment. The instructions below are English translations of the German instructions used in the experiment.

1.1.1 General instructions (printed)

Welcome and thank you for participating in this experiment. Please remain quiet and switch off your mobile phone. Do not speak to the other participants. Communication between participants will lead to the automatic end of the session with no payment to anyone. Whenever you have a question, please raise your hand and one of the experimenters will come to your cubicle.

Please read the instructions carefully. The instructions are the same for all participants.

You will receive €2.50 for having shown up on time. The experiment allows you to earn additional money. The experiment consists of exactly **three phases**. The instructions for each phase will be explained after the previous phase is finished. The three phases are independent, i.e., the decisions you and the other participants make in one phase do not influence the other phases in any way.

1.1.2 Instructions for single trial die-rolling task (printed)

Instructions for the first phase

In this phase your payoff depends on luck, and will be determined by die rolls. You will roll the die, report the result on the computer, and your payoff will be determined according to rules that will be explained on-screen.

How to roll?

On your desk you have a covered cup with a six-sided die. To roll, hold the cup in your hand, shake a few times, and place the cup on your desk. Then peek through the hole, and report the result. Try this once or twice now – roll the die and peek through the hole. [At this point the experimenter reading the instructions paused to allow participants to try rolling the dice.]

Payoff

The amount of money you will earn in this phase depends on the result of two rolls. Some of you will roll twice; others will be paired with another participant, and each member of the pair will roll once. You will receive information about the order of rolling (who rolls first, who rolls second) on-screen, as well as the rules by which payoffs are determined.

Understanding the rules

The payoff-rules will be presented on-screen in a table which details the result of the first roll, the result of the second roll, and the associated payoffs. In most cases payoffs are higher when the two rolls are identical and lower when the two rolls differ. Now you can see the table on your screen [See 1.1.3 for a screen shot]. Please follow the on-screen instructions.

Try as many practice rolls as you like, until you are sure that the die is fair and that you understand how the two rolls determine your payoff, and possibly the payoff of another person. You can also fill-in hypothetical numbers without rolling, to fully understand the table [See 1.1.4 for screen shots].

Once you have understood the rules, and are convinced that the die is fair, click "I Understand the Rules / Die is fair" on your screen. [At this point the experimenter reading the instructions paused until all participants indicated they have understood the rules and are convinced that the die is fair.]

Rolling for payoff

The rolls that will determine the payoff in this stage will take place in a moment. Please follow the instructions on your screen precisely [See 1.1.5 for the on-screen instructions participants saw at this point].

1.1.3 Example of payoff table

Screen shot of payoff table presented to participants in the Aligned Outcomes treatment. In the other treatments the values were adjusted according to the relevant rules (see 1.2).

Instructions

In this part you are matched with another participant, which we will refer to as "person X".
You will roll your die first, and report the result on the computer.
Person X will see your report, roll his/her die, and report the result.
Both your payoff and person X's payoff depend on the reported numbers.
If the two numbers are different from each other, both you and person X receive 0 ECU.
If the two numbers are equal, you and person X will be paid according to the following table:

First report	Second report	You receive	Person X receives
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6

1.1.4 Practice screens

1.1.4.1 Before Player A's (hypothetical) report (as seen by player B)

Control questions
(not for payoff)

Please roll the die for both persons and enter the results on the computer.
The table will change after each input. After the first input the payoffs which are still possible will be highlighted.
After the second input only the row with the relevant payoff will be highlighted.

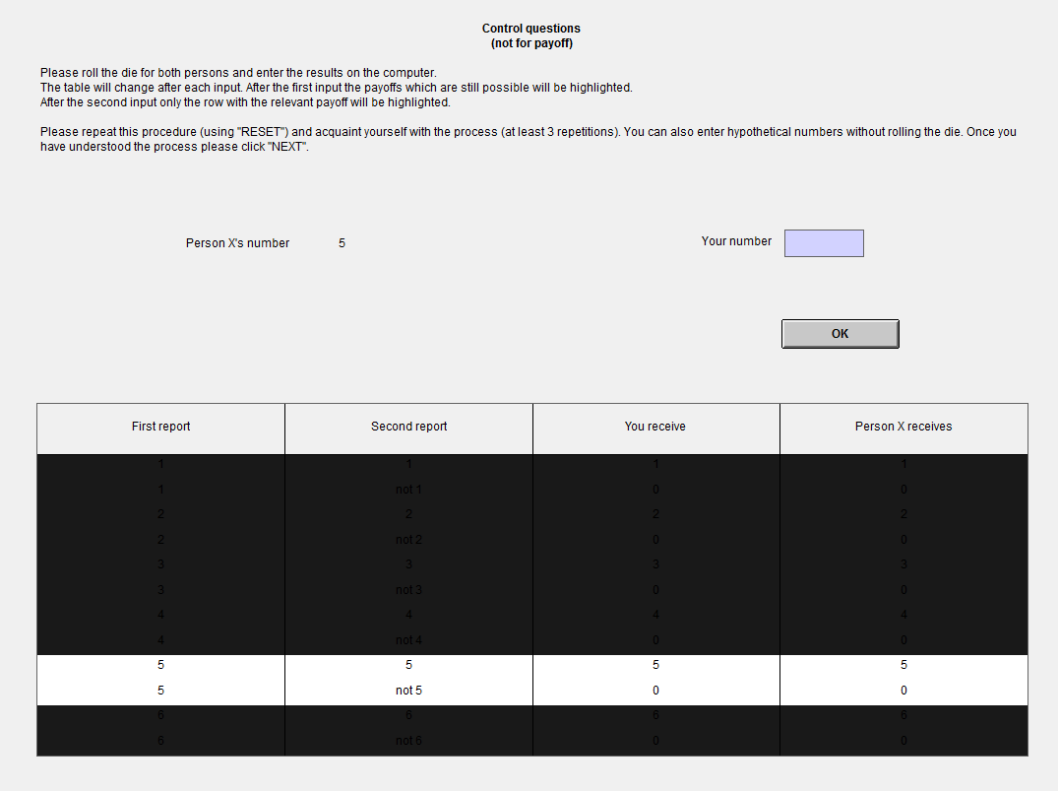
Please repeat this procedure (using "RESET") and acquaint yourself with the process (at least 3 repetitions). You can also enter hypothetical numbers without rolling the die. Once you have understood the process please click "NEXT".

Person X's number | Your number 0

OK

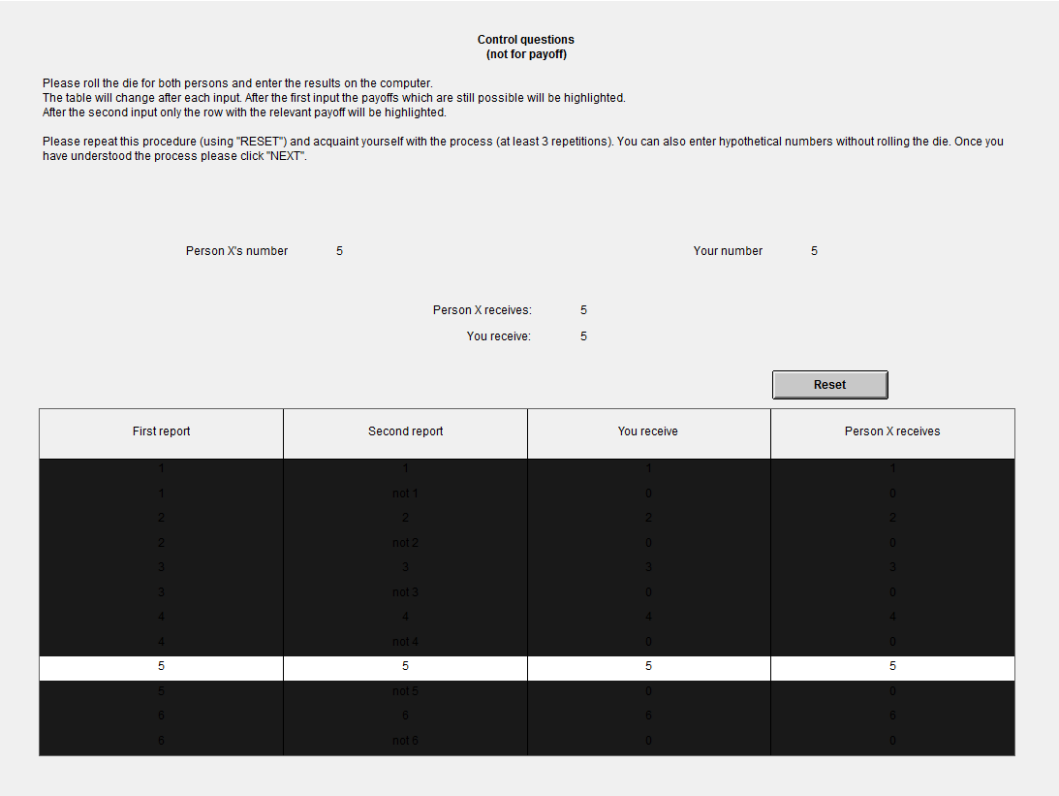
First report	Second report	You receive	Person X receives
1	1	1	1
1	not 1	0	0
2	2	2	2
2	not 2	0	0
3	3	3	3
3	not 3	0	0
4	4	4	4
4	not 4	0	0
5	5	5	5
5	not 5	0	0
6	6	6	6
6	not 6	0	0

1.1.4.2 After Player A's (hypothetical) report, before Player B's (hypothetical) report (as seen by player B)



Note: the blacked out part on the screen-shot is what participants actually saw on the screen. Contingent on the hypothetical value they entered for player A, (5 in the example above), all the irrelevant rows were blacked out, and only the relevant rows remained (easily) visible.

1.1.4.3 After both reports (as seen by player B)



Control questions
(not for payoff)

Please roll the die for both persons and enter the results on the computer.
The table will change after each input. After the first input the payoffs which are still possible will be highlighted.
After the second input only the row with the relevant payoff will be highlighted.

Please repeat this procedure (using "RESET") and acquaint yourself with the process (at least 3 repetitions). You can also enter hypothetical numbers without rolling the die. Once you have understood the process please click "NEXT".

Person X's number 5 Your number 5

Person X receives: 5
You receive: 5

Reset

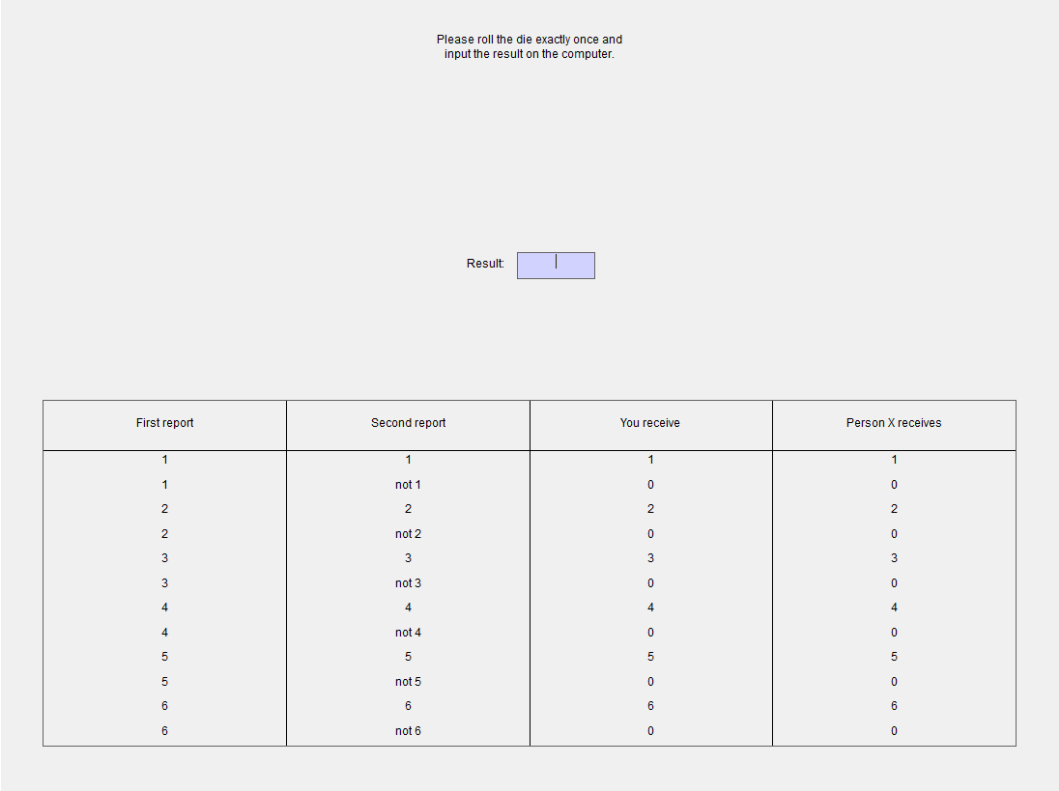
First report	Second report	You receive	Person X receives
1	1	1	1
1	not 1	0	0
2	2	2	2
2	not 2	0	0
3	3	3	3
3	not 3	0	0
4	4	4	4
4	not 4	0	0
5	5	5	5
5	not 5	0	0
6	6	6	6
6	not 6	0	0

Note: the blacked out part on the screen-shot is what participants actually saw on the screen. Contingent on the hypothetical values they entered for player A and player B, (5 and 5 in the example above), all the irrelevant rows were blacked out, and only the relevant row remained (easily) visible.

1.1.5 Decision screens

1.1.5.1 Before Player A's report (as seen by player A)

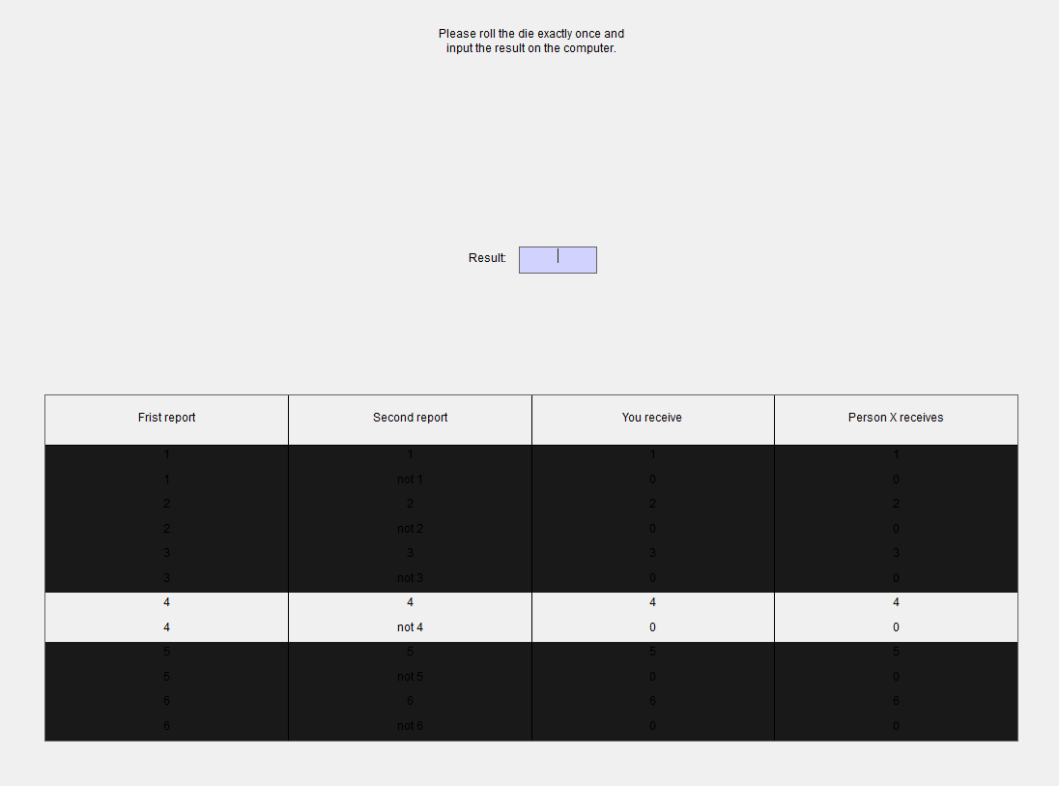
Before Player A reports the first roll, both players see the following screen, with the exception that Player B does not see the input box, so only Player A can report the value of her roll:



First report	Second report	You receive	Person X receives
1	1	1	1
1	not 1	0	0
2	2	2	2
2	not 2	0	0
3	3	3	3
3	not 3	0	0
4	4	4	4
4	not 4	0	0
5	5	5	5
5	not 5	0	0
6	6	6	6
6	not 6	0	0

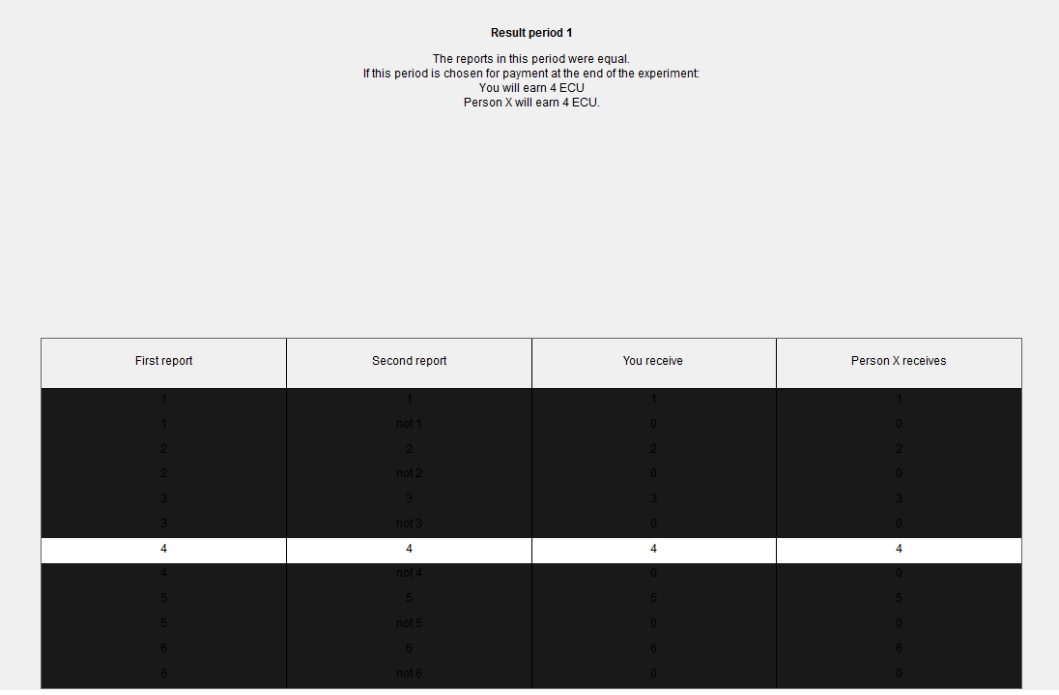
1.1.5.2 After Player A's report, before Player B's report (as seen by player B)

After Player A reports the first roll (4 in this case), both players see the following screen, with the exception that Player A does not see the input box, so only Player B can report the value of her roll:



1.1.5.3 After both reports

After both decisions both players see the following screen:



1.1.6 Instructions for phase 2 (twenty trials die-rolling task)

There were no written Instructions for this phase. The following message appeared on-screen, and was also read out loud by the experimenter:

> Phase 2 is identical to Phase 1 except that the interaction will take place multiple times (not more than 30). The procedure and the rules are exactly as in phase 1.
>
> The other person (person X) you will be matched with in Phase 2 is not the person you were matched with in Phase 1. You will be matched with a different person who will remain the same for all periods of Phase 2.
>
> At the end of Phase 2 one period will be selected randomly and you will be paid according that period.

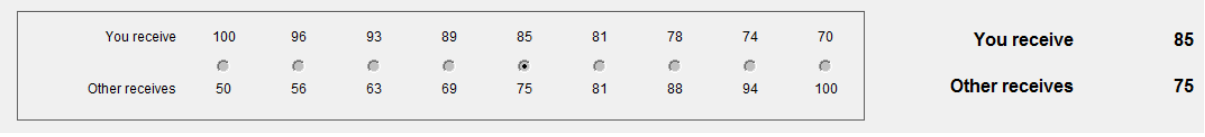
1.1.7 Instructions for Social Value Orientation task (printed)

Before reading these instructions, there was a message on-screen indicating that 30 "Experimental currency Units" (ECU) are worth €1.

Instructions for the 3rd phase

In this phase you will make a series of decisions about allocating resources (ECU) between yourself and another person. For each of the following items, please indicate the distribution you prefer most by clicking the respective position. There are no 'right or wrong' answers, this is all about personal preferences. In the example below, a person has chosen to distribute the resources so that he/she receives 85 ECU, while the other person receives 75 ECU.

Example:



After all participants have made their decisions you will be randomly assigned to be an "Allocator" or a "Recipient". If you are an allocator then one of your decisions (randomly

chosen) will determine your payoff and the payoff of another participant. If you are a recipient then your payoff will be determined by one of the other participants.

1.2 Procedure summary

Fig. S1 and Table S1 provide a summary or the procedure and payoffs in all dyadic treatments (Aligned Outcomes, B-High, B-Low, B-Fixed, A-High, A-Low, A-Fixed). In the Individuals treatment the same person rolled and reported twice, and earned the value of the reports if they were identical, otherwise zero.

Fig. S1. General procedure for all dyadic treatments

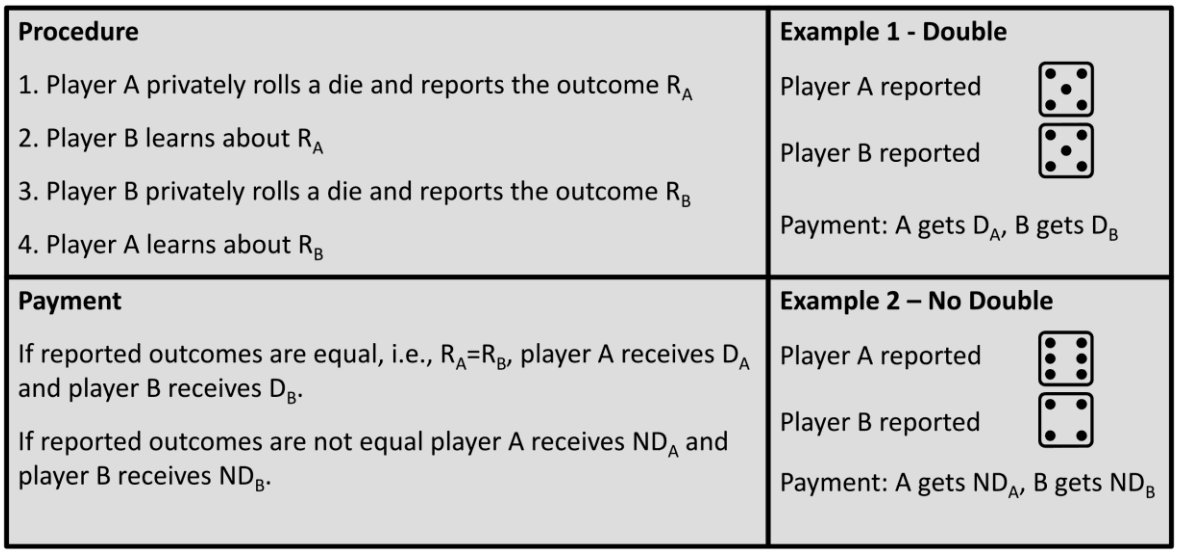


Table S1. Payoffs in dyadic treatments

	Treatment	D_A	D_B	ND_A	ND_B
Original experiment	Aligned Outcomes	R_A (=R_B)	R_A (=R_B)	0	0
	B-Low	R_A (=R_B)	1	0	0
	B-High	R_A (=R_B)	6	0	0
	B-Fixed	R_A (=R_B)	1	0	1
	A-Low	1	R_A (=R_B)	0	0
	A-High	6	R_A (=R_B)	0	0
	A-Fixed	1	R_A (=R_B)	1	0
Robustness experiment	Replication – Aligned Outcomes	R_A (=R_B)	R_A (=R_B)	0	0
	Replication – B-Fixed	R_A (=R_B)	1	0	1
	Multiplication – Aligned Outcomes	2×R_A (=2×R_B)	2×R_A (=2×R_B)	0	0
	Multiplication – B-Fixed	2×R_A (=2×R_B)	2×1 (=2)	0	2
	Addition – Aligned Outcomes	2+R_A (=2+R_B)	2+R_A (=2+R_B)	0	0
	Addition – B-Fixed	2+R_A (=2+R_B)	2+1 (=3)	0	3

2 Figures

2.1 Distribution of reported outcomes – original experiment

The following figures display the distribution of reported outcomes for each treatment. They are structured as **Error! Reference source not found.** in the main text.

Fig. S2. Aligned Outcomes – original experiment

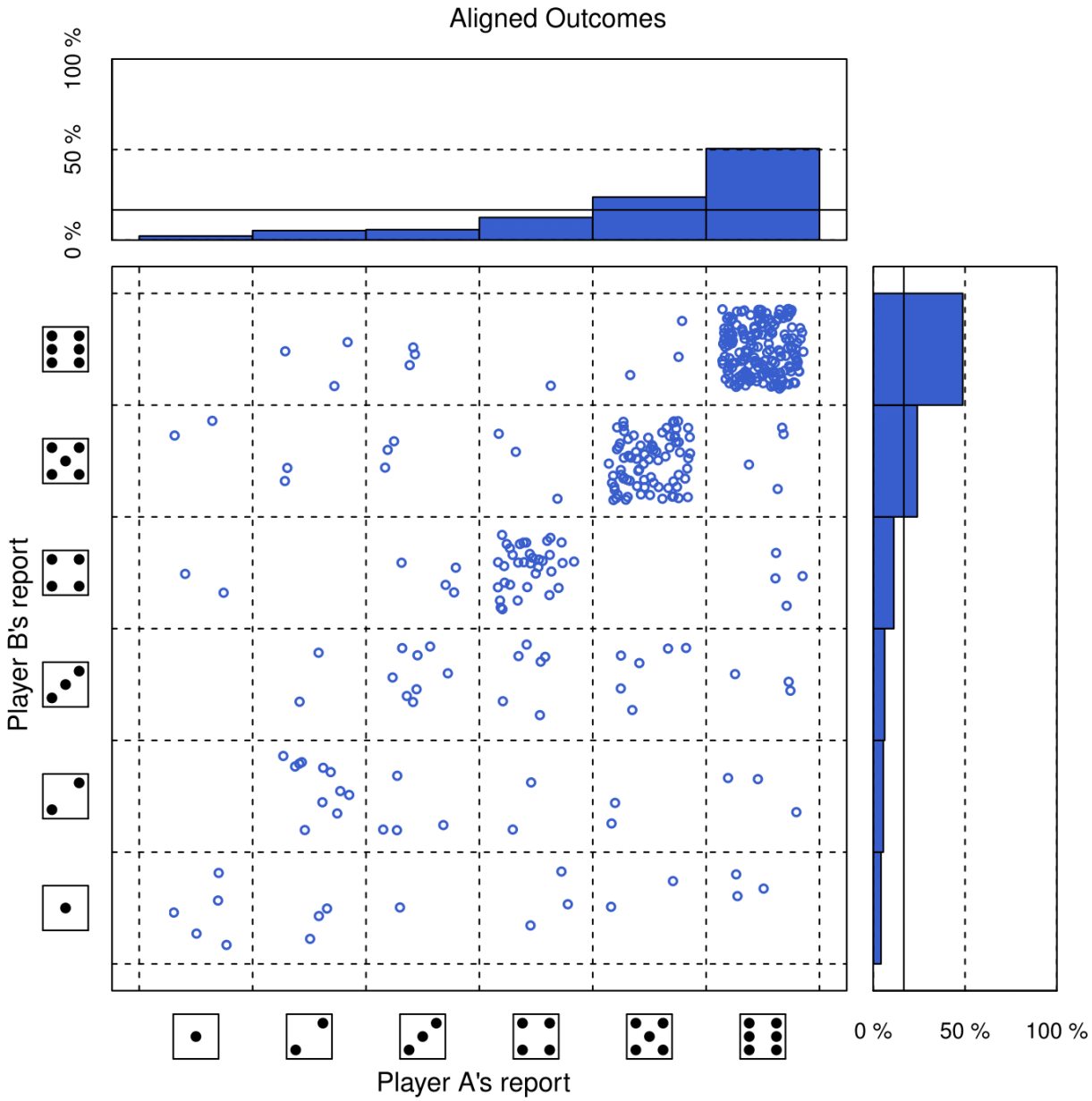


Fig. S3. B-High – original experiment

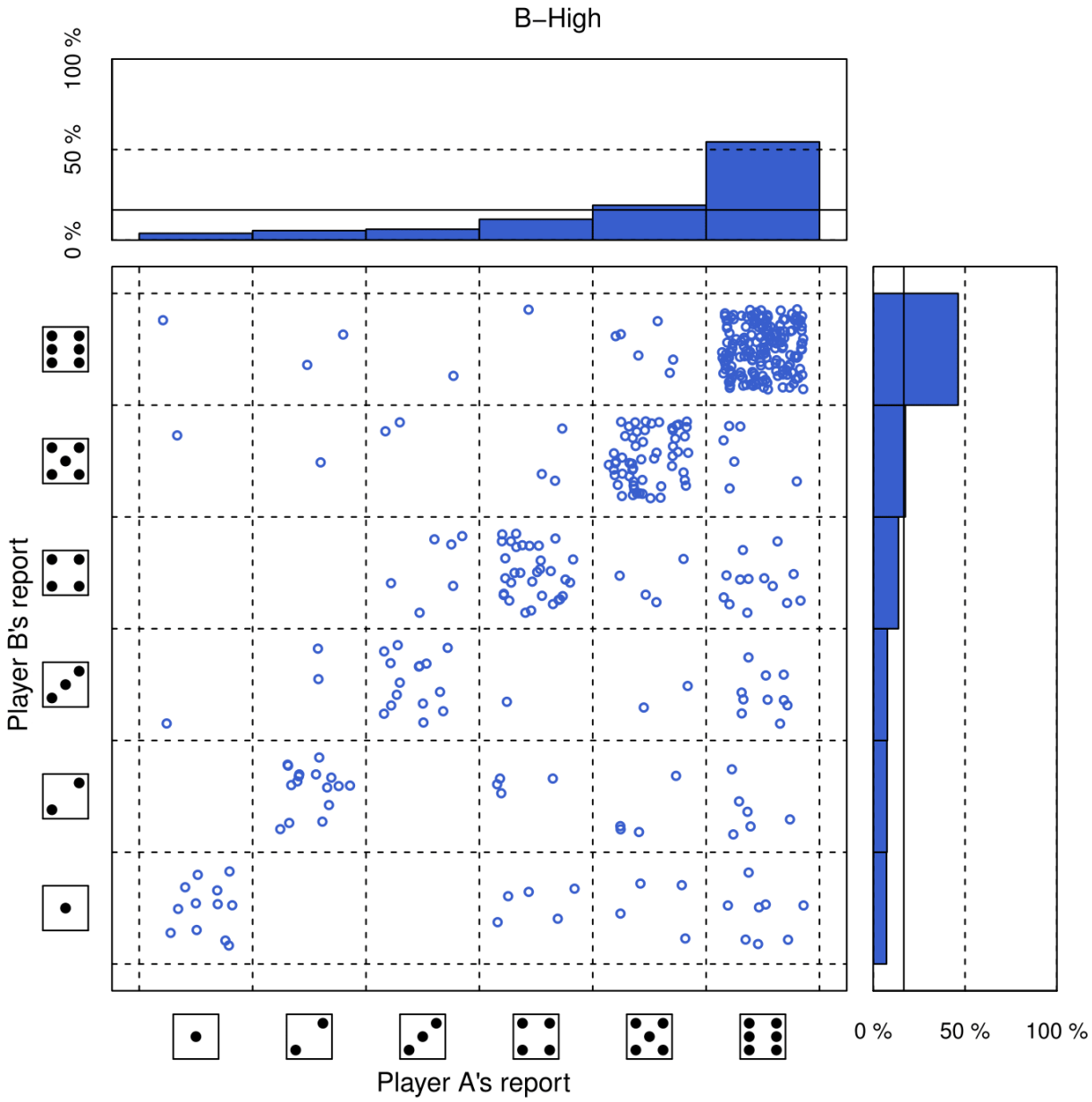


Fig. S4. B-Low – original experiment

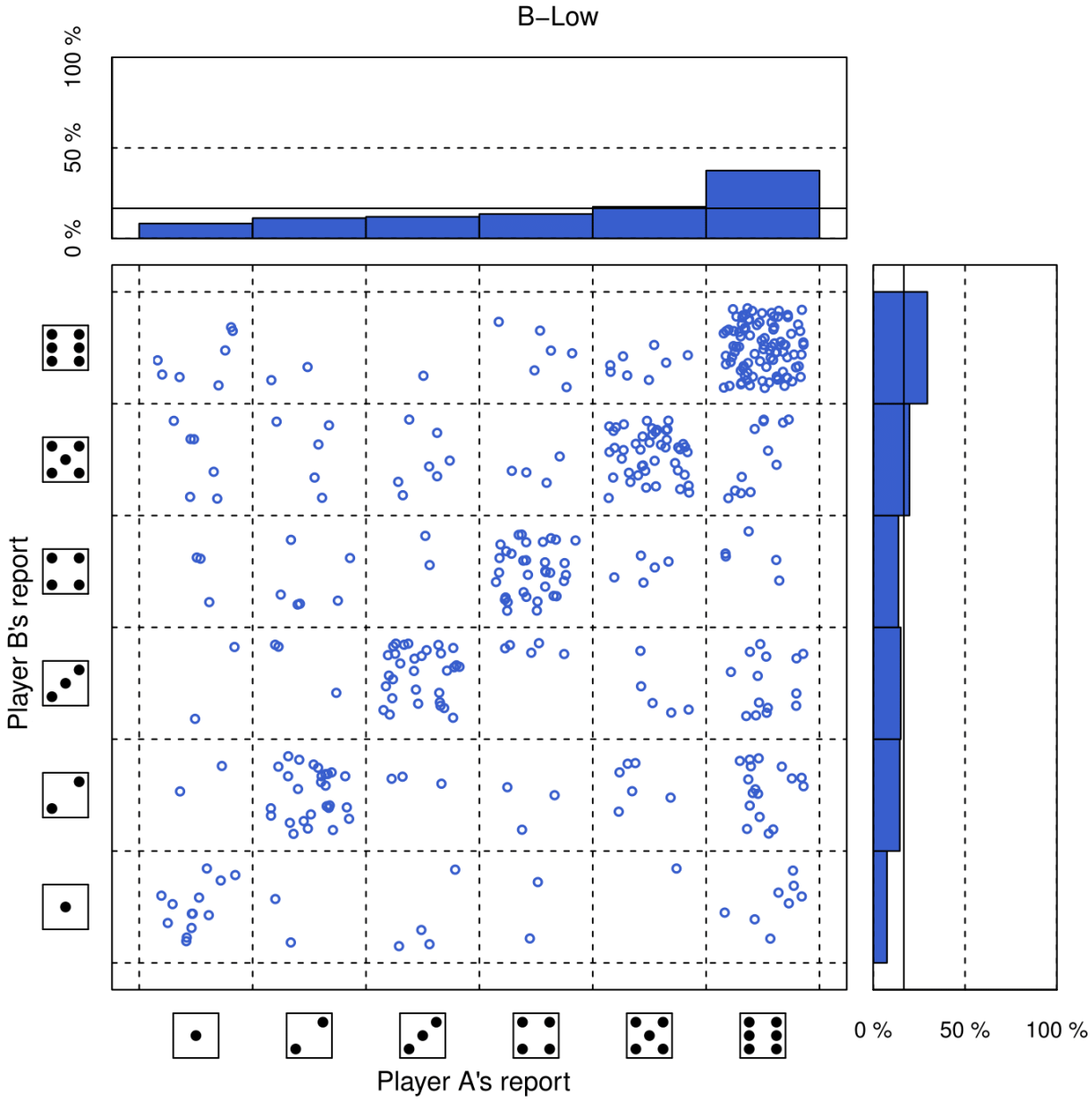


Fig. S5. B-Fixed – original experiment

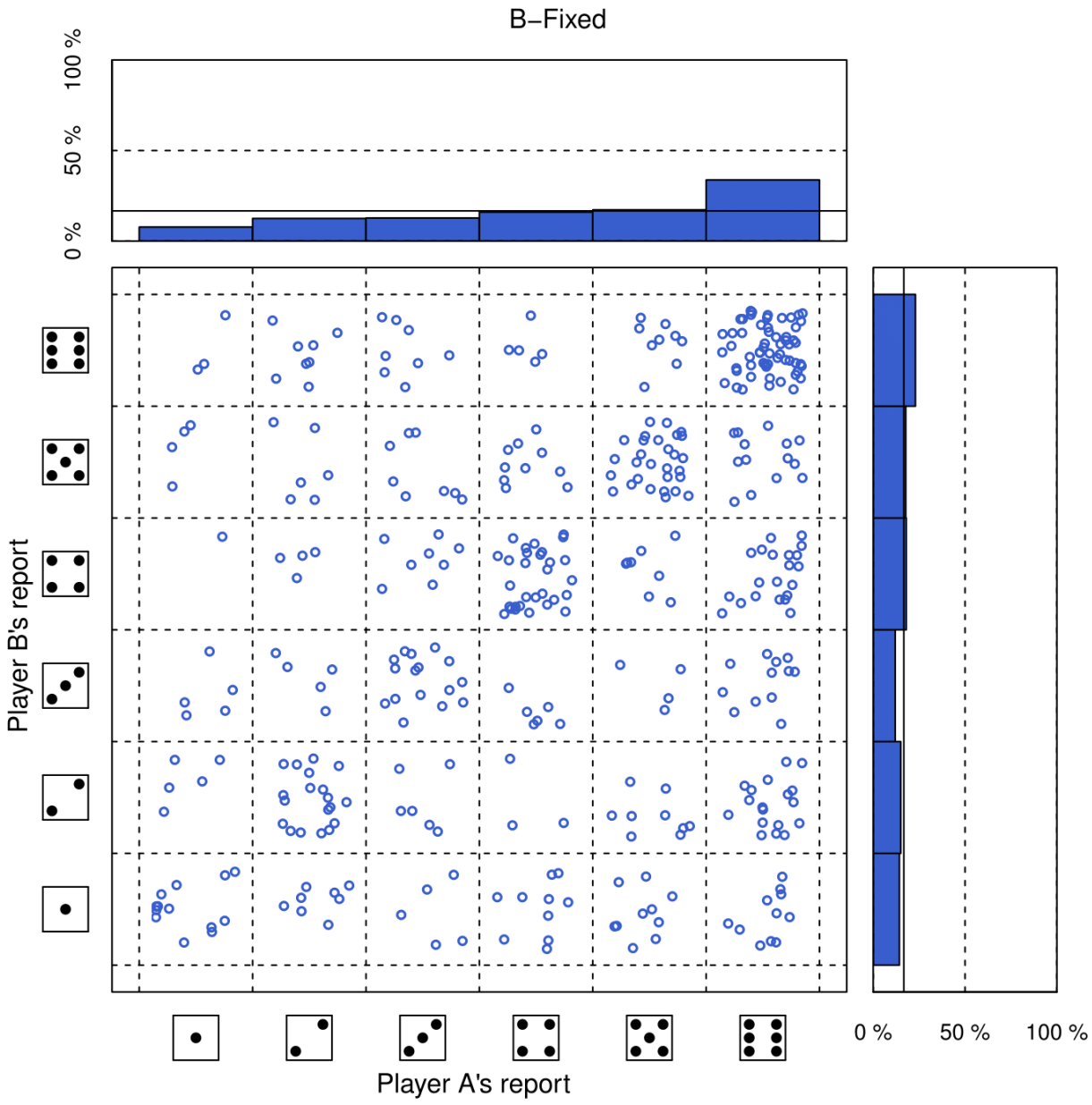


Fig. S6. A-High – original experiment

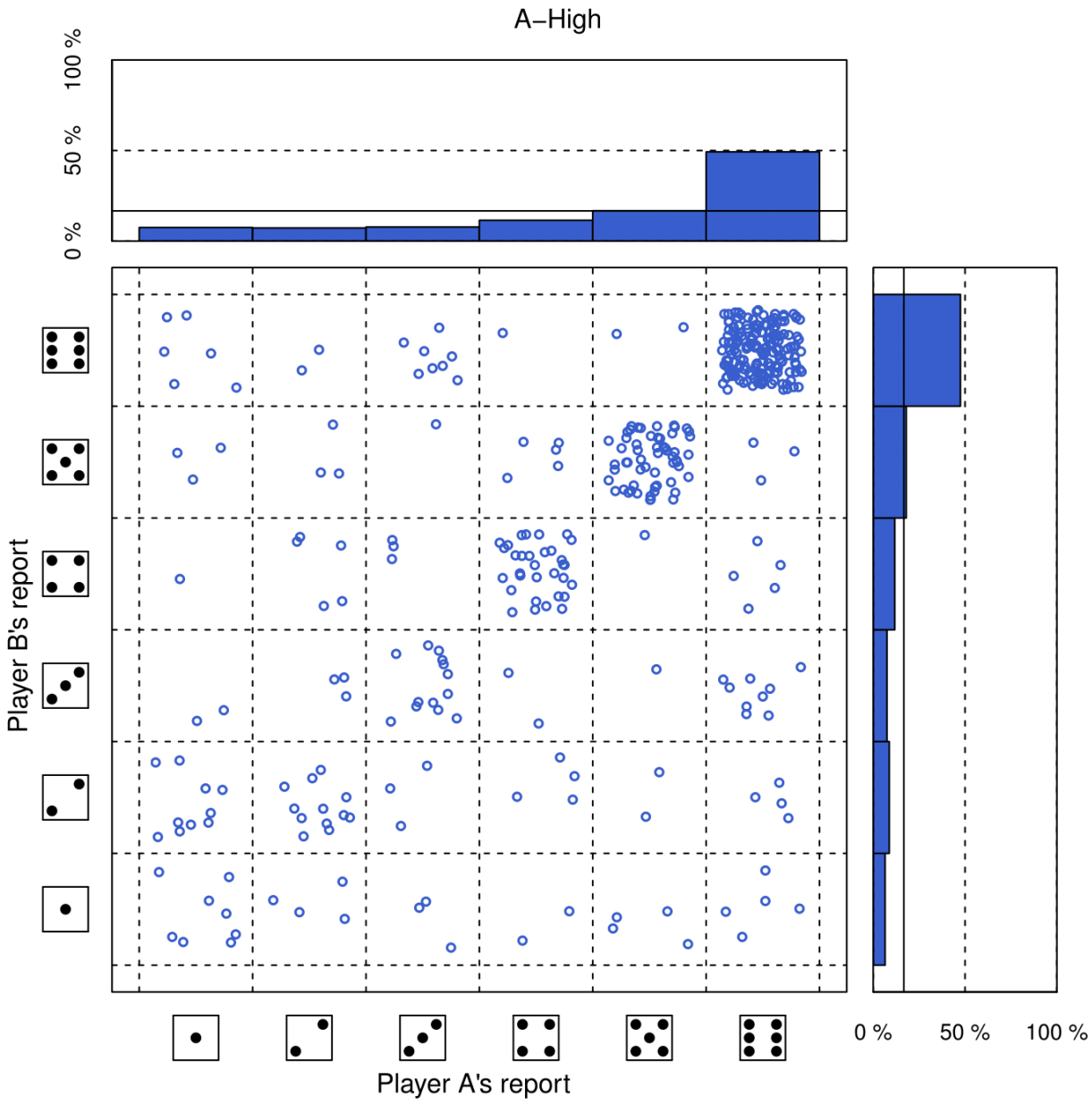


Fig. S7. A-Low – original experiment

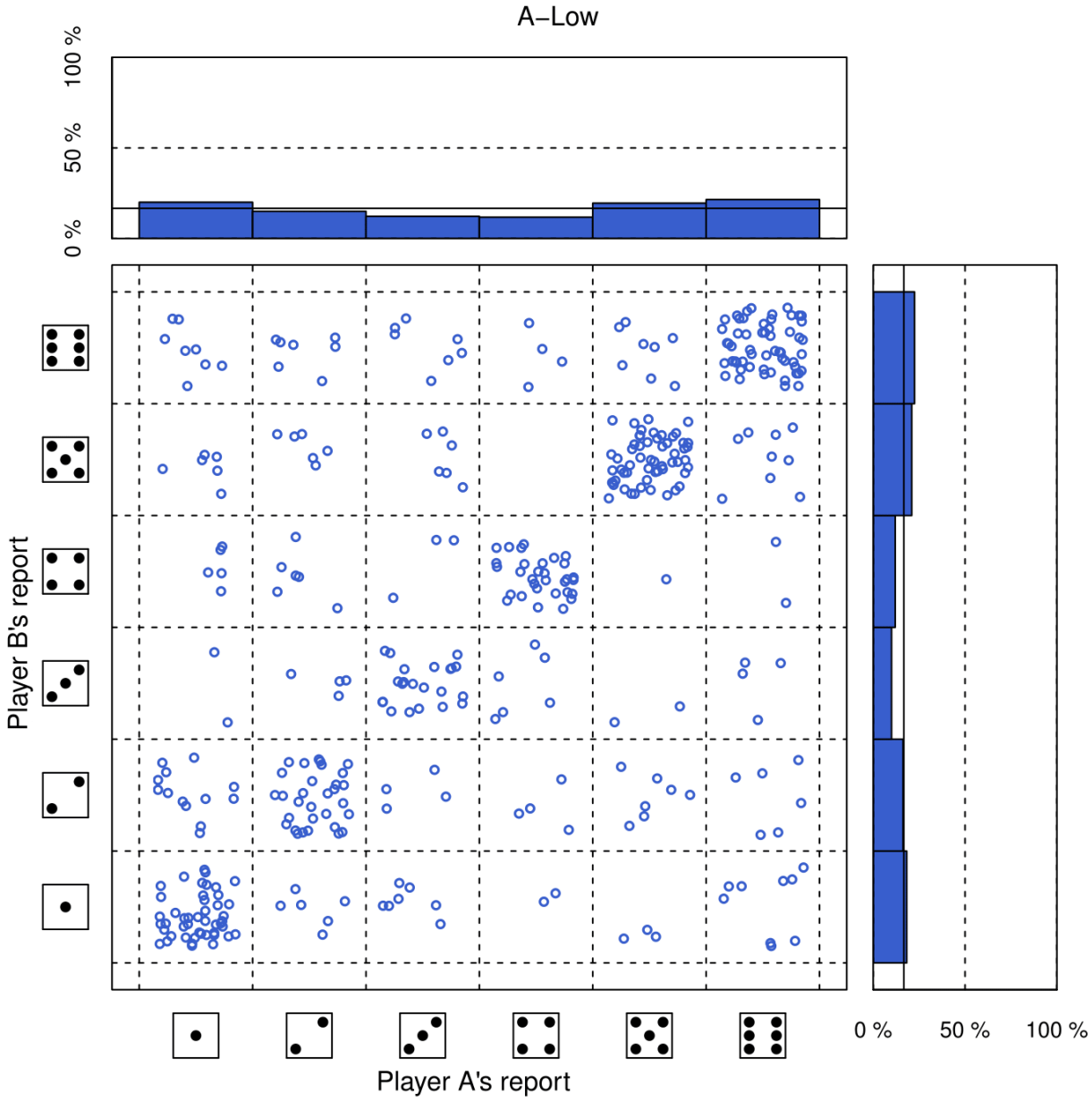


Fig. S8. A-Fixed – original experiment

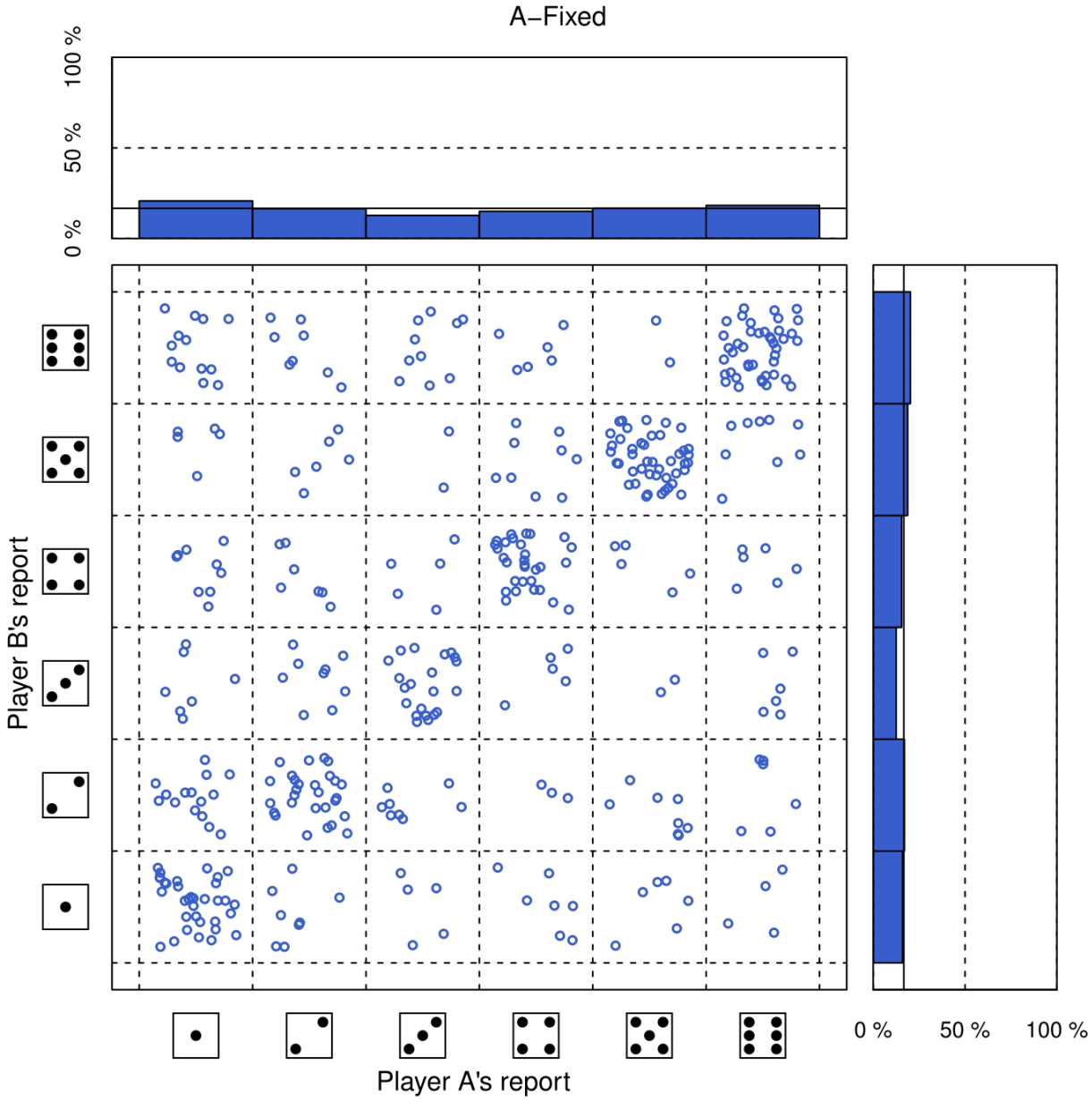
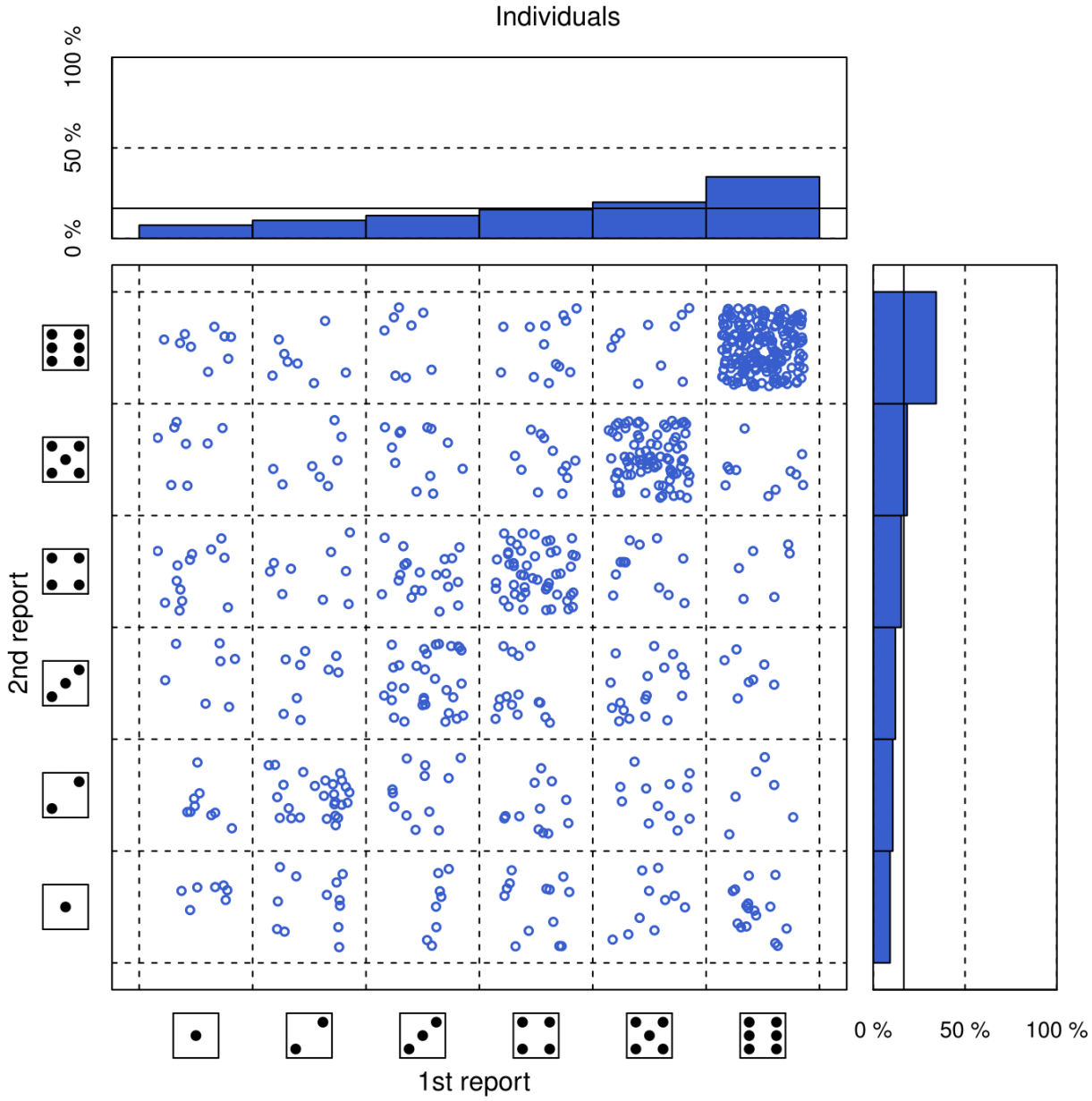


Fig. S9. Individuals – original experiment



2.2 All decisions – original experiment

The following figures display all decisions made by each dyad (or individual) that took part in the experiment.

Fig. S10. Aligned Outcomes – original experiment

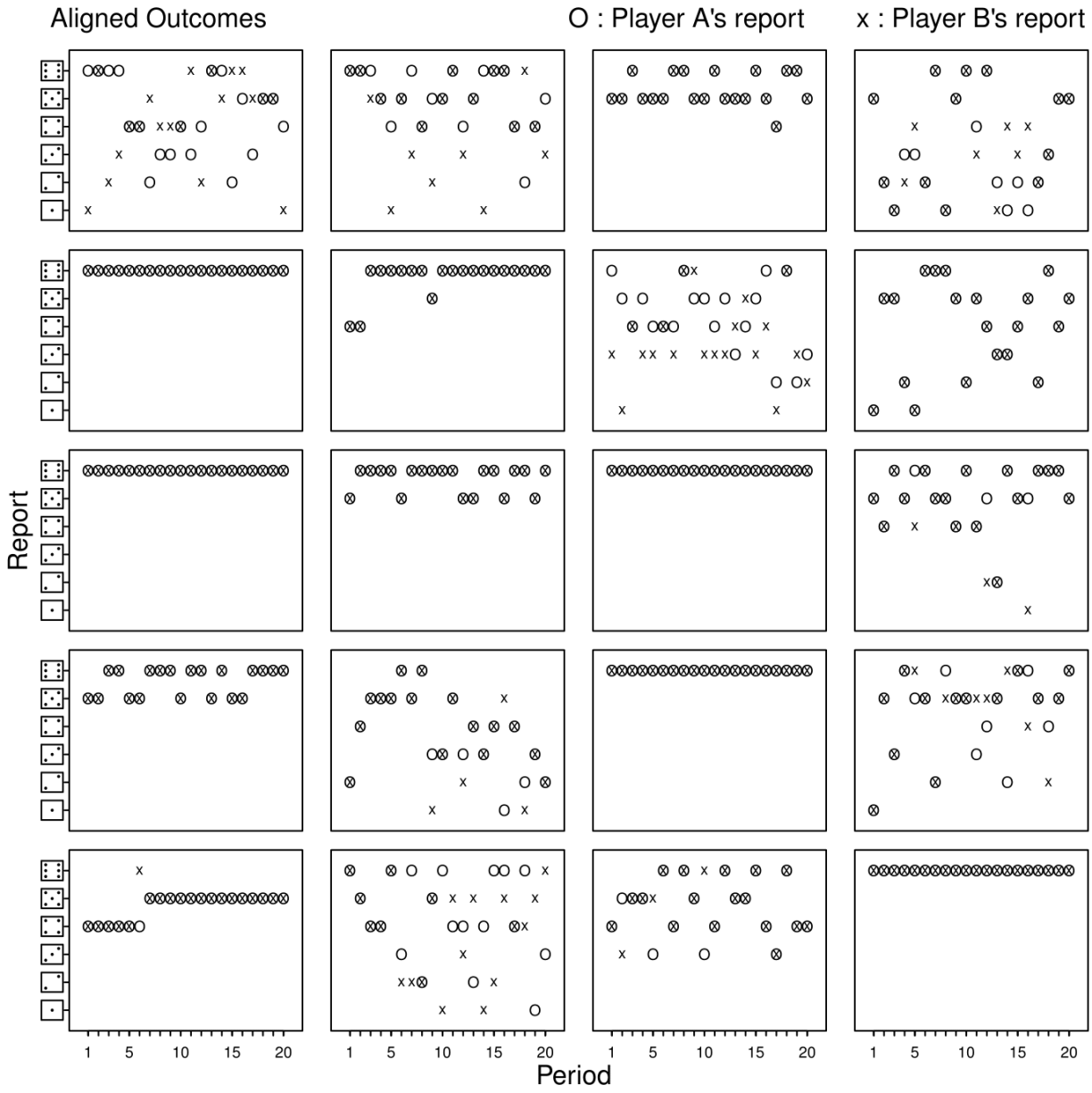


Fig. S11. B-High – original experiment

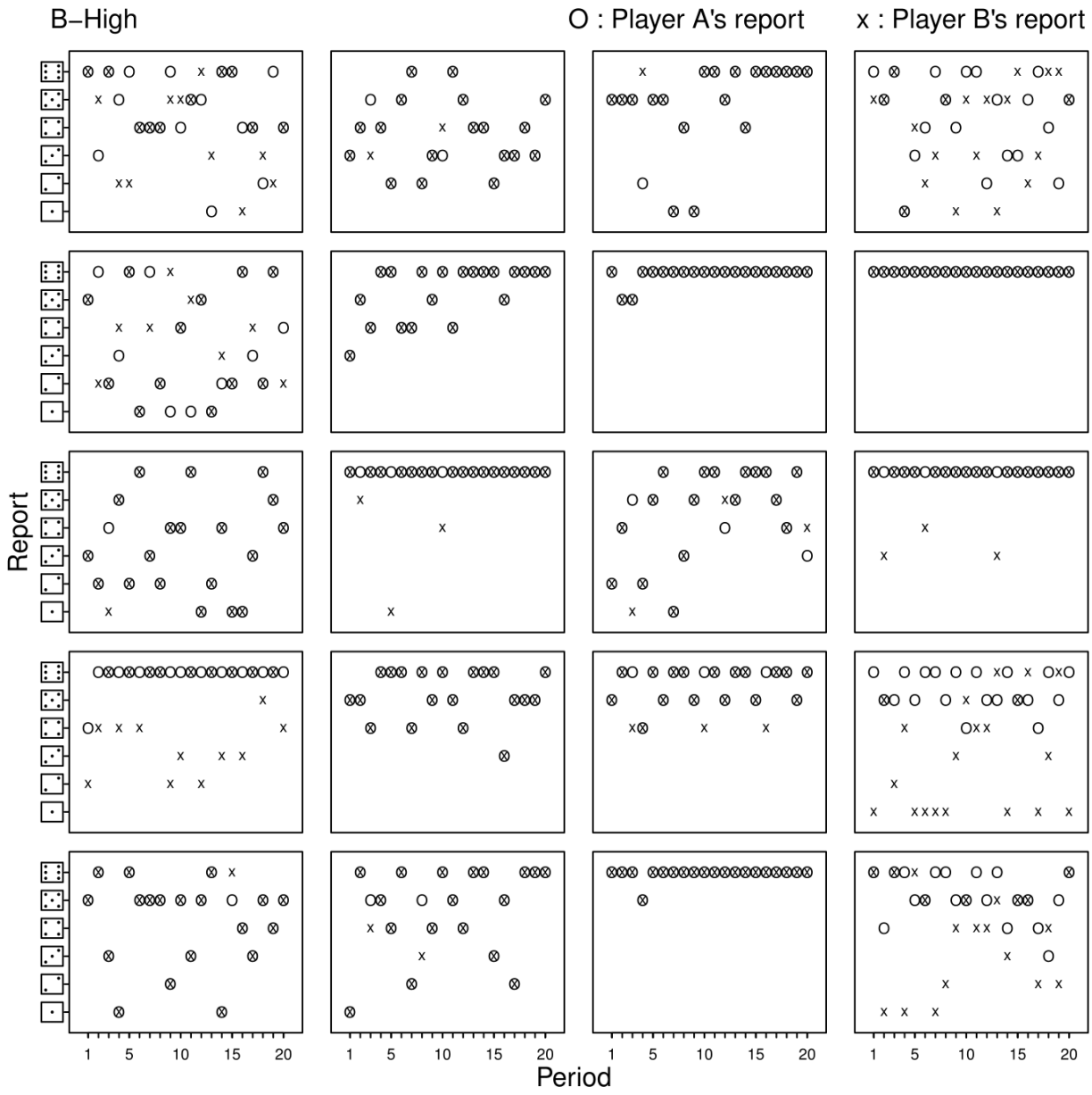


Fig. S12. B-Low – original experiment

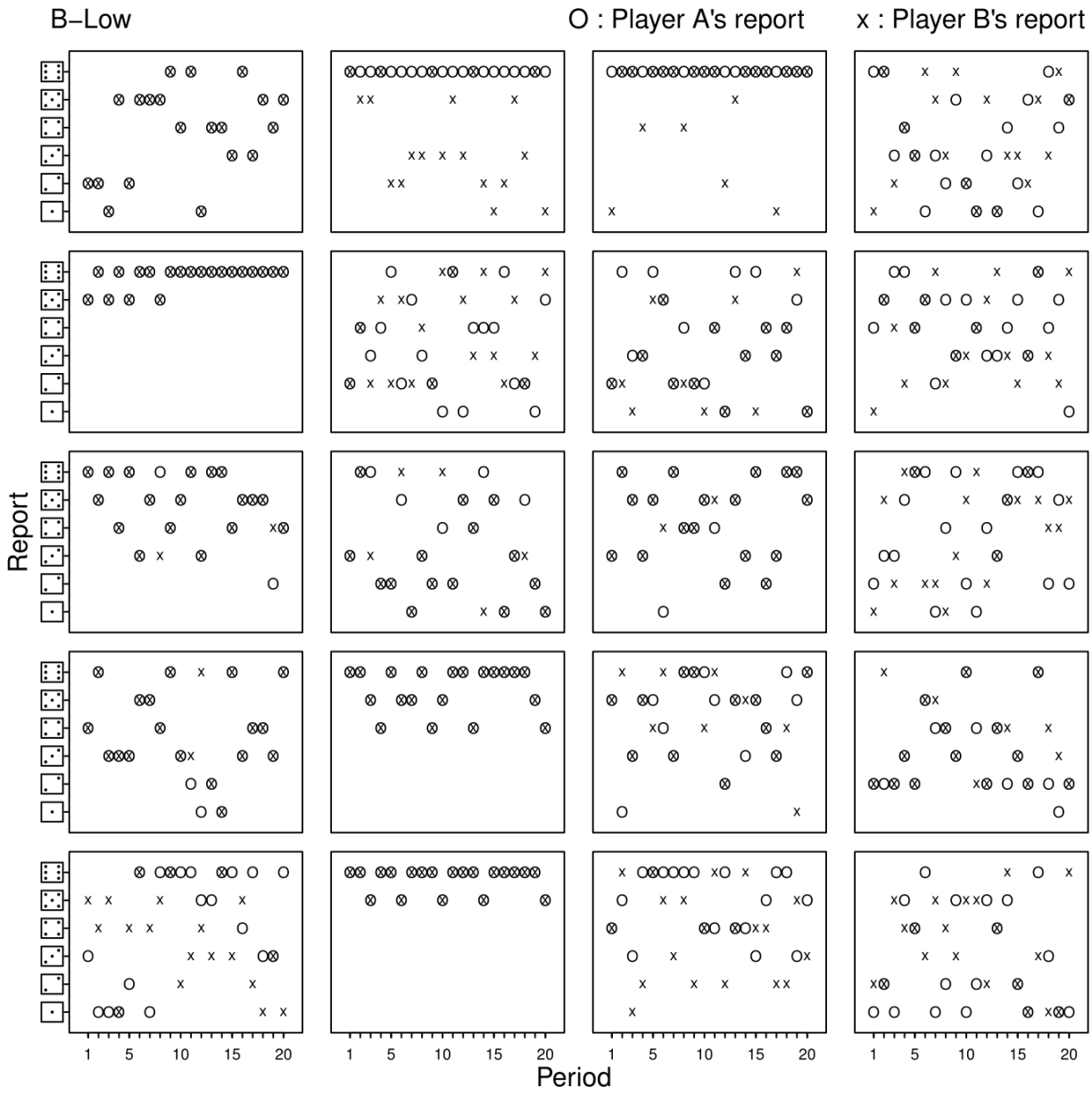


Fig. S13. B-Fixed – original experiment

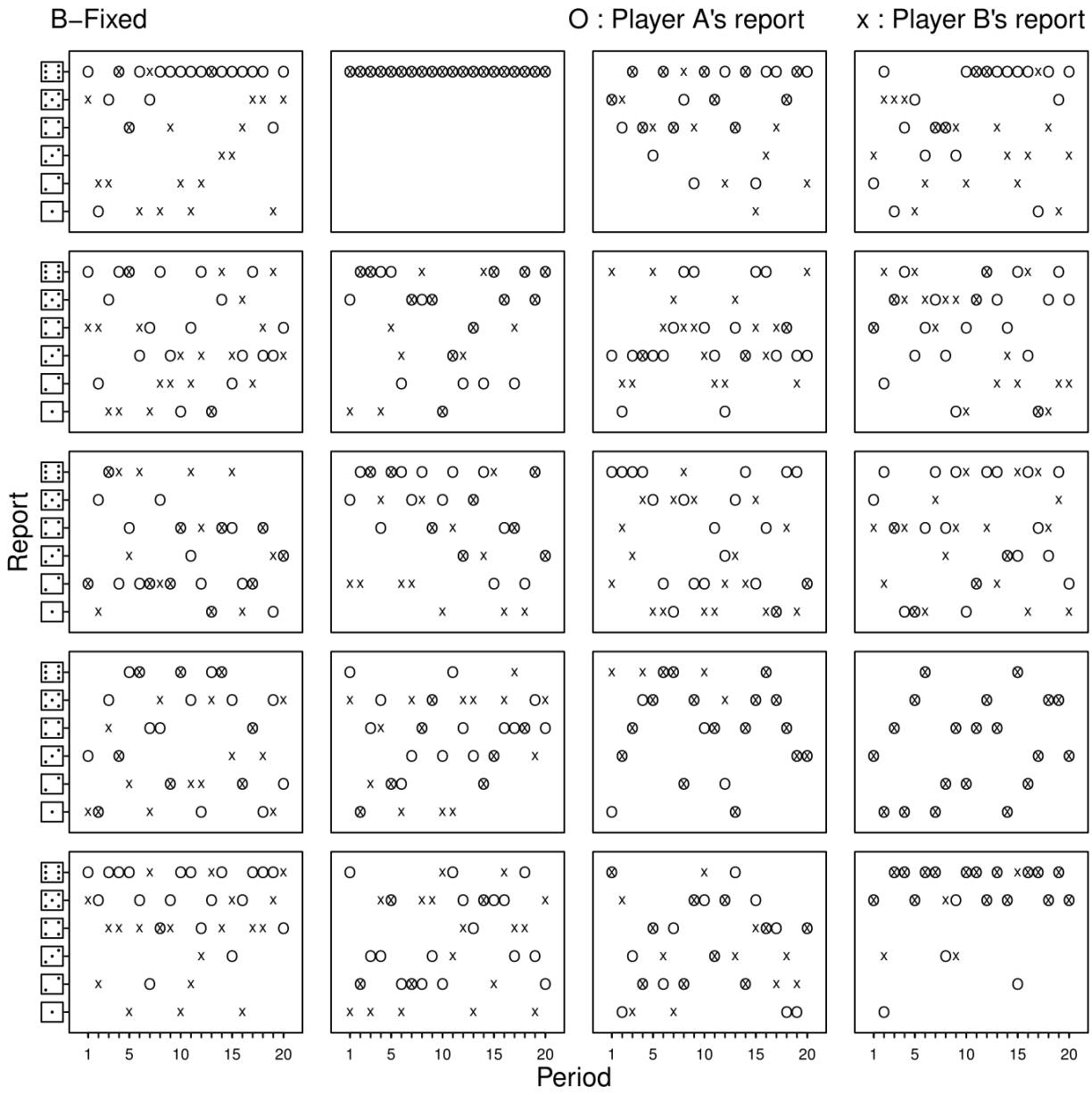


Fig. S14. A-High – original experiment

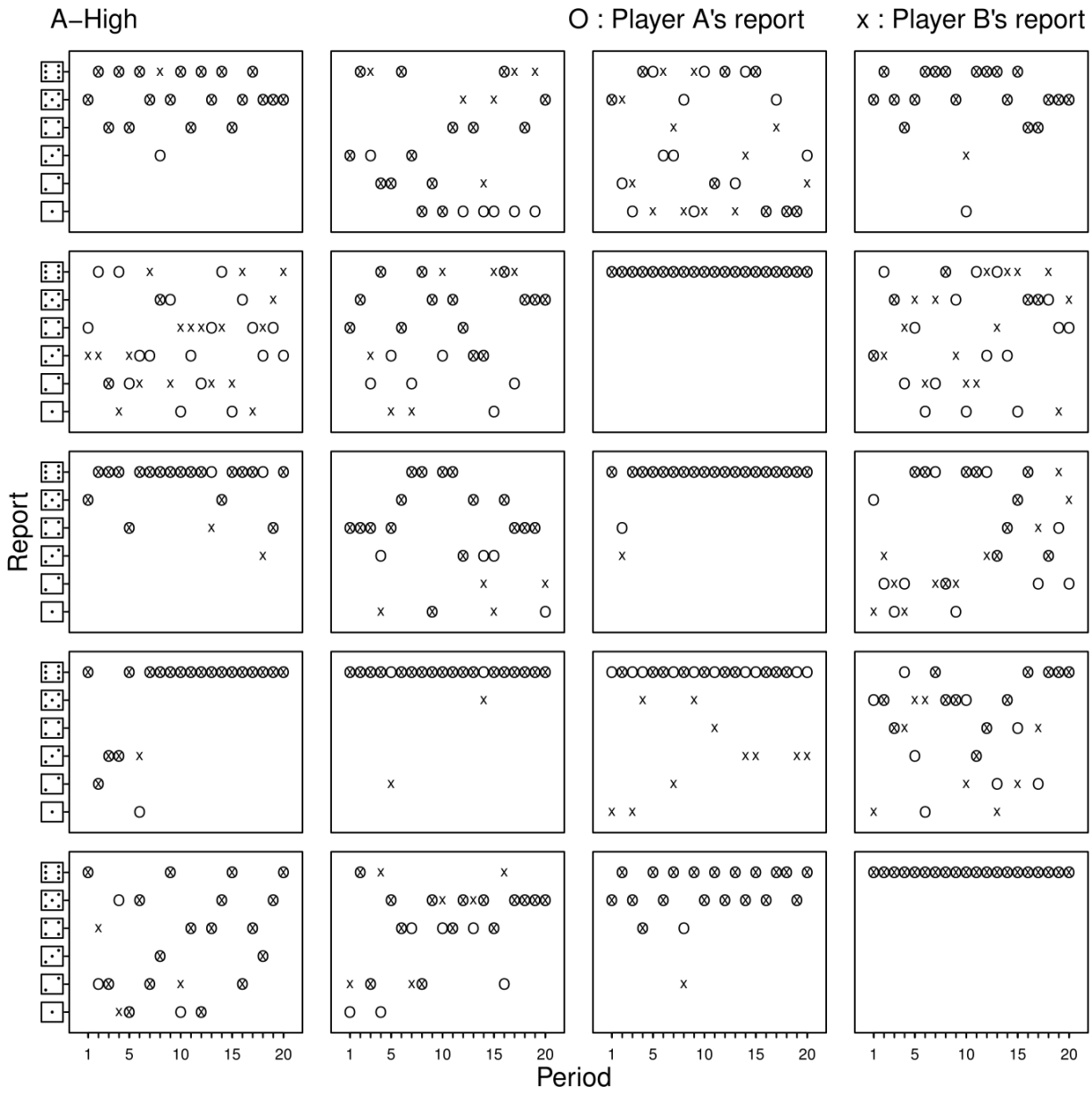


Fig. S15. A-Low – original experiment

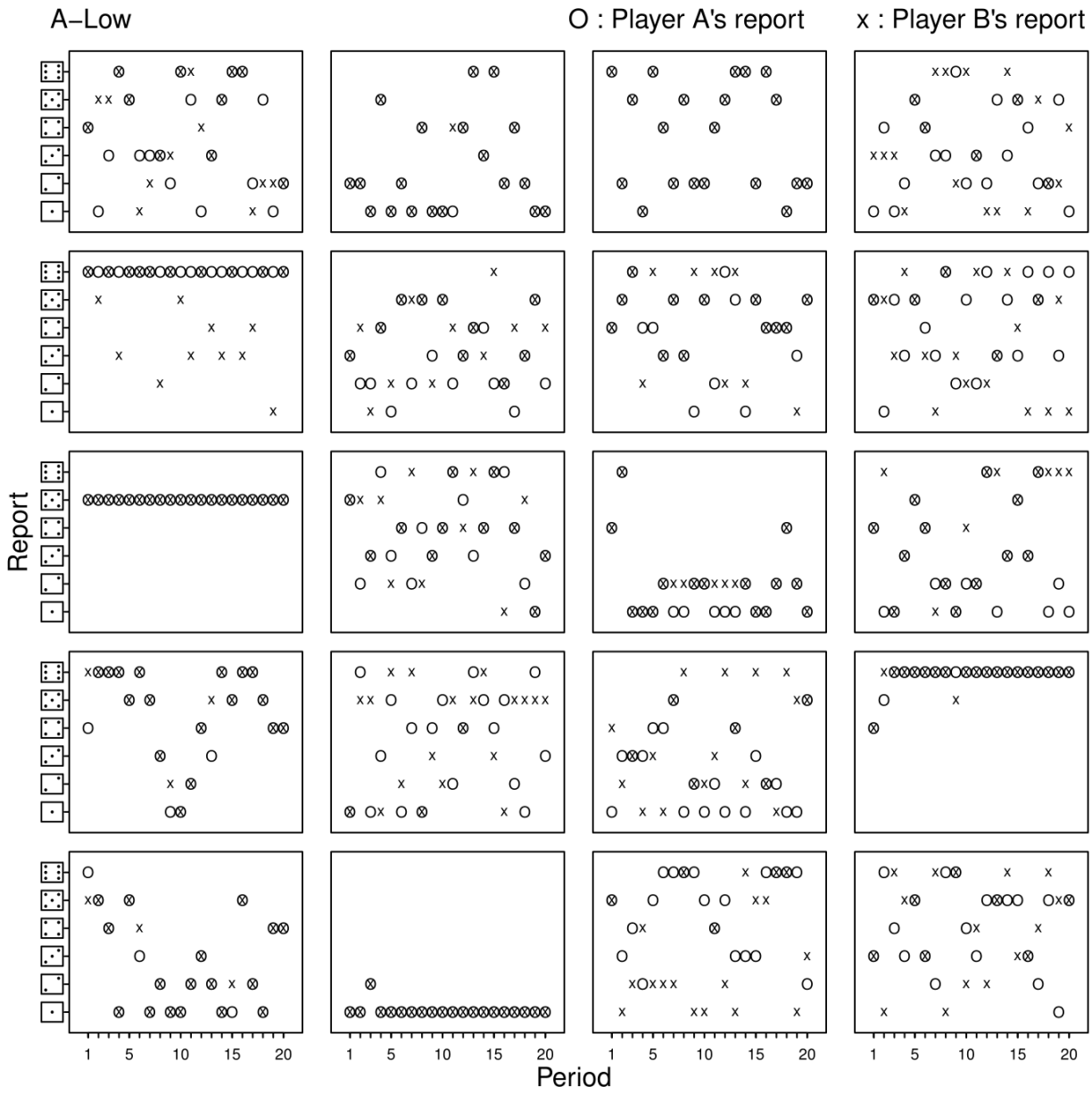


Fig. S16. A-Fixed – original experiment

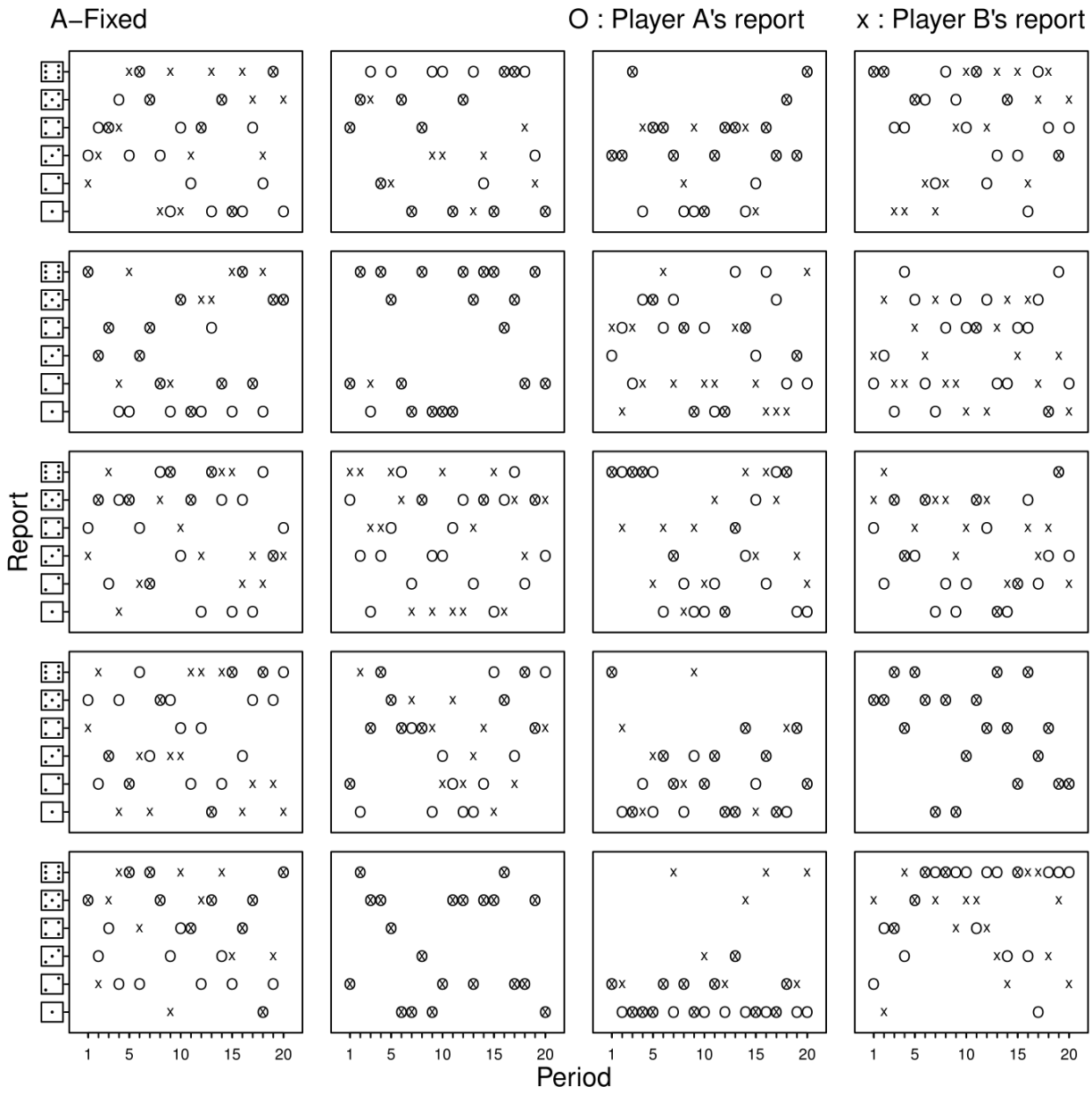
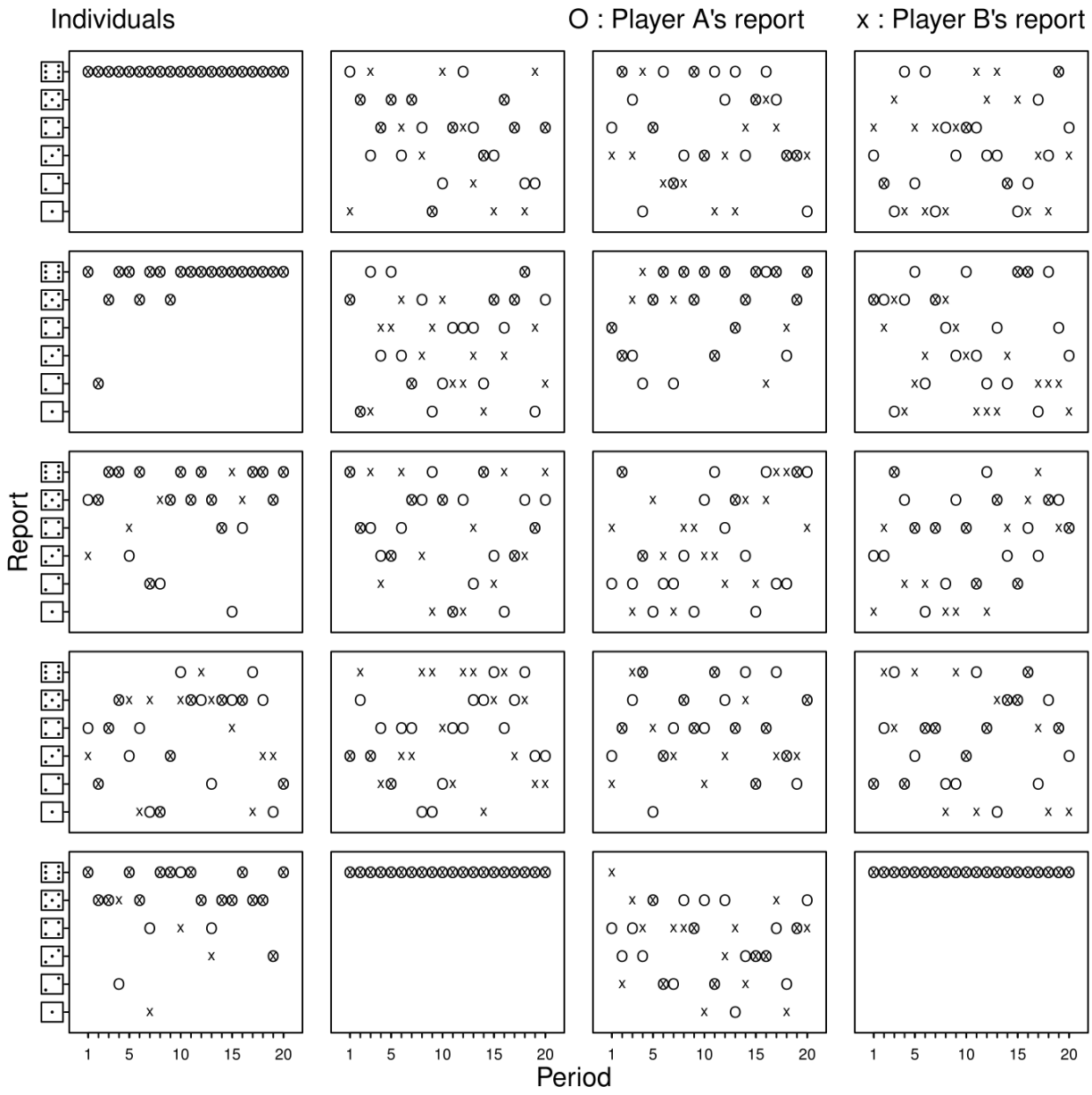
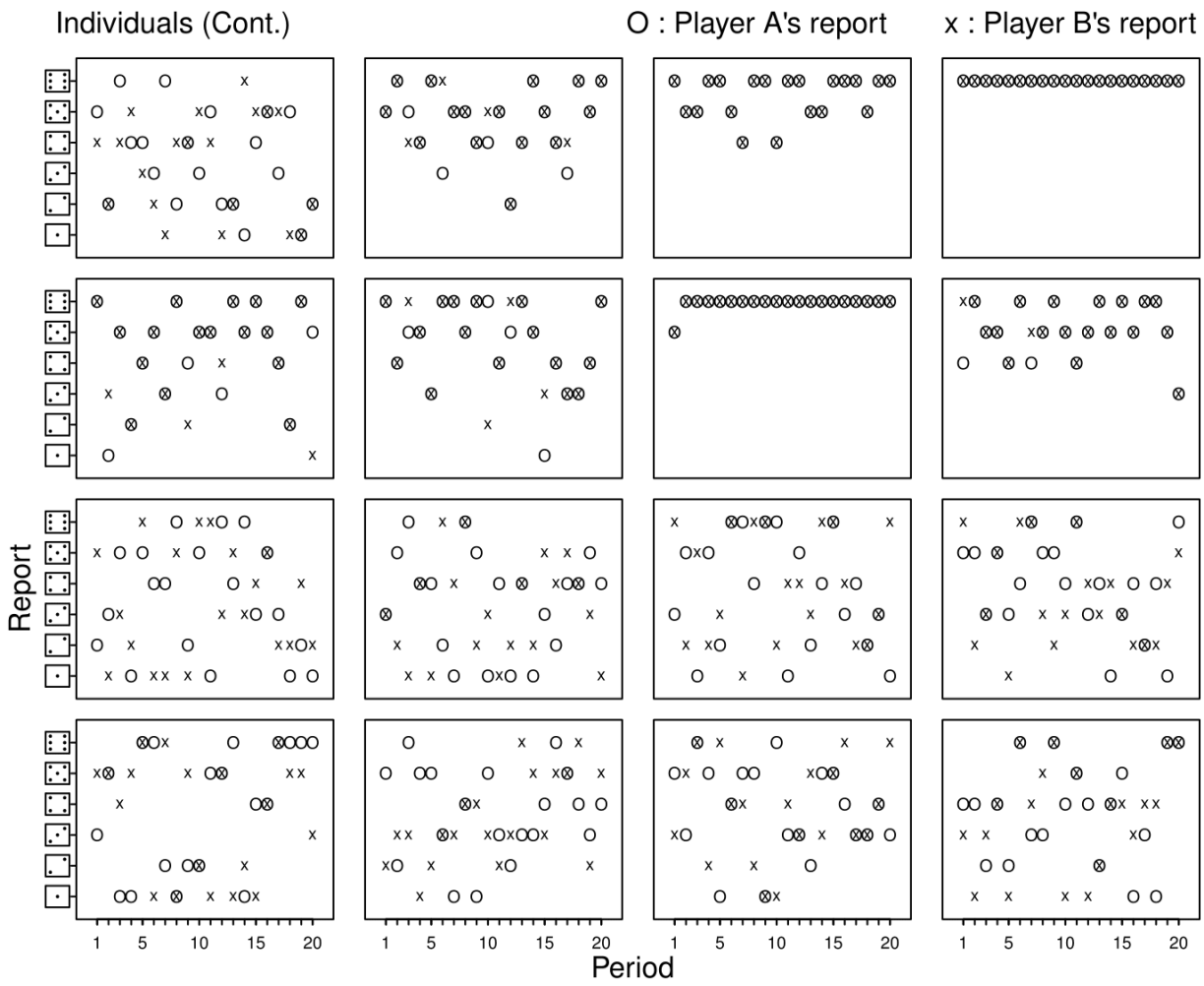


Fig. S17. Individuals – original experiment




Individuals (Cont.)
O : Player A's report
x : Player B's report
Report
Period
1
5
10
15
20

2.3 Distribution of reported outcomes – robustness experiment

Fig. S18. Replication – Aligned Outcomes – robustness experiment

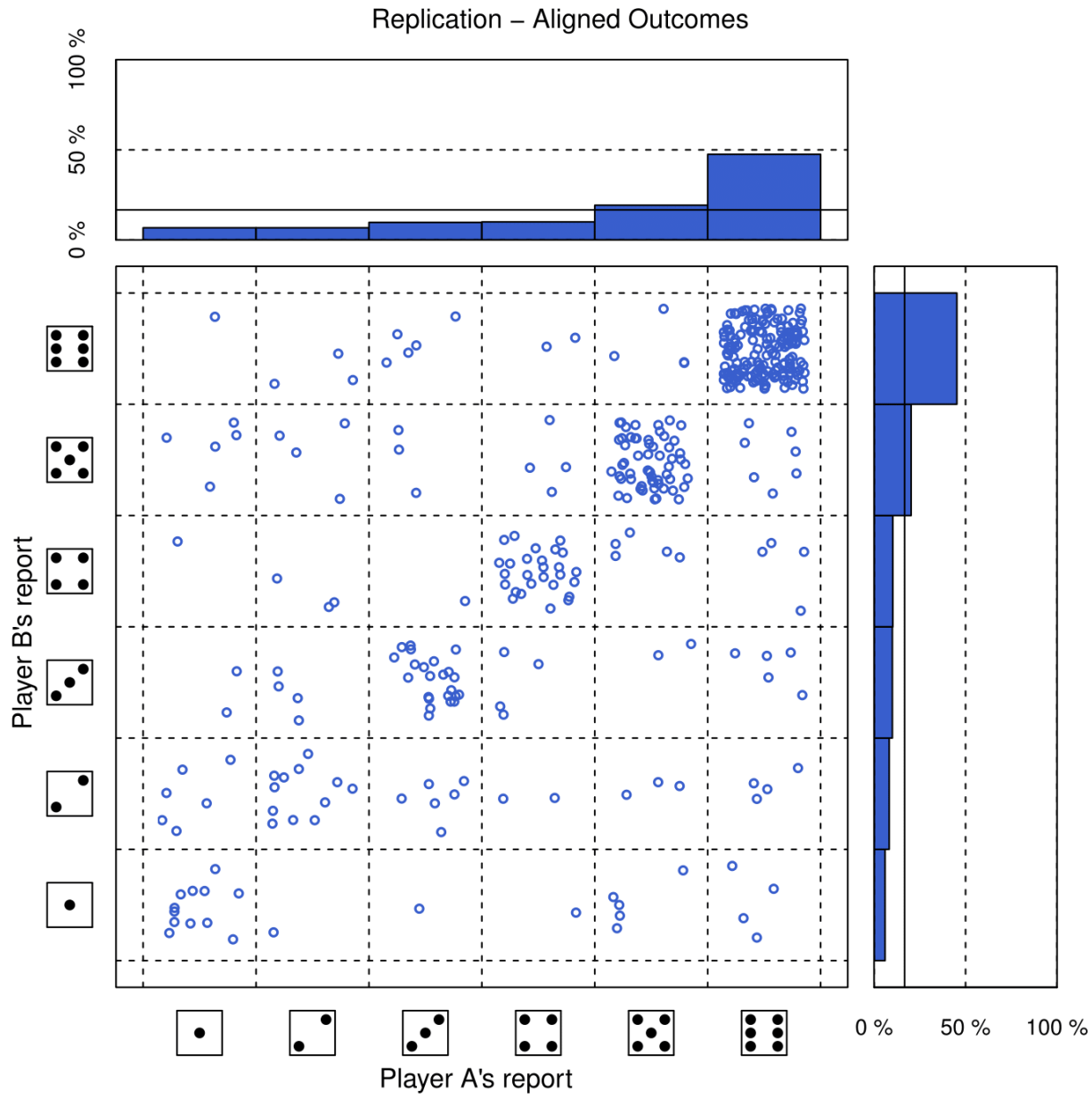


Fig. S19. Replication – B-fixed – robustness experiment

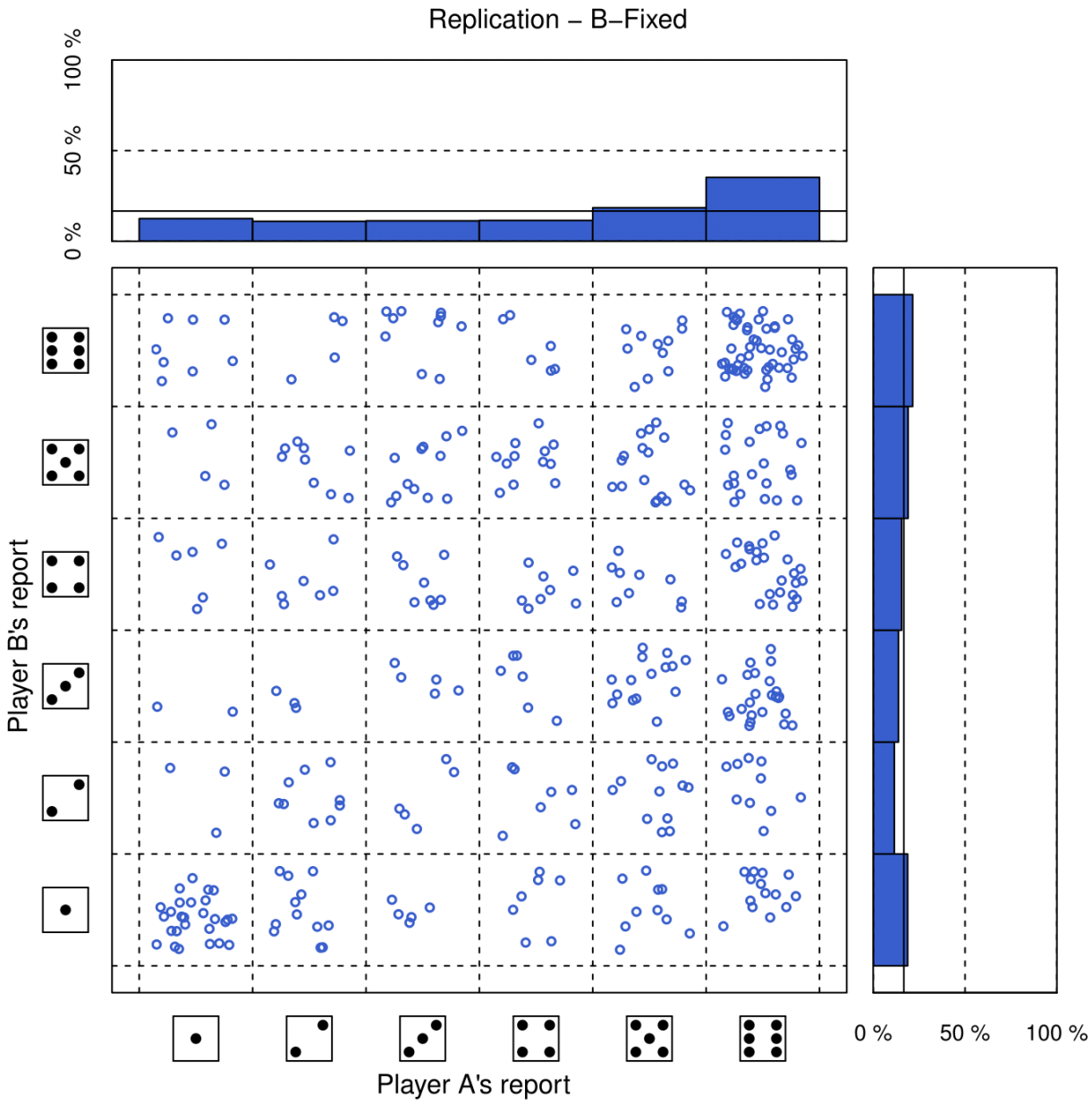


Fig. S20. Multiplication – Aligned outcomes – robustness experiment

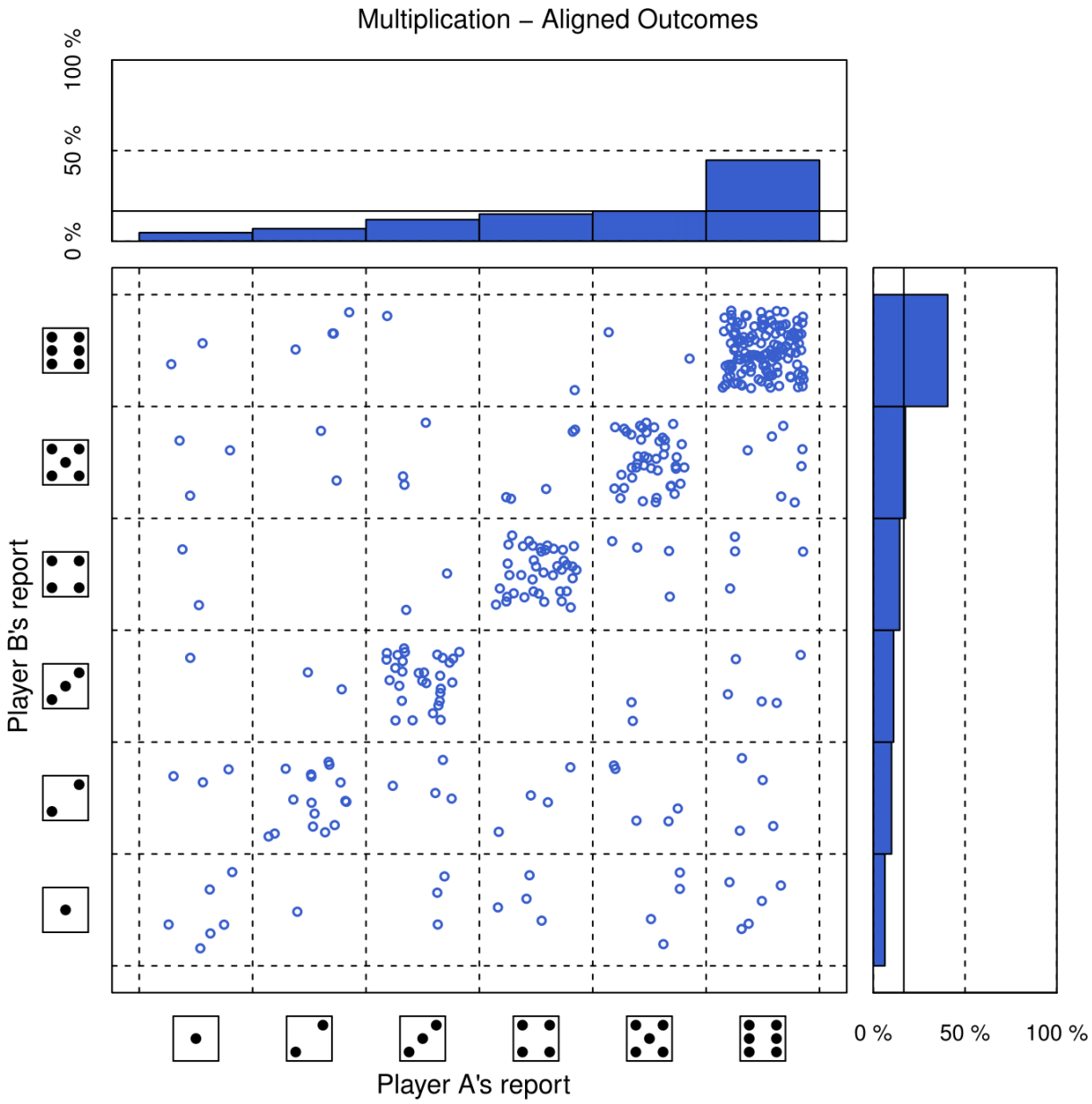


Fig. S21. Multiplication – B-Fixed – robustness experiment

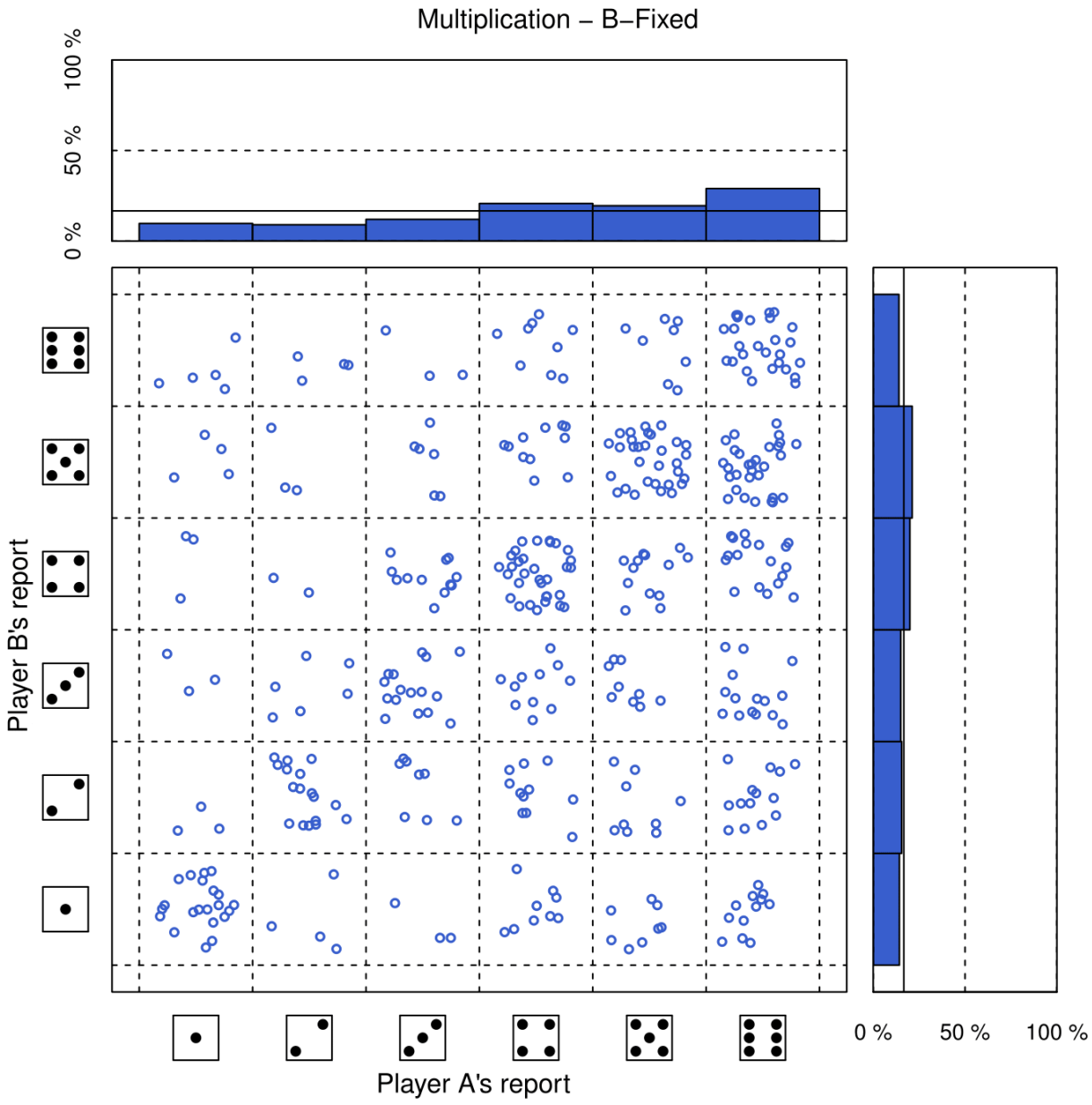


Fig. S22. Addition – Aligned Outcomes – robustness experiment

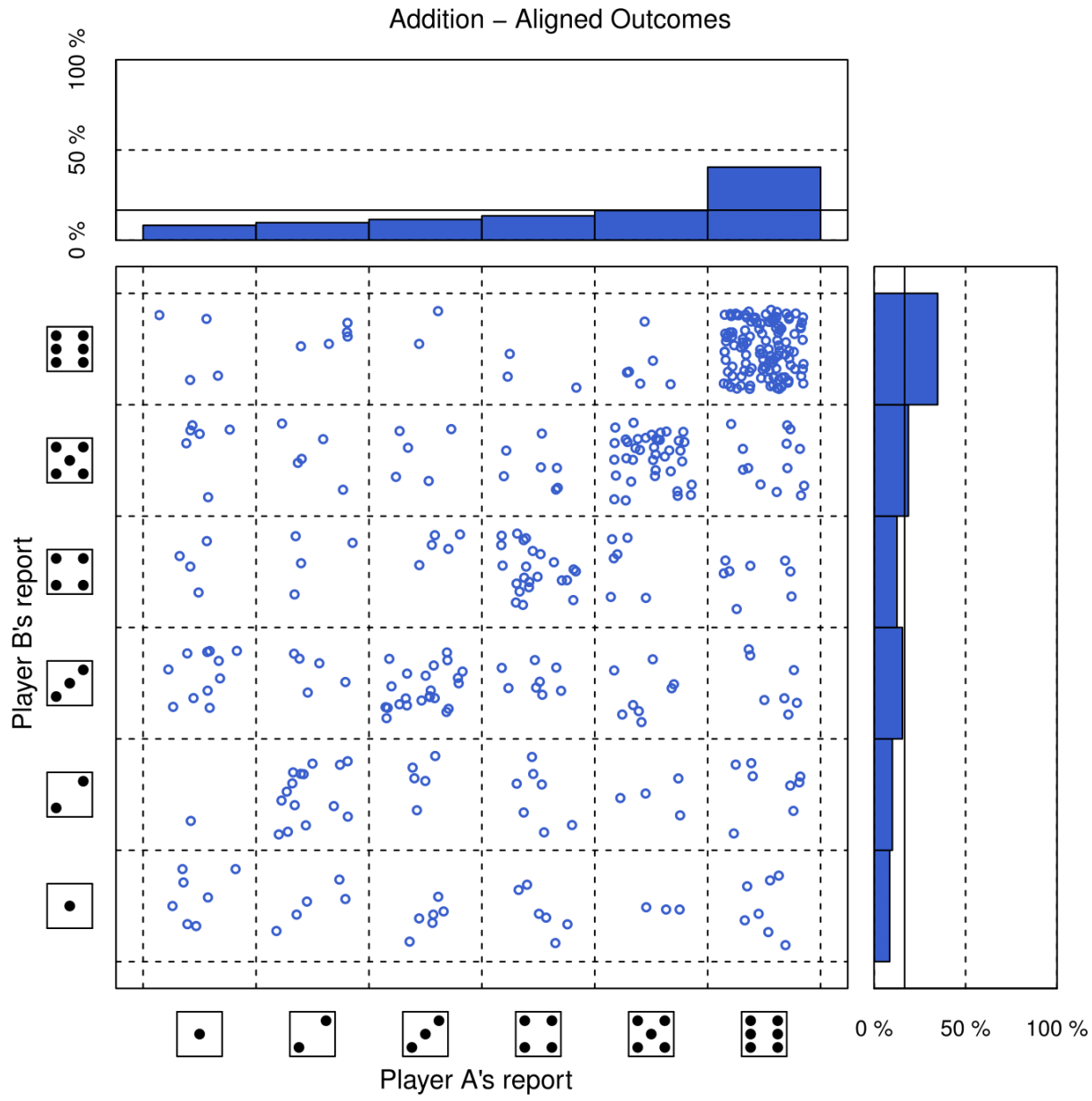
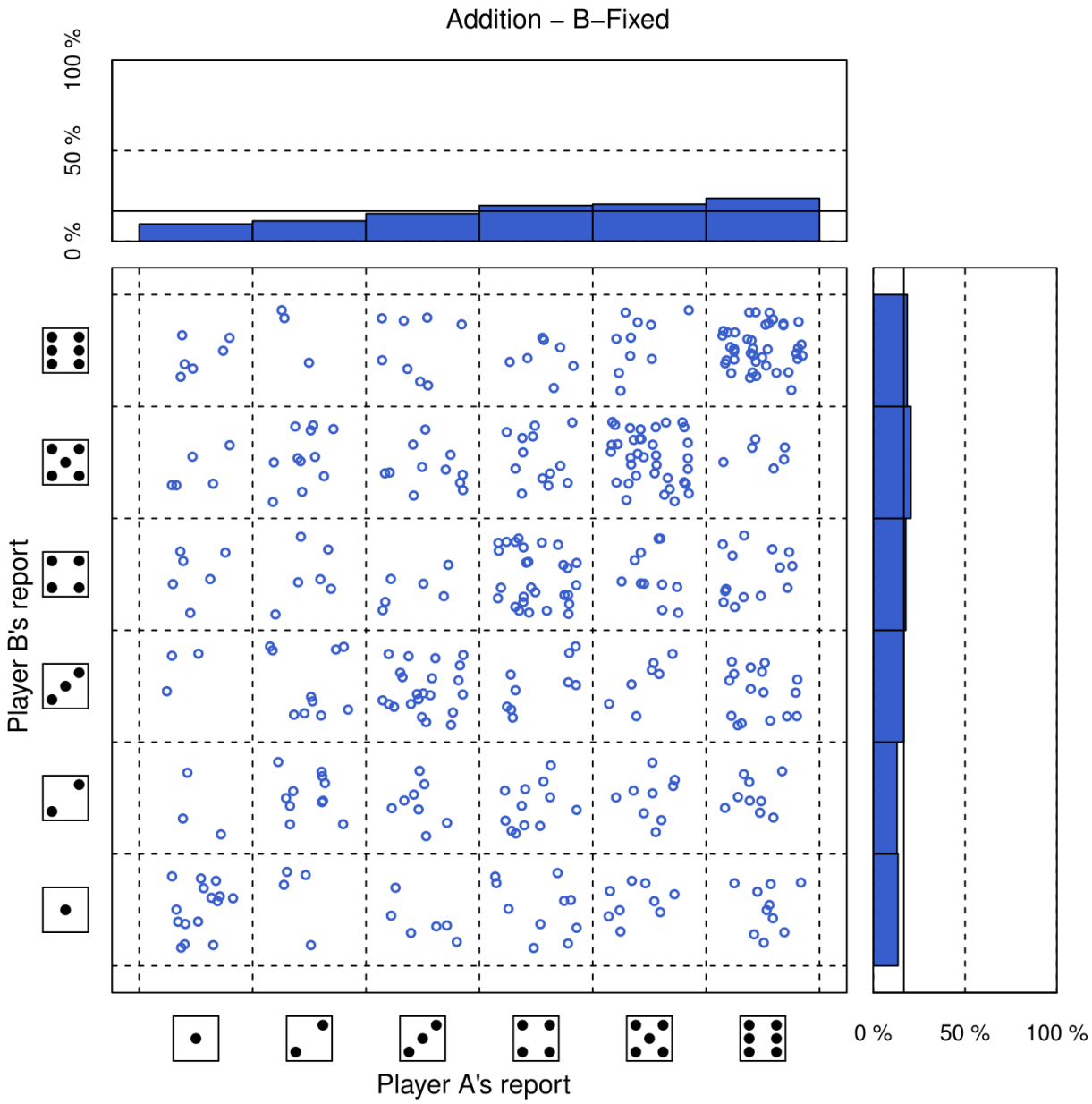


Fig. S23. Addition – B-fixed – robustness experiment



2.4 All decisions – robustness experiment

Fig. S24. Replication – Aligned Outcomes – robustness experiment

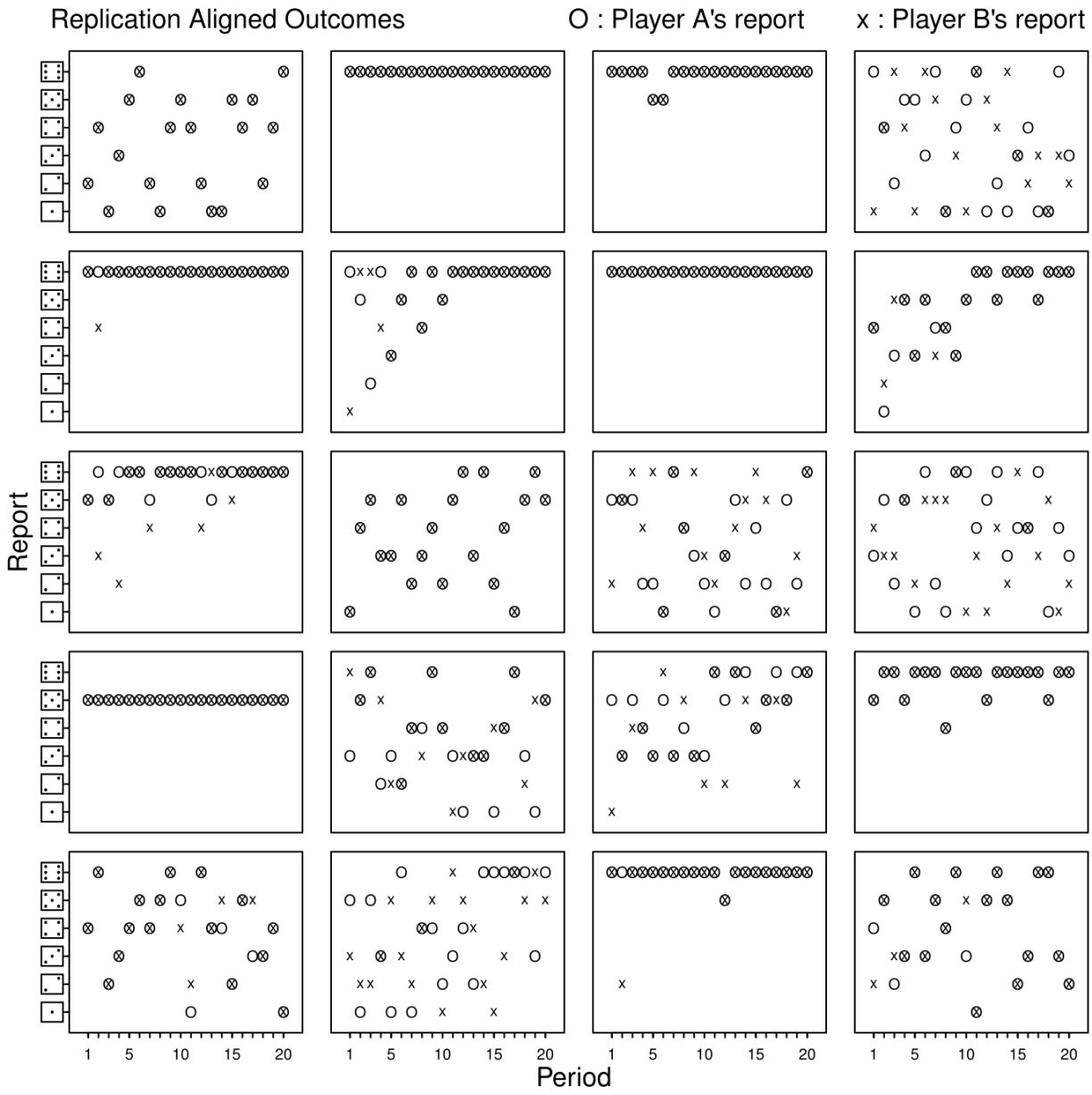


Fig. S25. Replication – B-fixed – robustness experiment

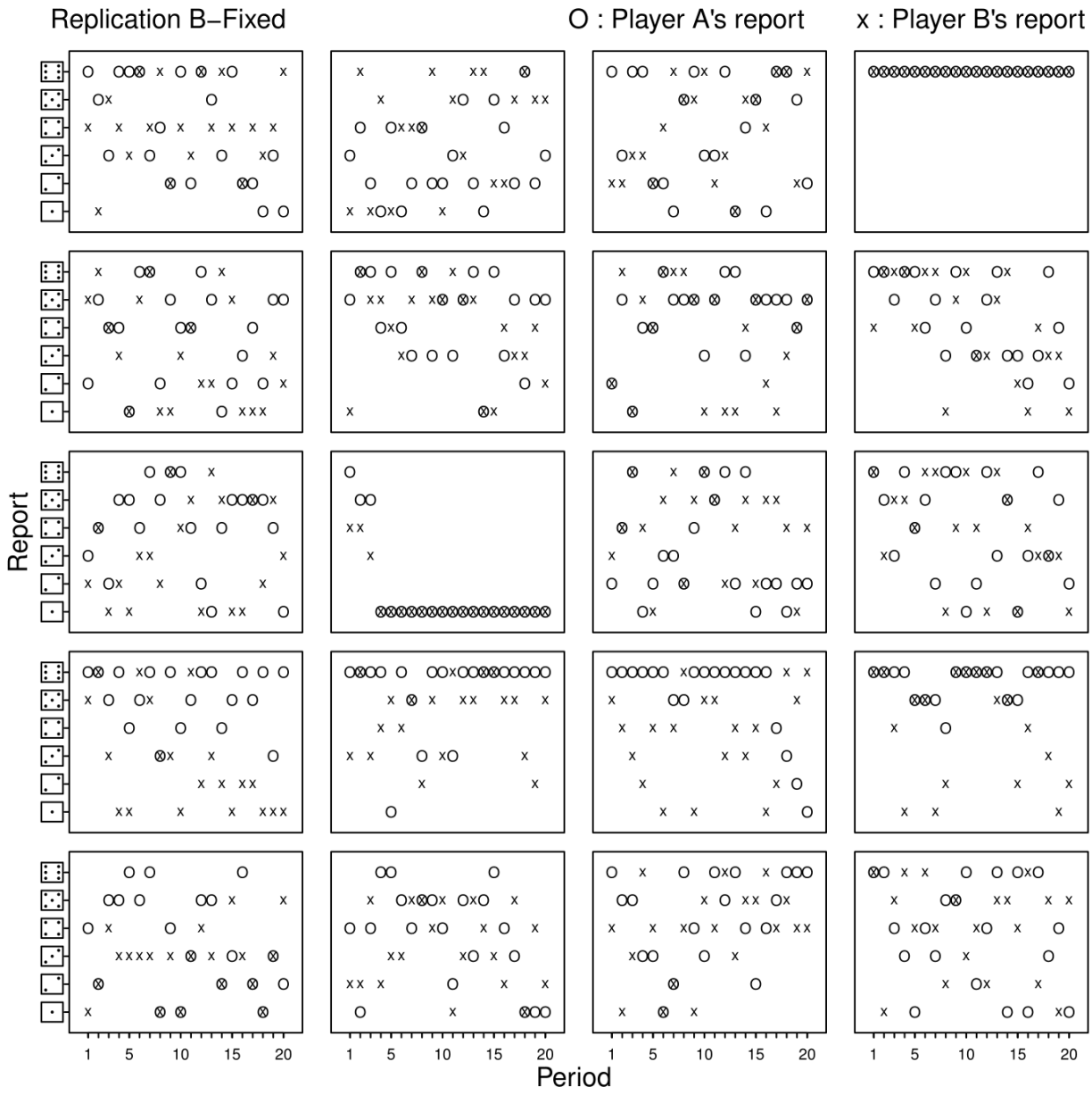


Fig. S26. Multiplication – Aligned outcomes – robustness experiment

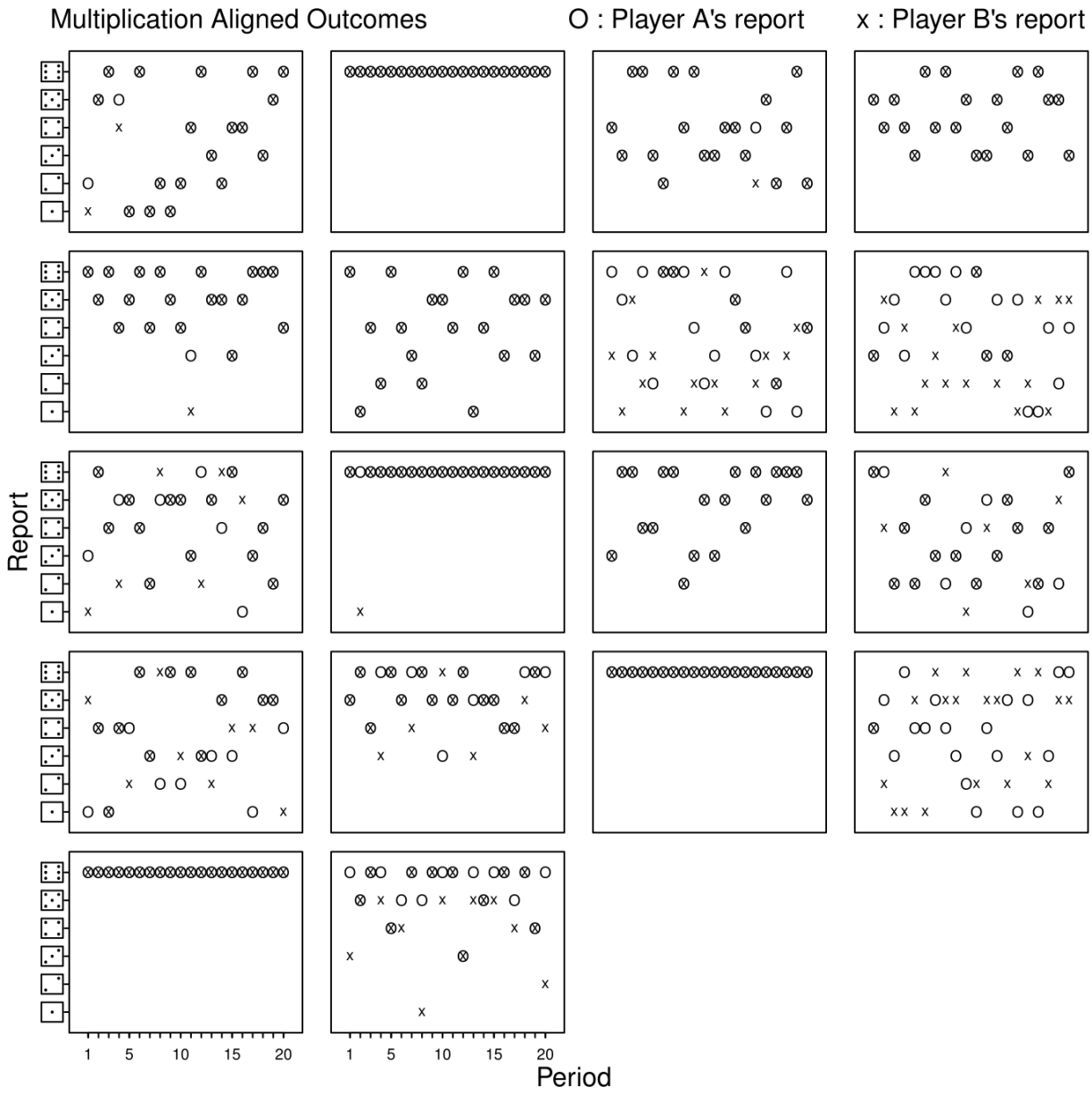


Fig. S27. Multiplication – B-Fixed – robustness experiment

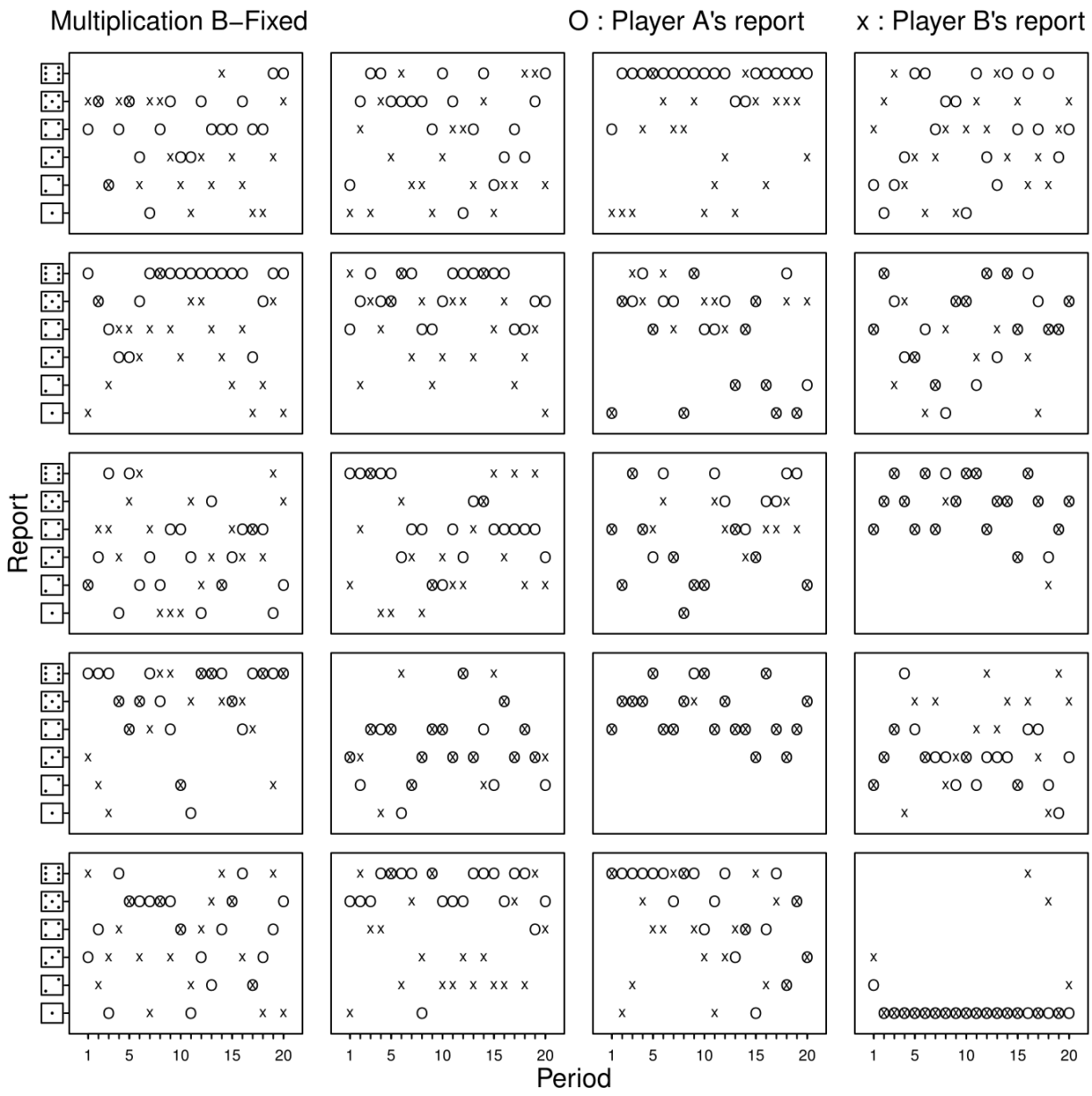


Fig. S28. Addition – Aligned Outcomes – robustness experiment

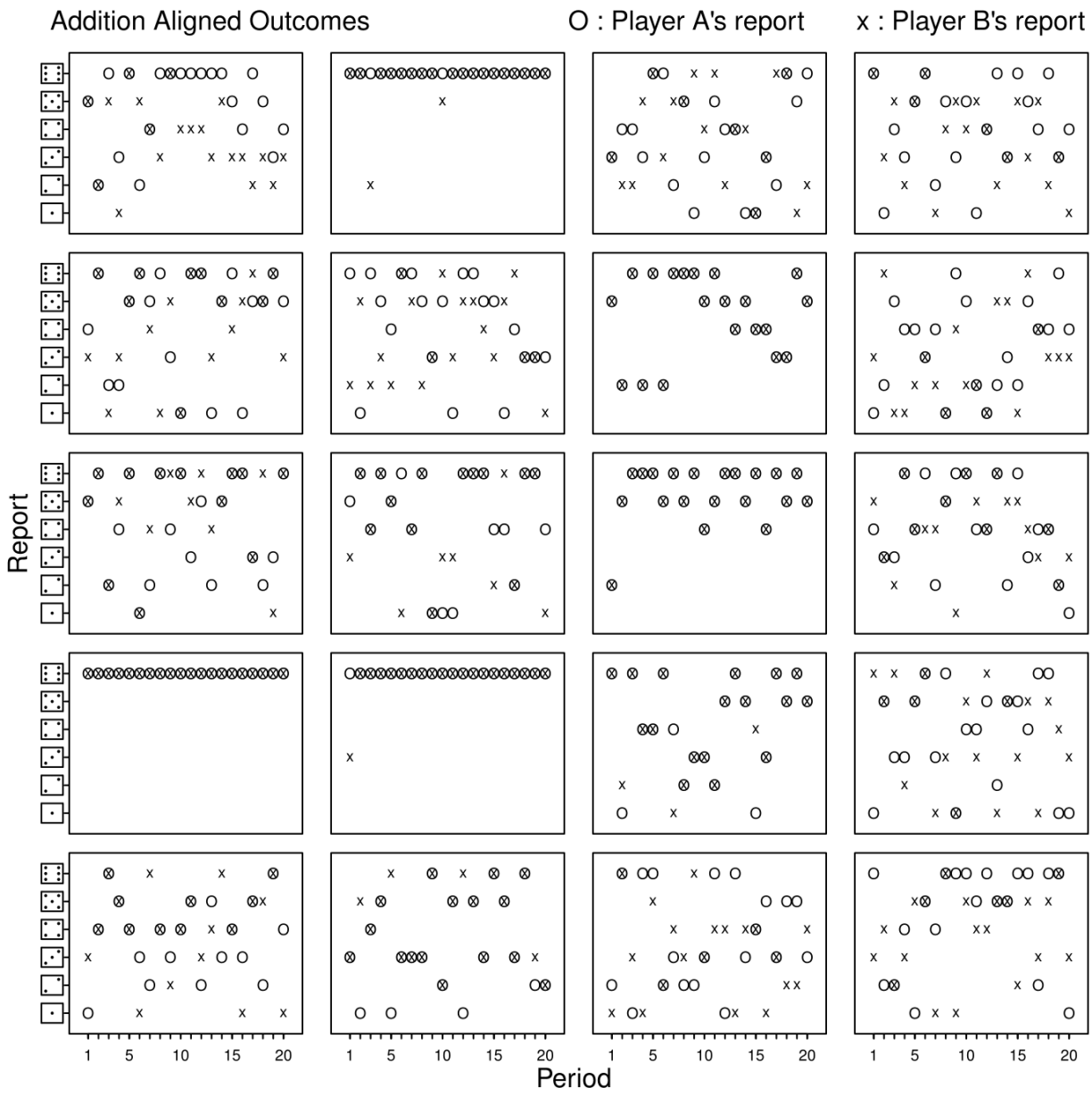
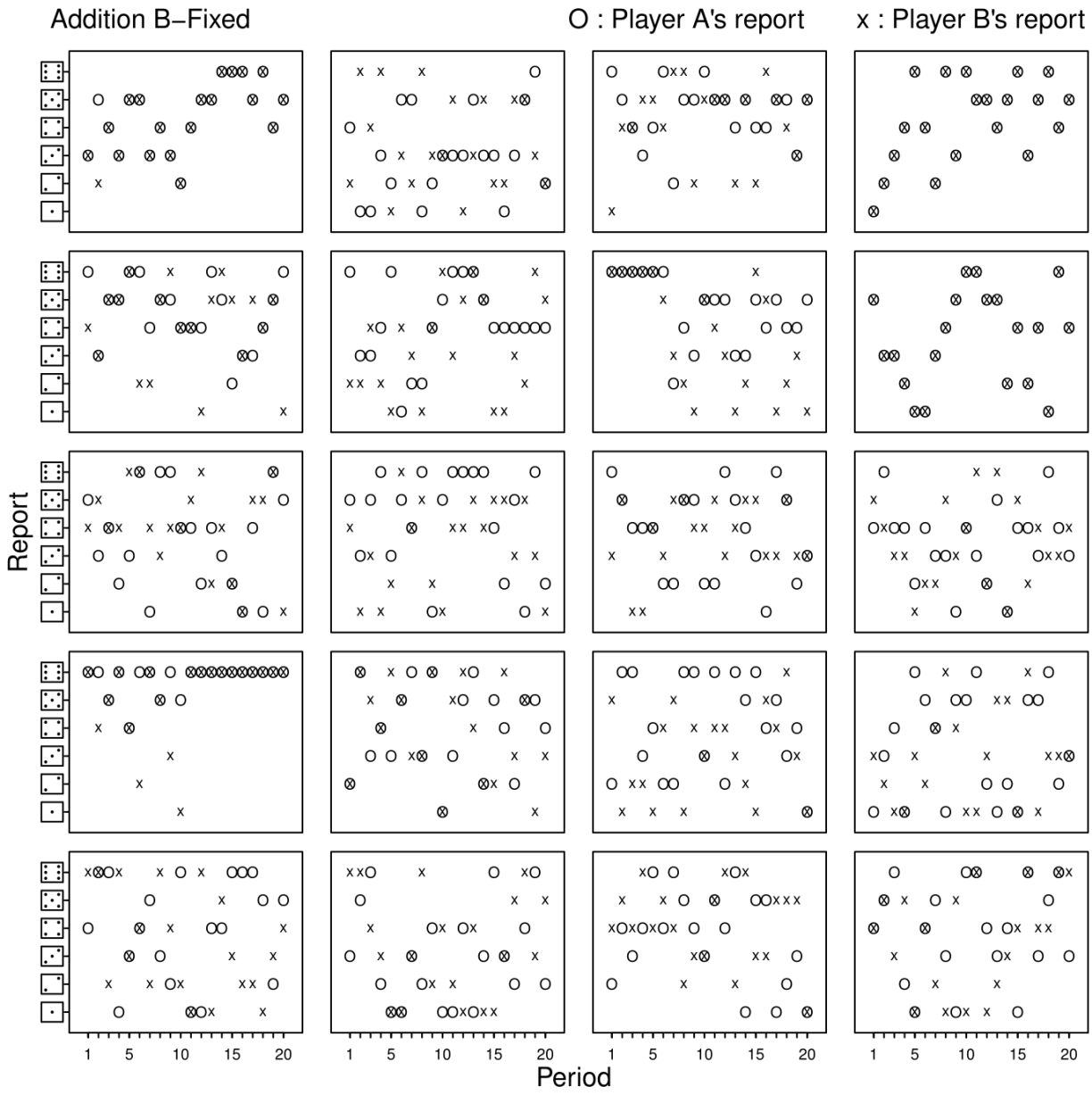


Fig. S29. Addition – B-fixed – robustness experiment



3 Additional Analysis

In addition to the non-parametric tests reported in the main text, we tested the effects of the various treatments and player B's Social Value Orientation (SVO) on the number of reported doubles by applying a generalized linear mixed effect model (with a logit link function), using the *lme4* package (37) in the R environment(38). The specific dyads (or individuals in the Individuals treatment) were modeled as random effects to control for their interrelated error terms (39). Both the treatment and player B's SVO are modelled as dummy variables. Of the 176 B players (140 in the seven dyadic treatment and 36 in the Individuals treatment), one was classified by the SVO measure as competitive, 72 as individualistic, and 103 as pro-social, and none as altruistic. We therefore added the competitive player to the individualistic players, and considered two levels of SVO: 73 pro-self and 103 pro-social players. The regression coefficients and their significance levels, standard errors, and confidence limits are presented in Table S2.

Model 1 replicates the results reported in the main text. Reported doubles are most frequent in the Aligned Outcomes treatment (all the treatment coefficients are negative), and only B-High and A-High they are not significantly lower (for A-High the difference is marginally significant). Additionally, Model 1 reveals a lack of a main effect for player B's SVO. Model 2 adds to Model 1 by including the interaction between the various treatments and player B's SVO. Player B's SVO only interacts significantly with the A-High treatment, although the frequency of reported doubles is consistently lower for pro-socials than pro-selfs. Taken together, these results indicate that the SVO does not seem to play a role in the experiment.

Table S2. Generalized linear mixed effect models - Effect of treatment and player B's social value orientation on reporting a double

	Model 1				Model 2			
Predictor	B	SE	95% CI		b	SE	95% CI	
Intercept	2.47 ***	0.45	1.60	3.35	1.99 ***	0.54	0.94	3.04
Treatment								
AO (Ref)								
B-High	-0.65	0.61	-1.84	0.55	0.07	0.92	-1.74	1.87
B-Low	-1.67 **	0.60	-2.85	-0.49	-0.99	0.86	-2.68	0.69
B-Fixed	-2.88 ***	0.60	-4.05	-1.71	-2.87 **	0.89	-4.61	-1.13
A-High	-1.02 †	0.60	-2.20	0.16	0.13	0.81	-1.46	1.73
A-Low	-1.74 **	0.60	-2.91	-0.57	-1.44 †	0.79	-2.98	0.11
A-Fixed	-2.38 ***	0.59	-3.54	-1.21	-2.16 **	0.77	-3.67	-0.66
Individuals	-2.33 ***	0.59	-3.49	-1.18	-1.81 **	0.67	-3.13	-0.49
SVO type								
Pro Self (Ref)								
Pro Social	0.05	0.18	-0.29	0.39	1.37	0.94	-0.48	3.21
Interaction								
B-High × Pro Social	---	---	---	---	-1.66	1.30	-4.22	0.89
B-Low × Pro Social	---	---	---	---	-1.61	1.26	-4.08	0.86
B-Fixed × Pro Social	---	---	---	---	-0.64	1.27	-3.13	1.85
A-High × Pro Social	---	---	---	---	-2.53 *	1.24	-4.96	-0.09
A-Low × Pro Social	---	---	---	---	-0.99	1.23	-3.41	1.42
A-Fixed × Pro Social	---	---	---	---	-0.79	1.22	-3.19	1.61
Ind. × Pro Social	---	---	---	---	-1.37	0.97	-3.26	0.52

b = regression coefficients; SE = standard errors; Ref = reference group; 95% CI = 95% confidence intervals (based on the estimated local curvature of the likelihood surface). Dashes indicate that the variable was not included in the model. Note: All models considered the specific dyads (or individuals) as random effects. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4 Bibliography

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