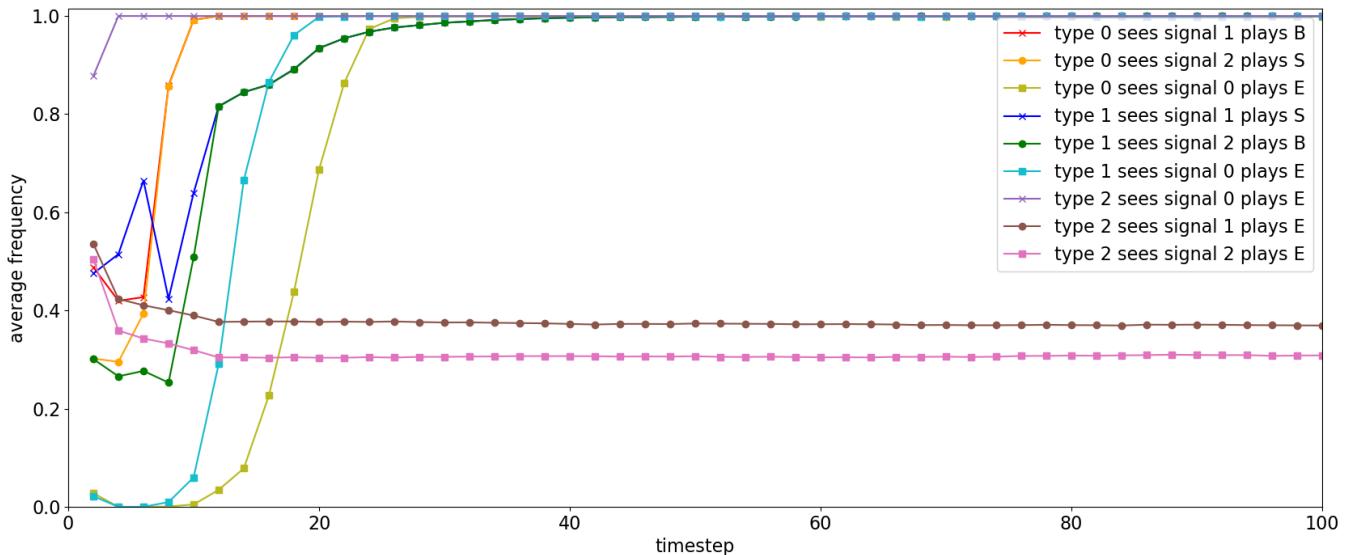
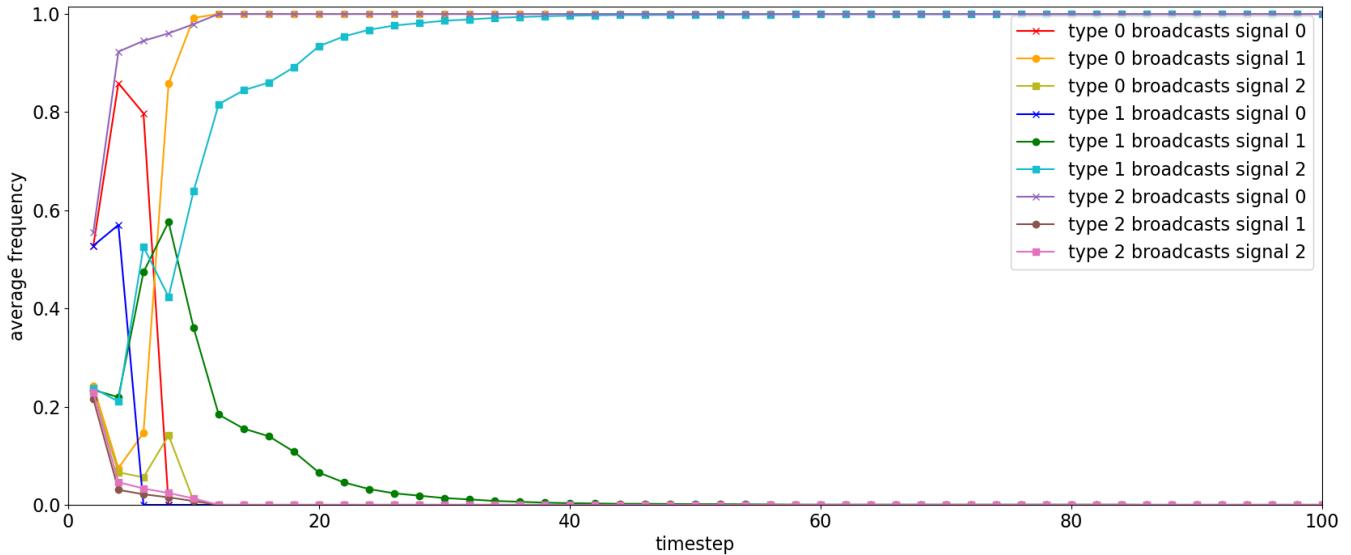
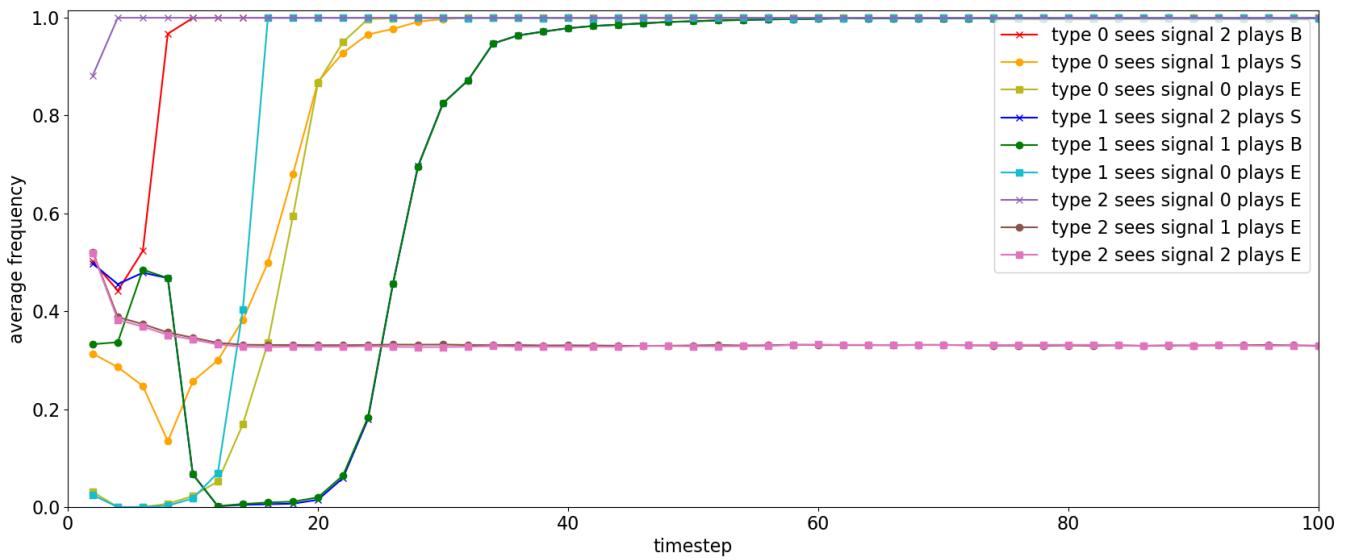
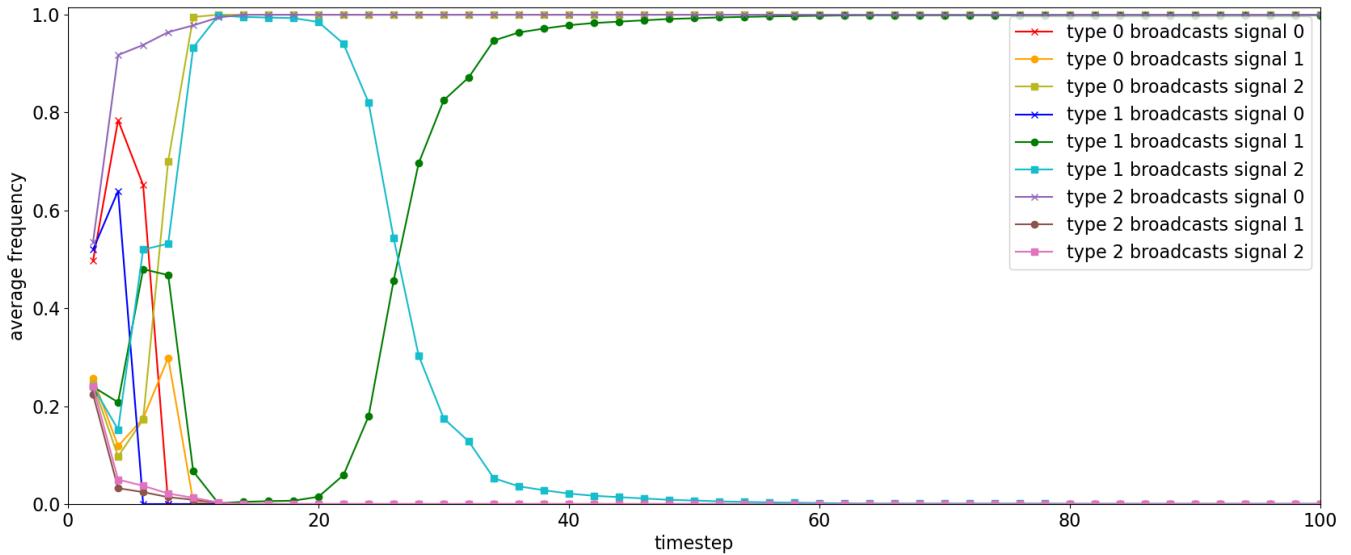


**outcomes ( $x_i$ ): looks like the profile that has type 1 playing S with 0 is same one that has 1 playing B with 1, so the dispositions invade together**

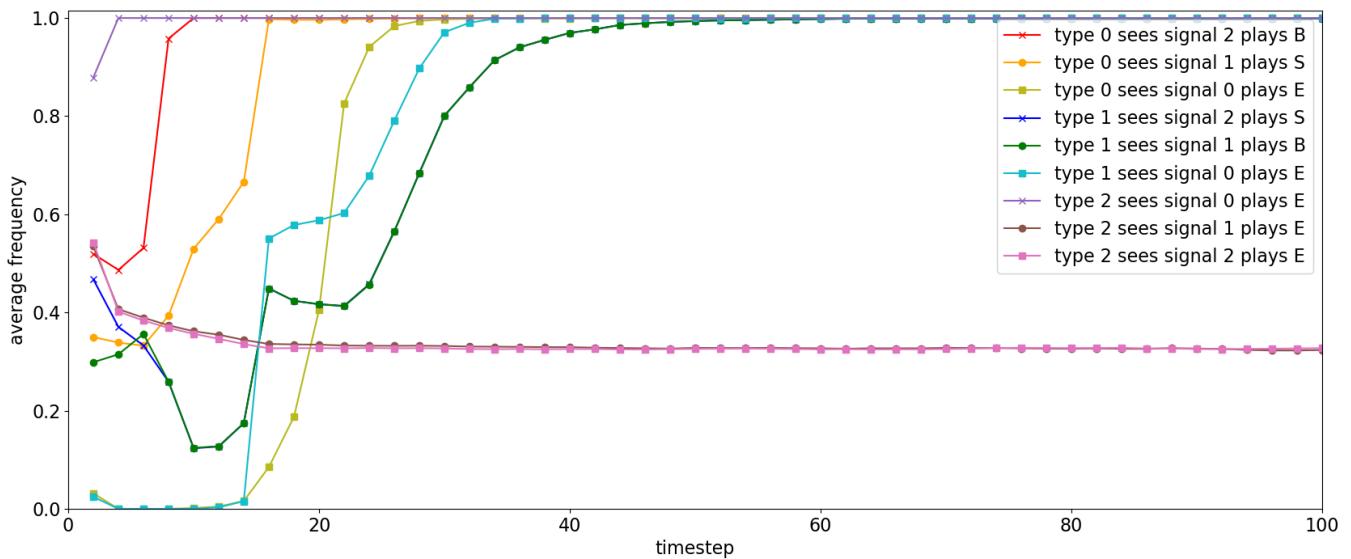
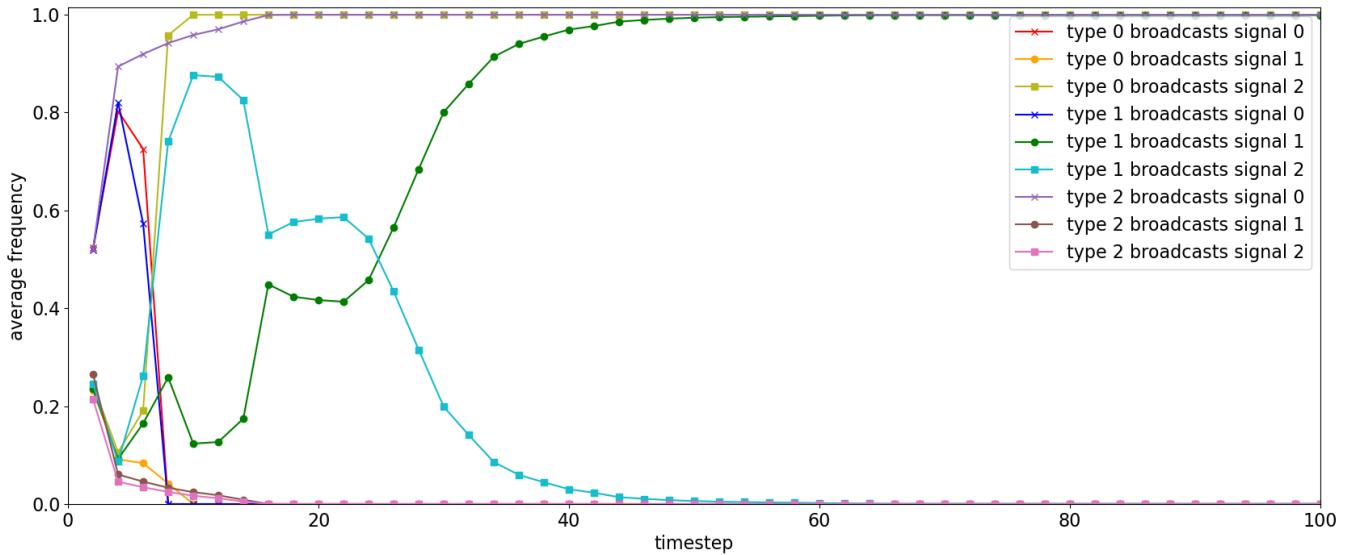
Run # 273



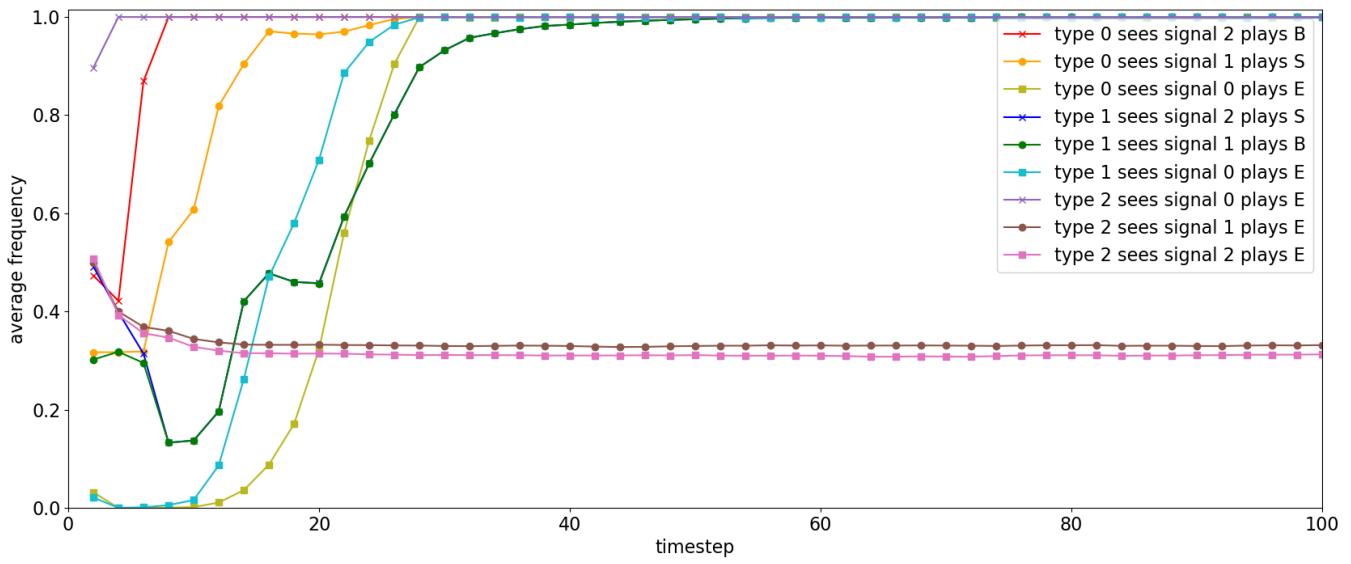
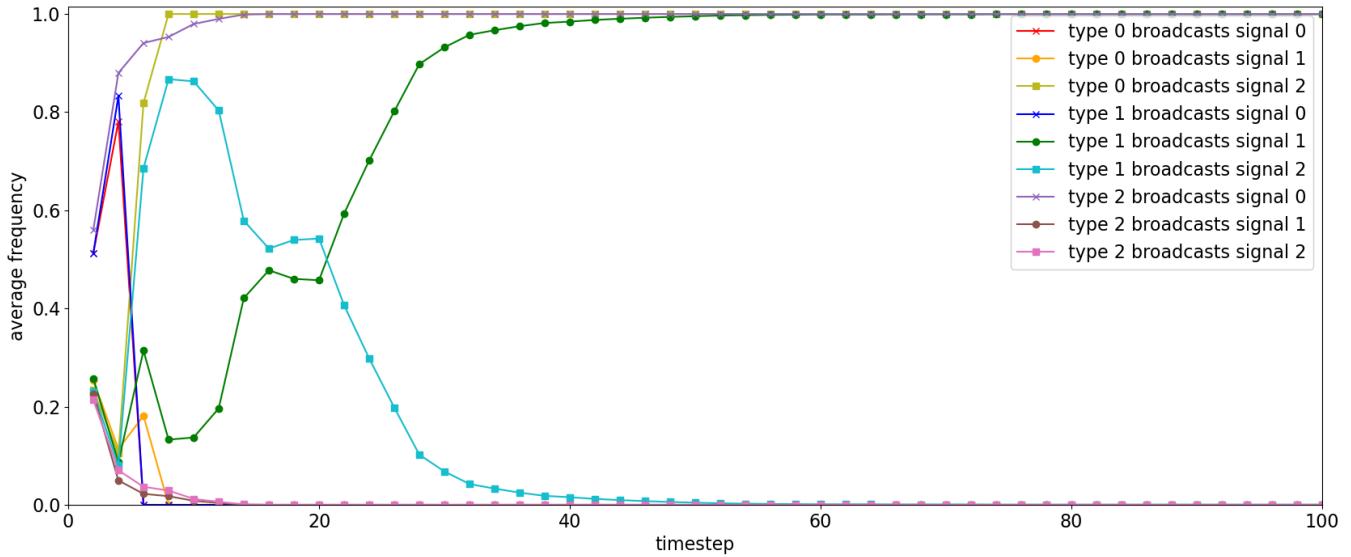
Run # 443



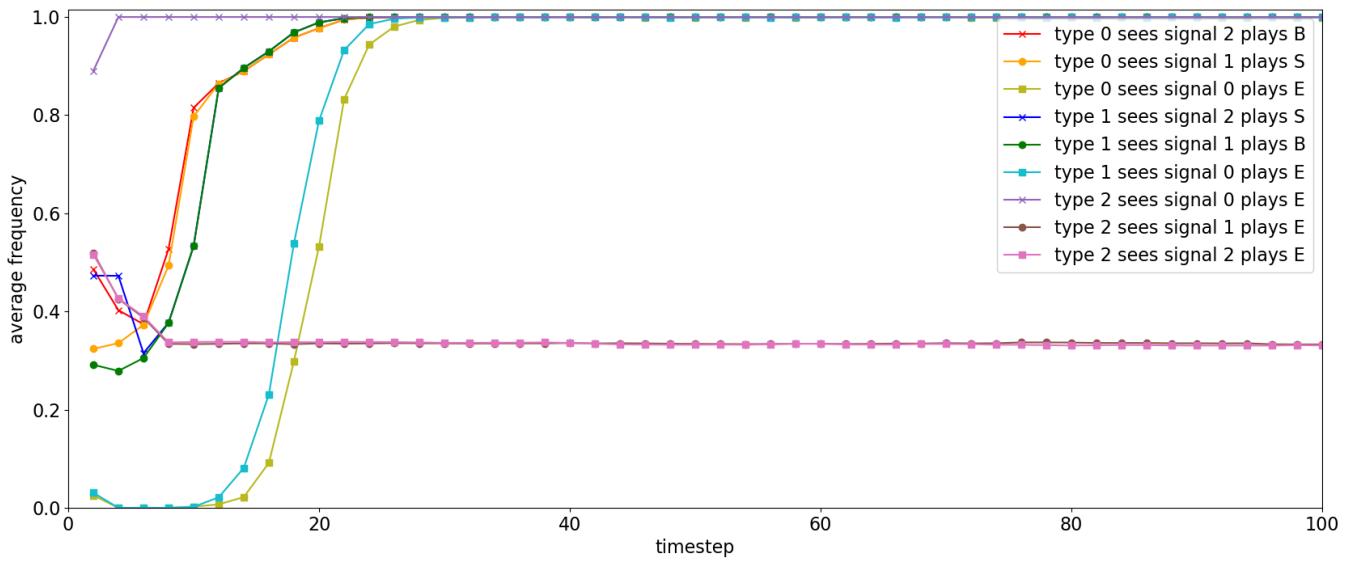
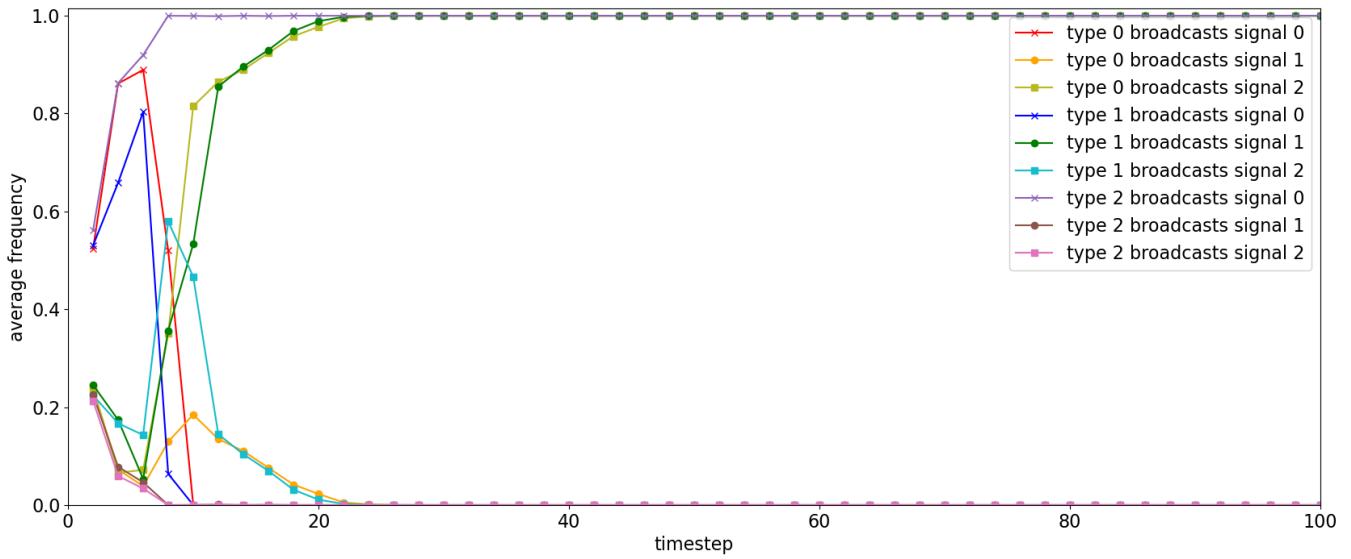
Run # 508



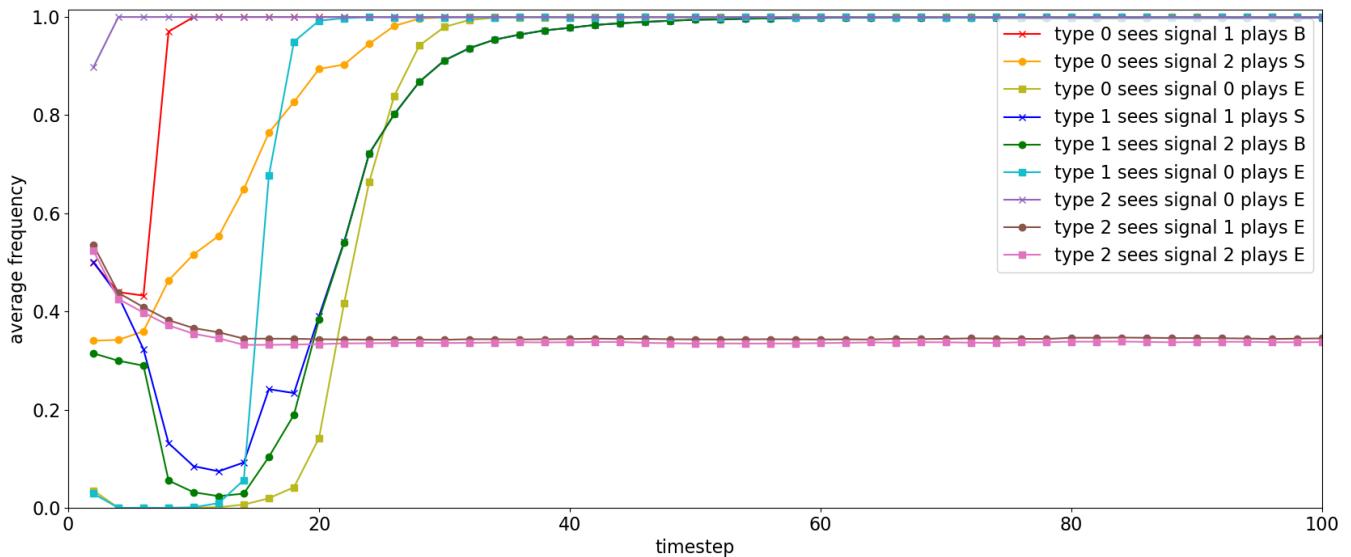
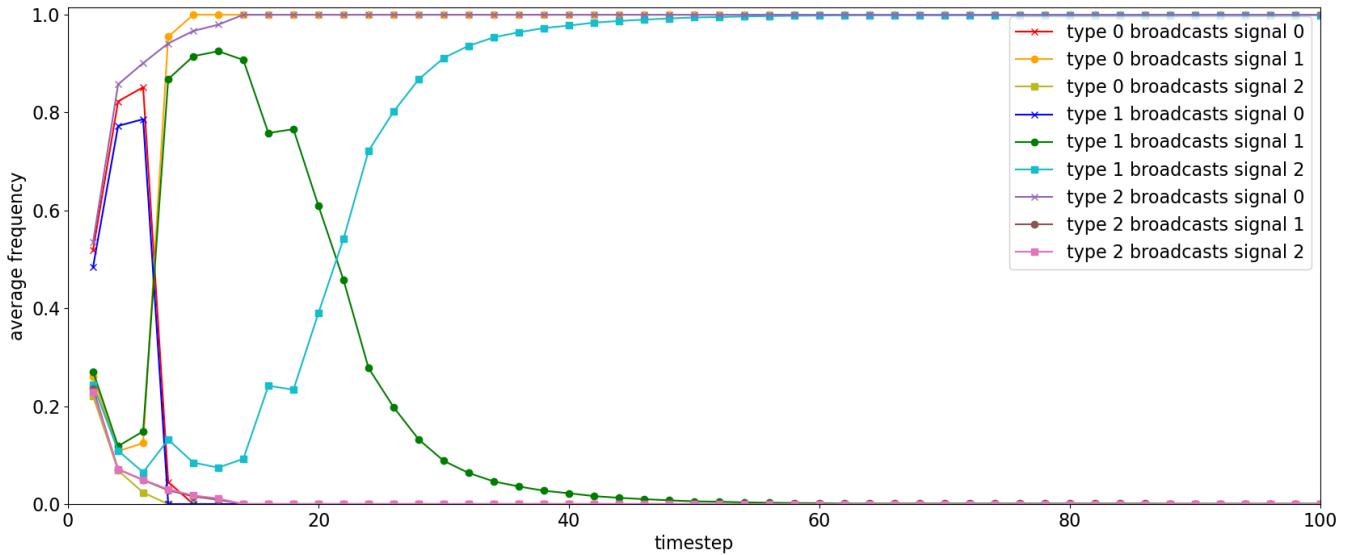
Run # 696



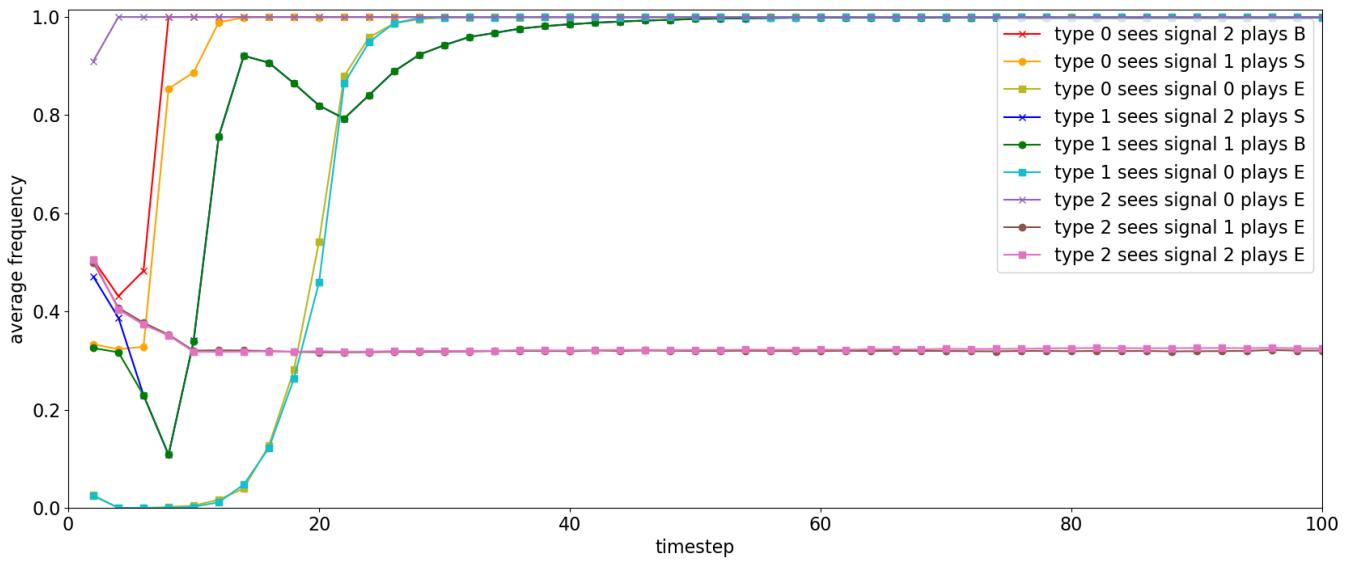
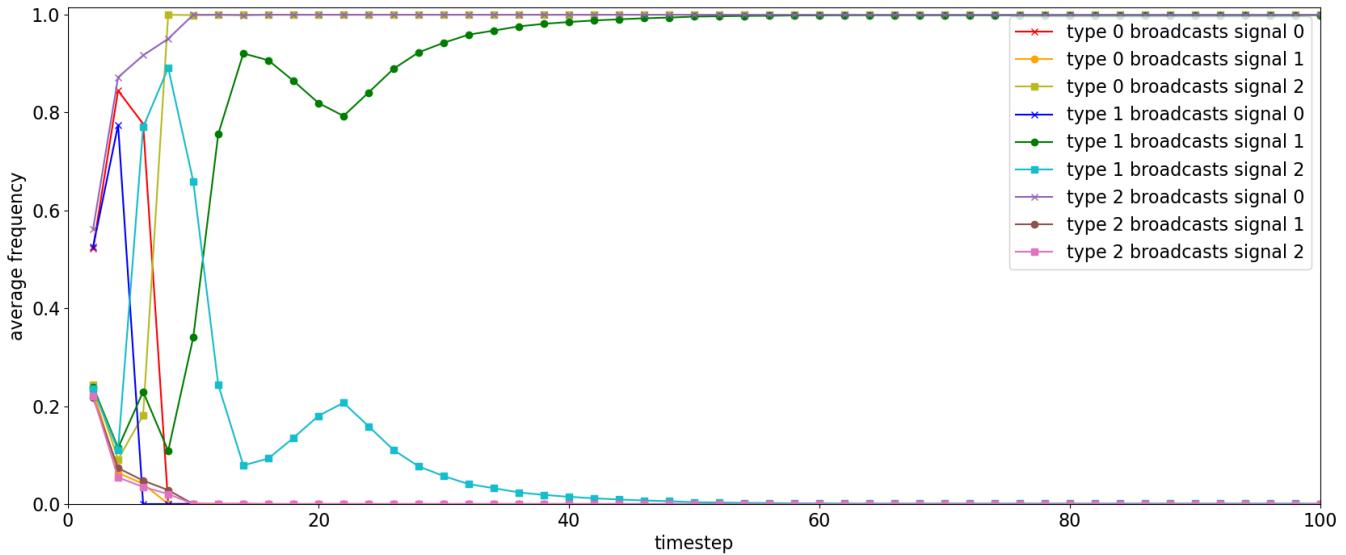
Run # 855



Run # 929

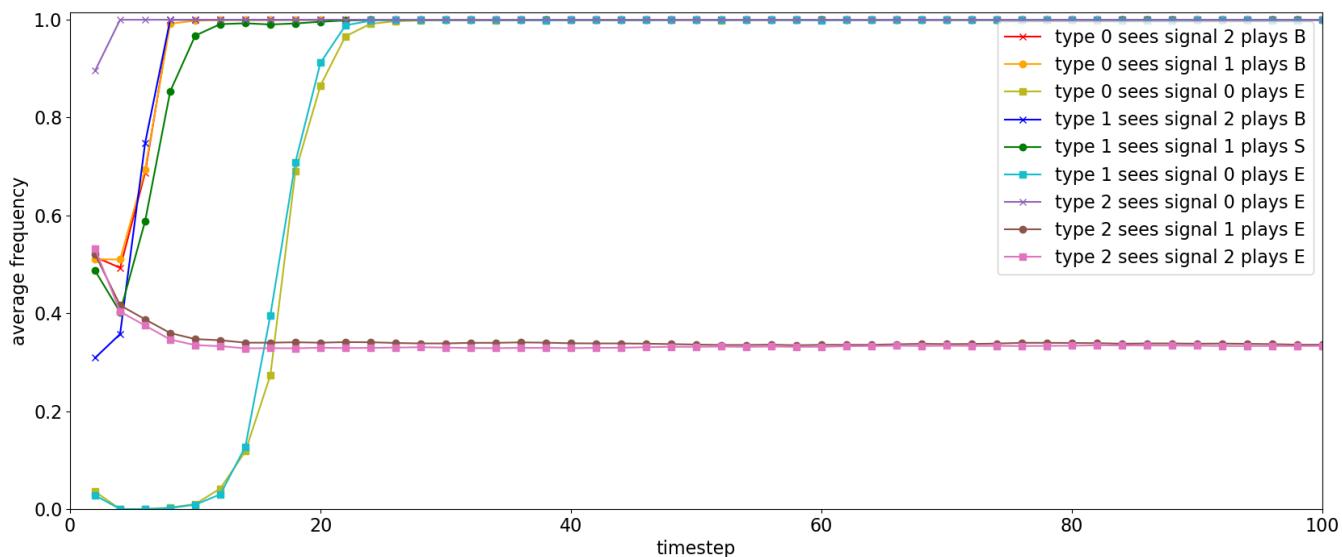
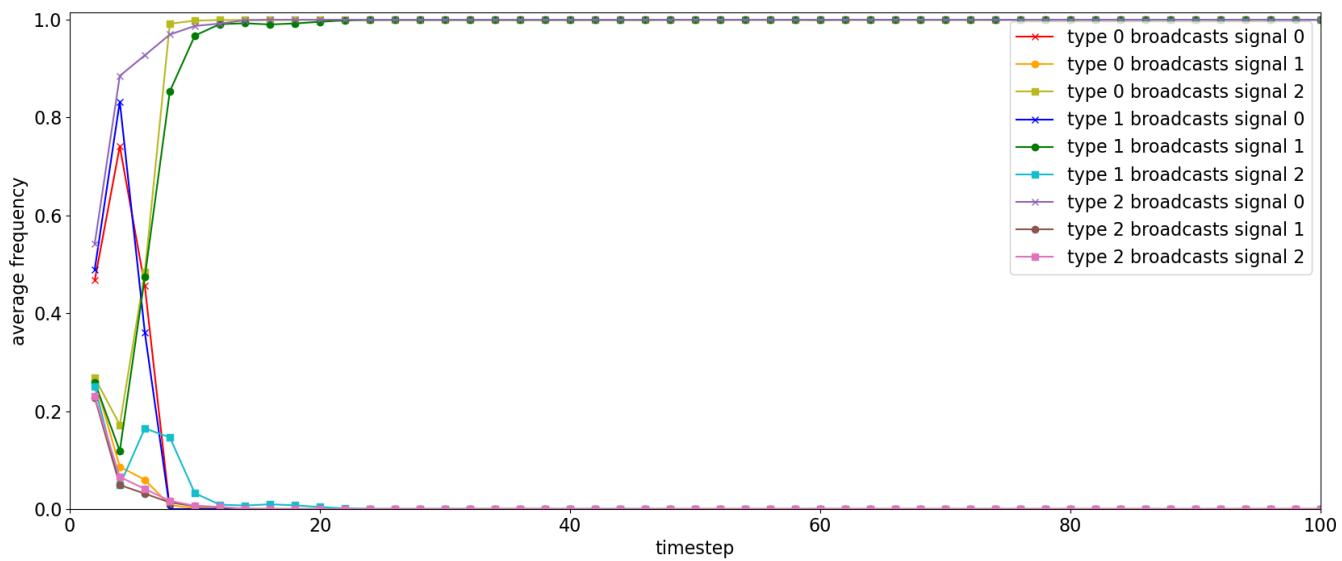


Run # 933

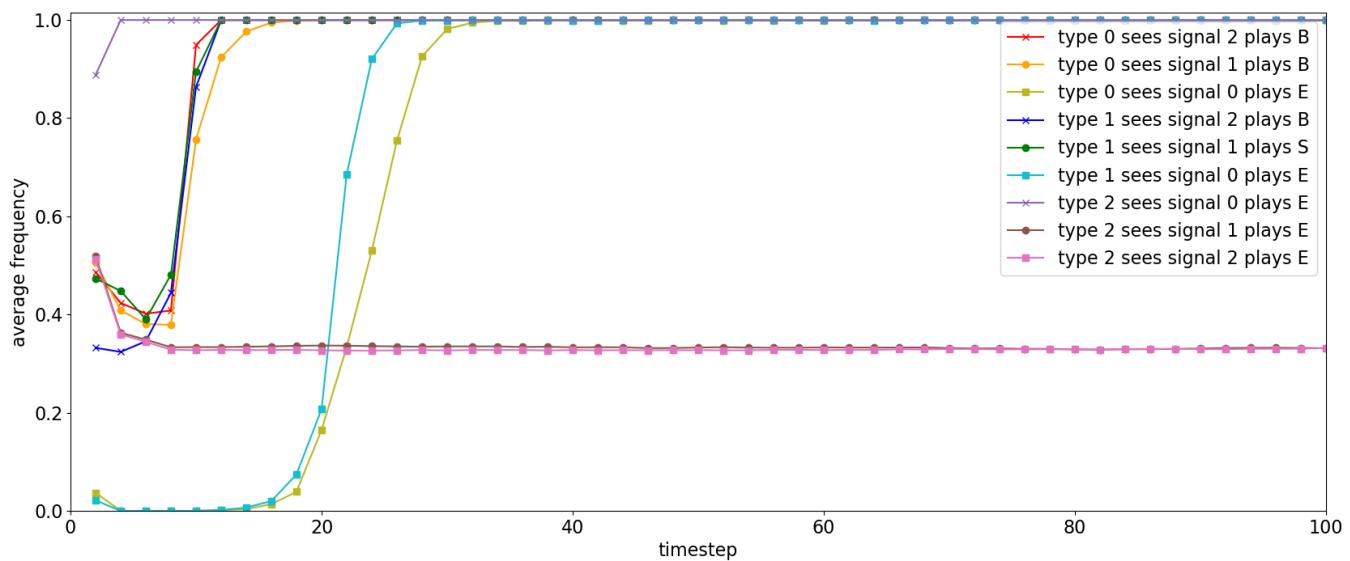
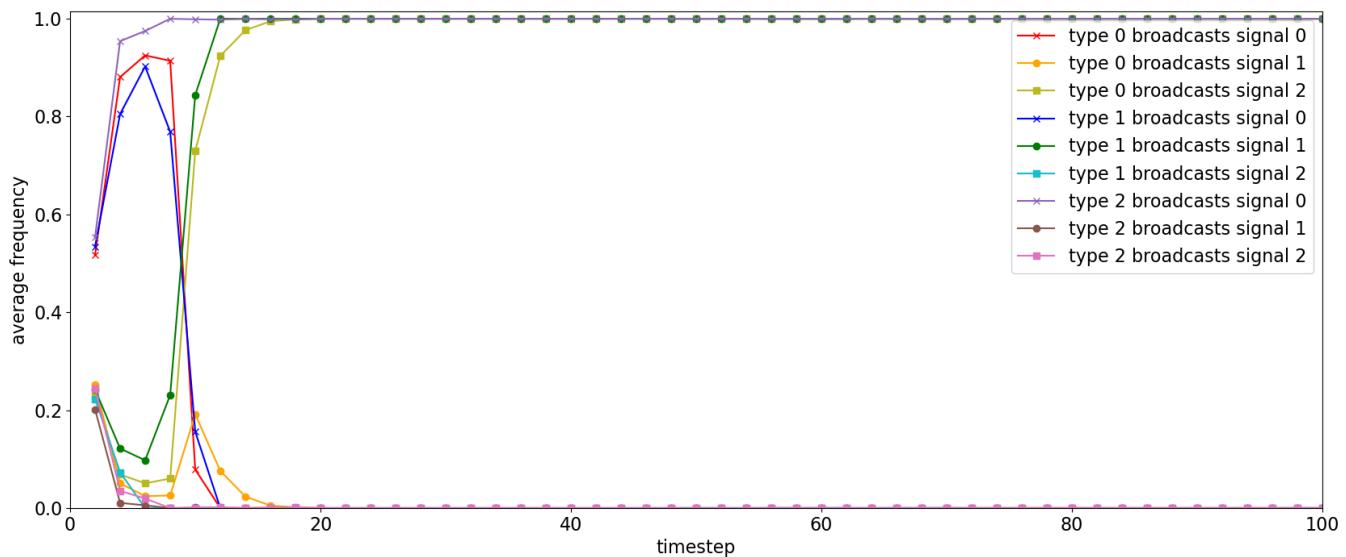


outcomes (xii): necessarily characterized by type 2 signaling 0

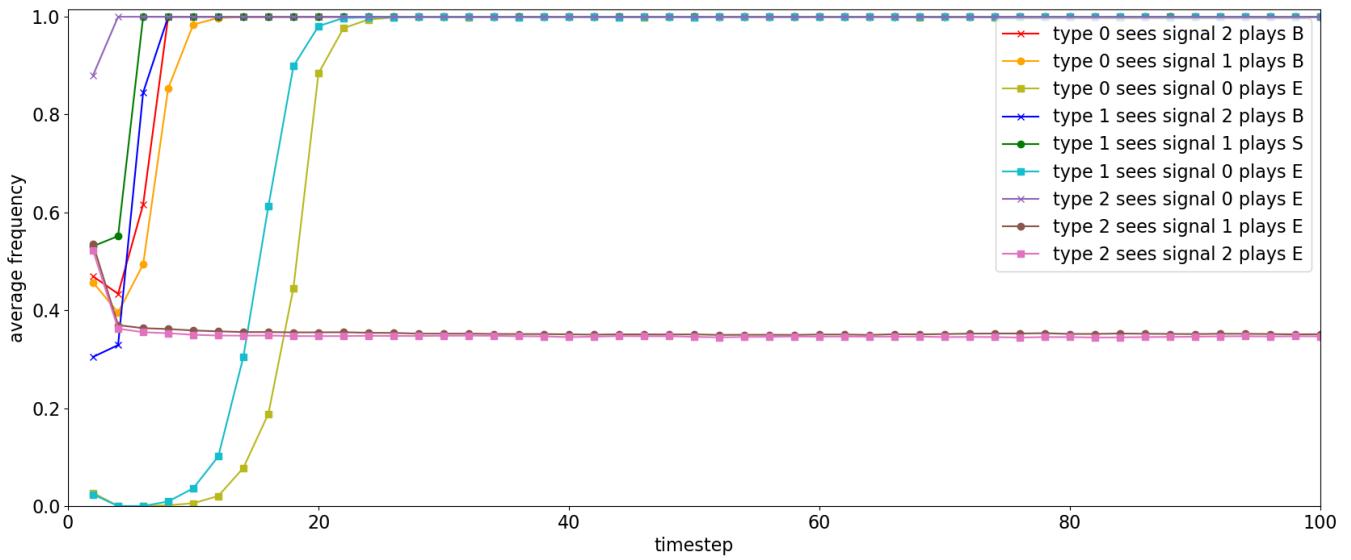
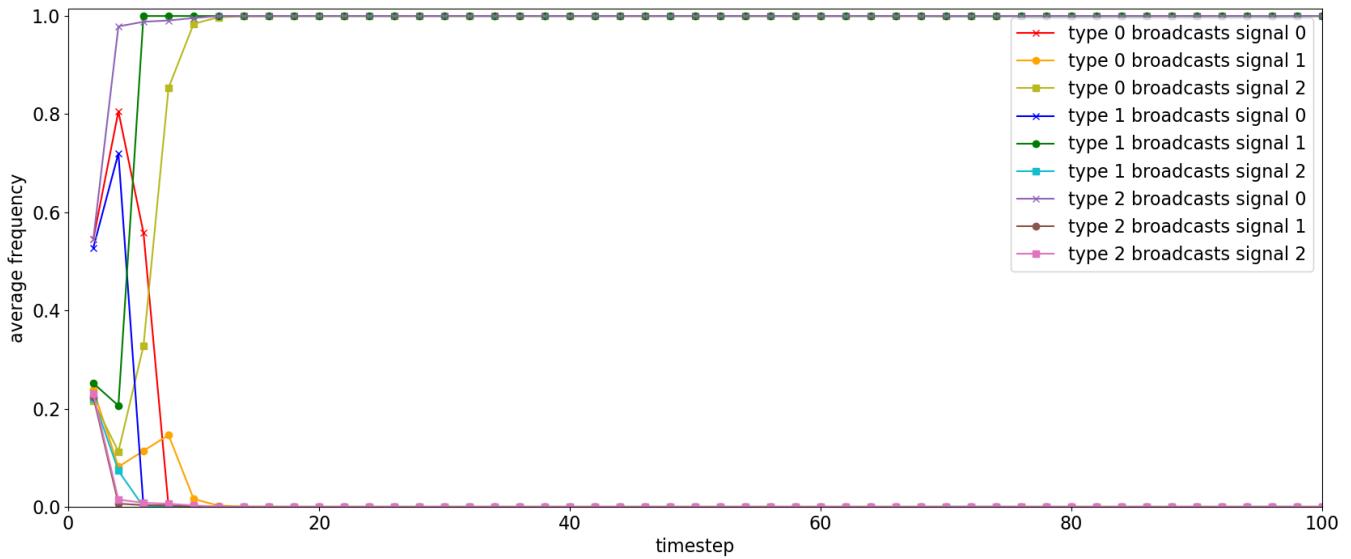
Run # 6



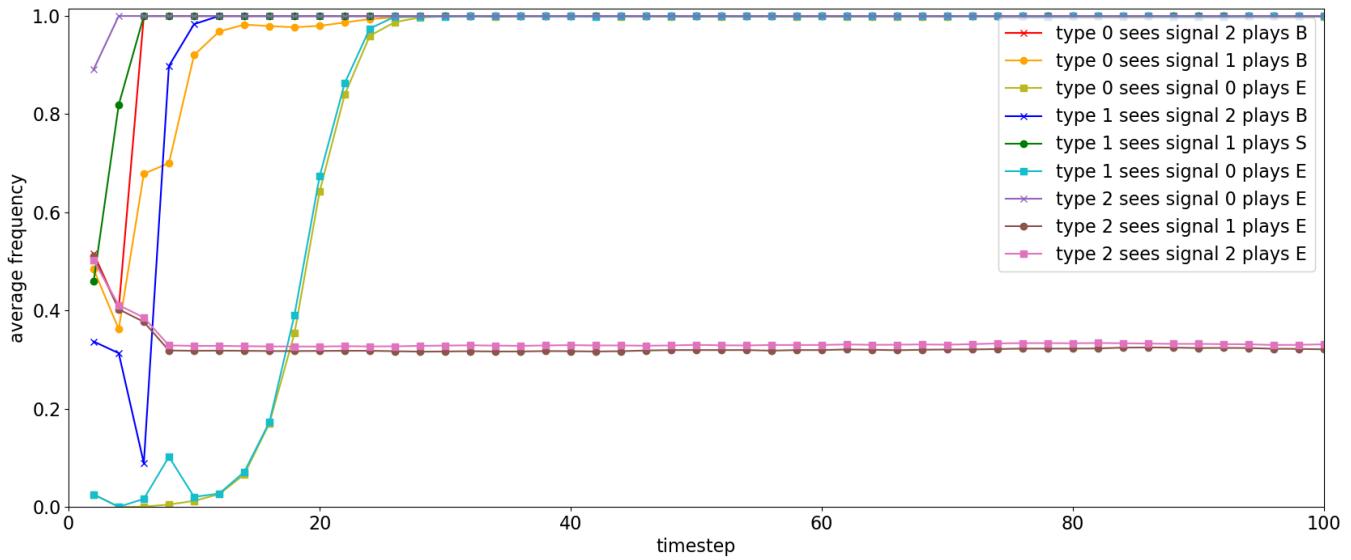
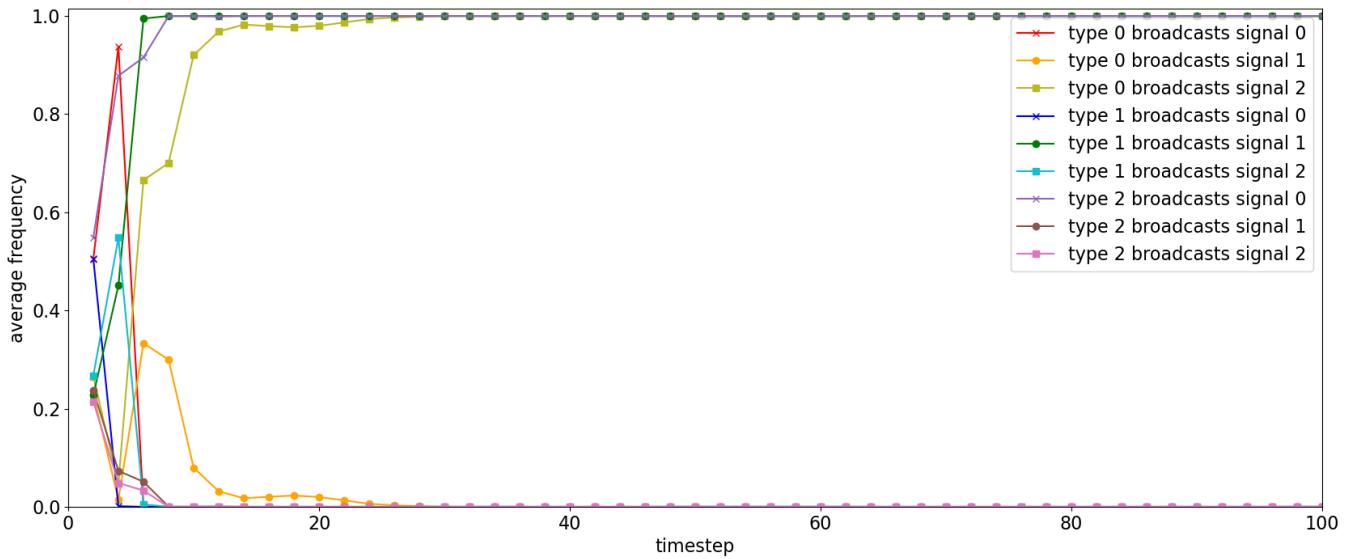
Run # 17



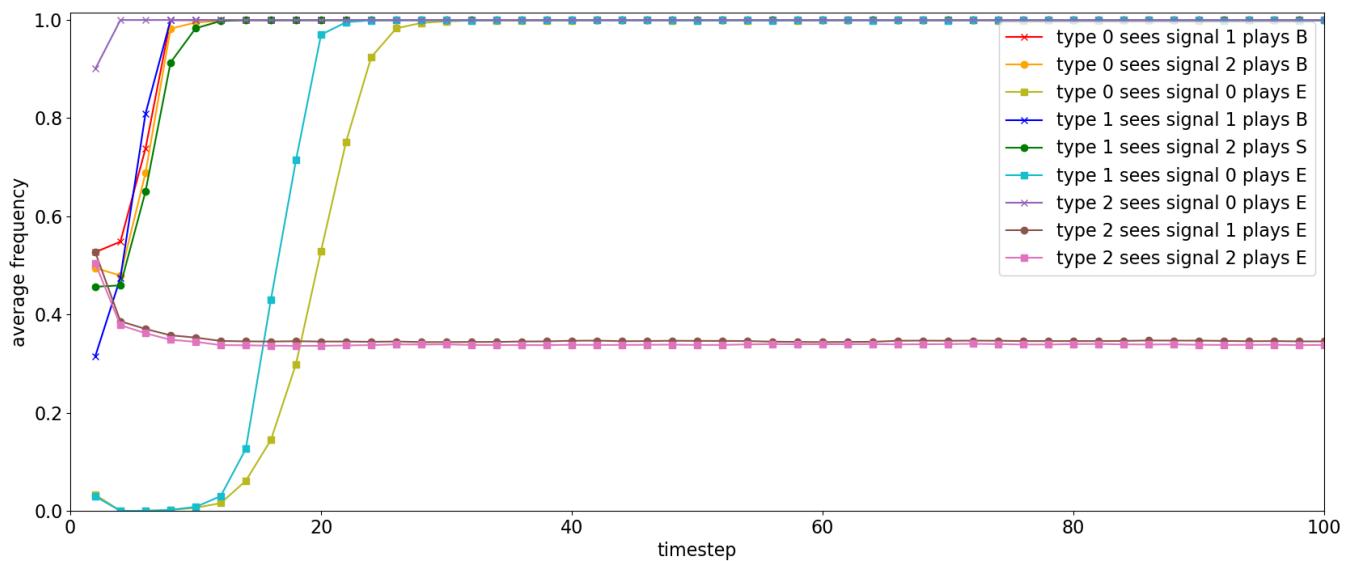
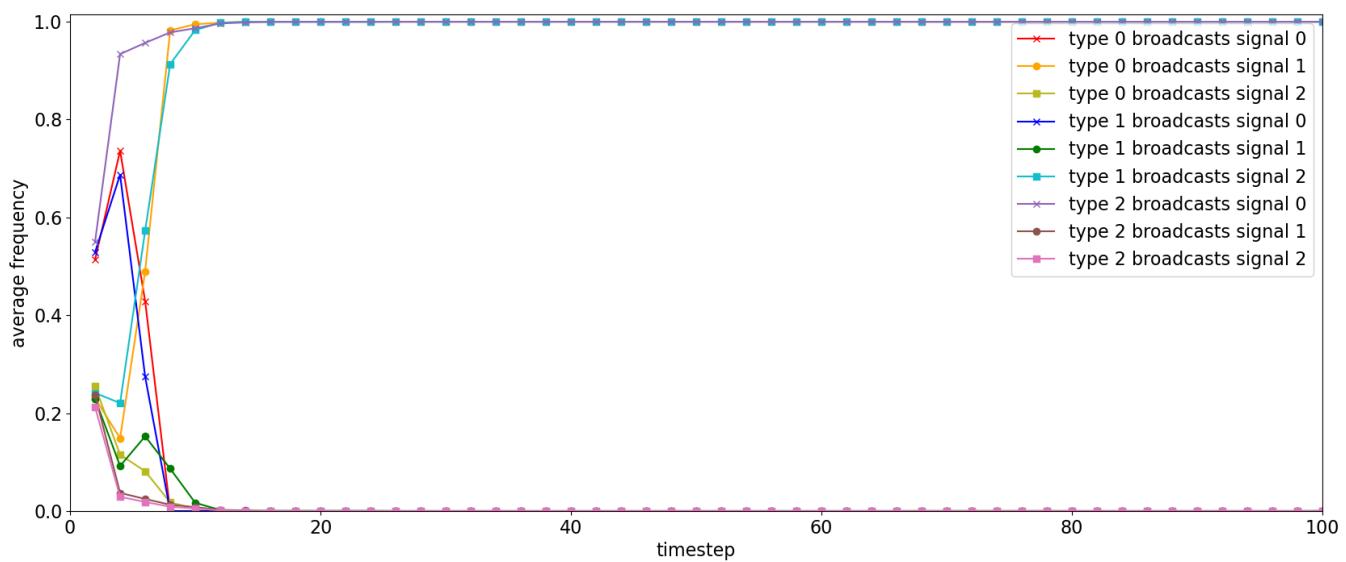
Run # 25



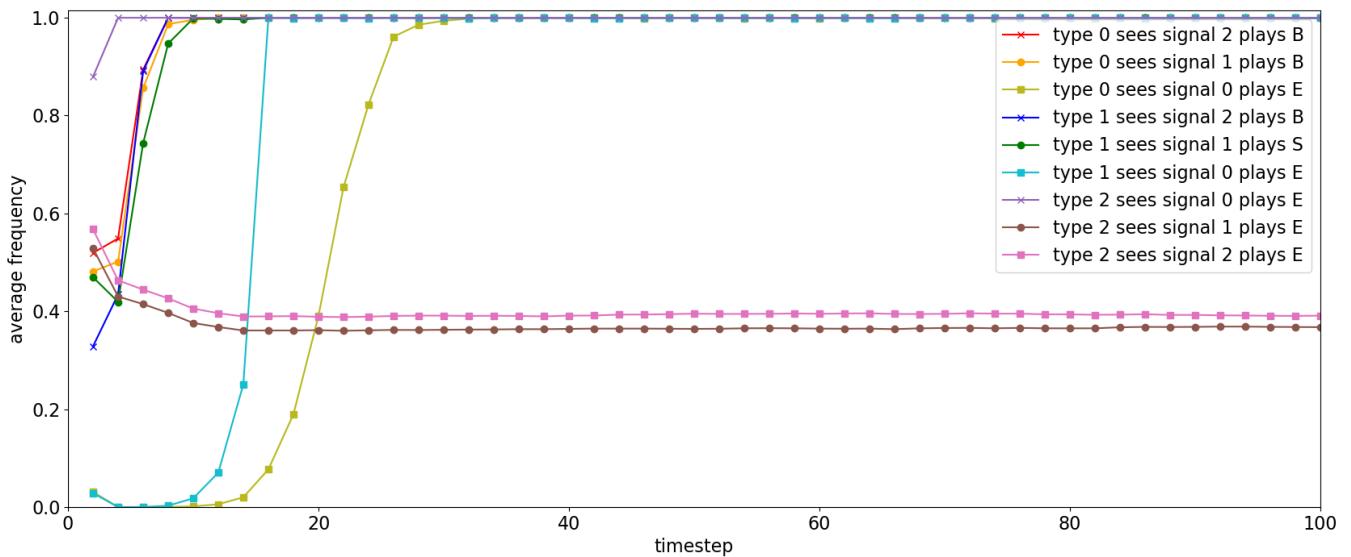
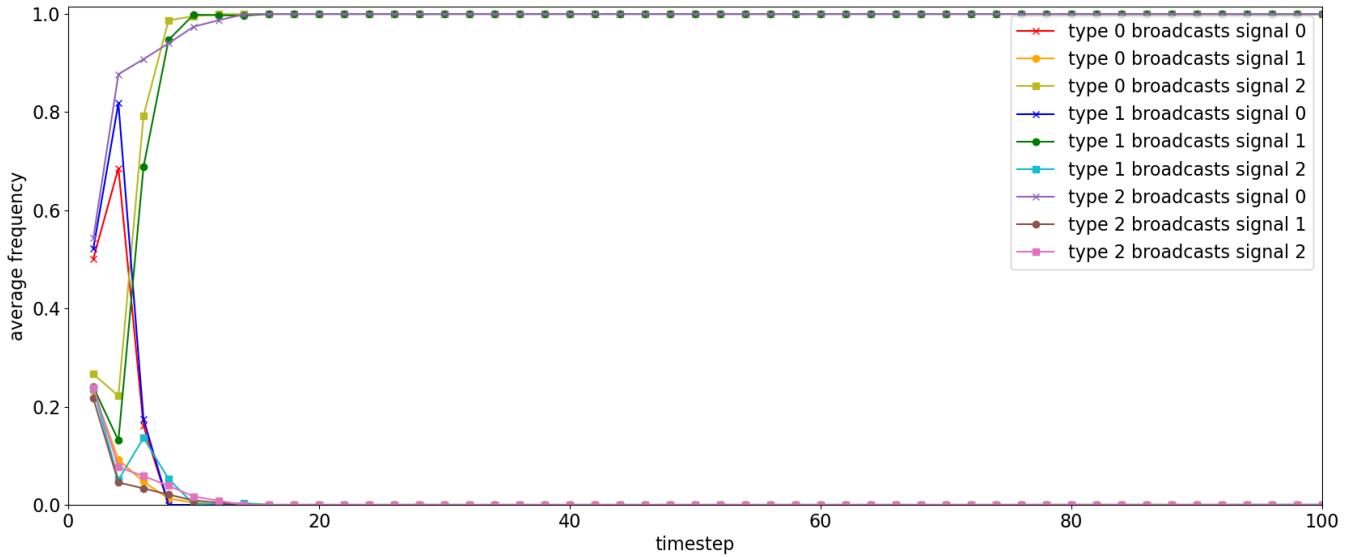
Run # 26



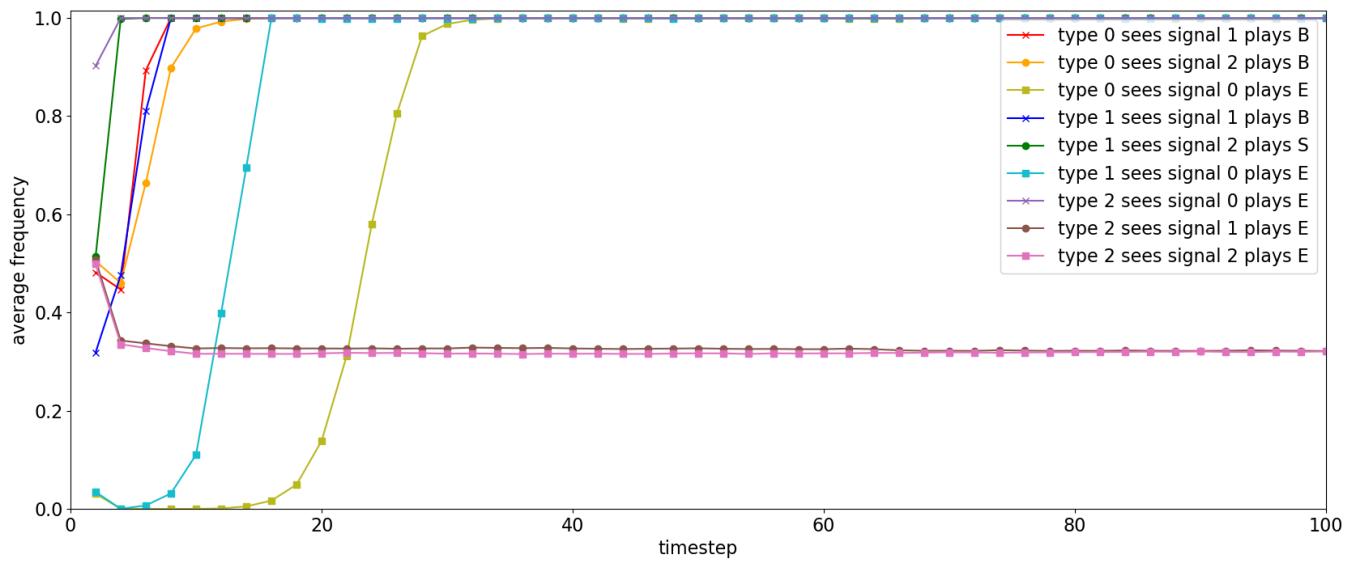
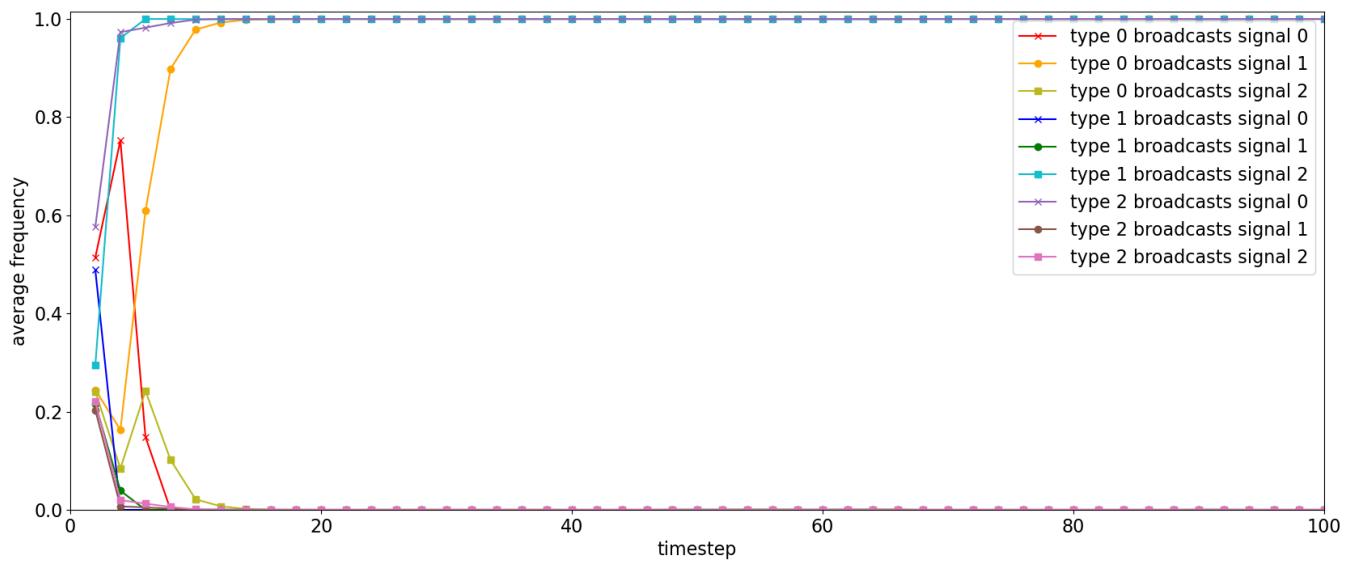
Run # 30



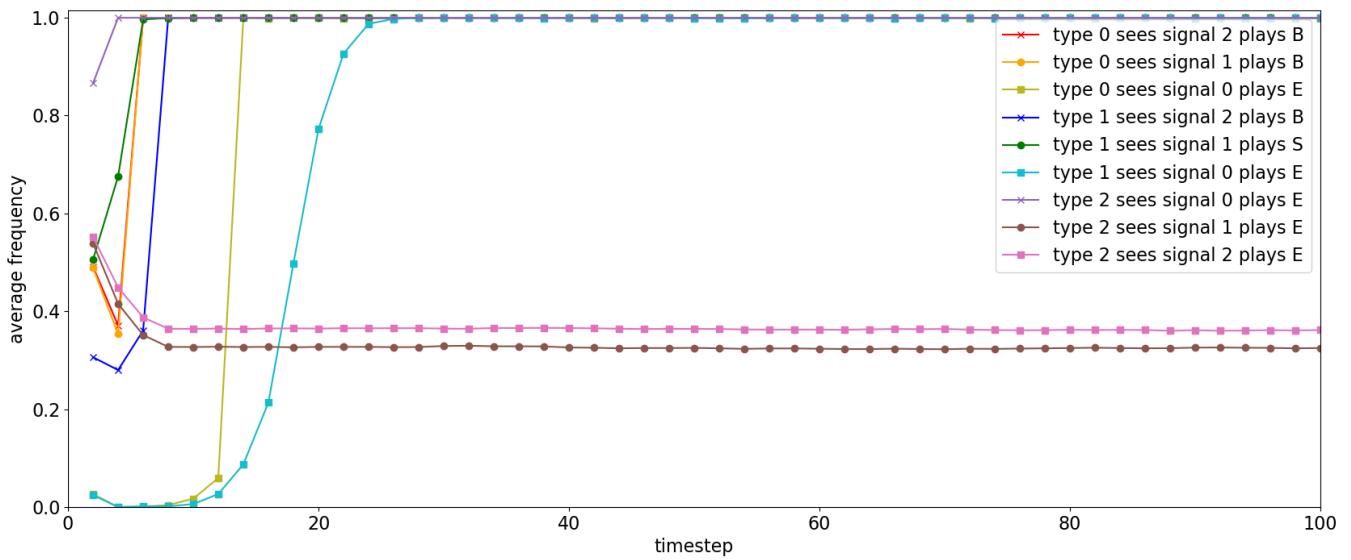
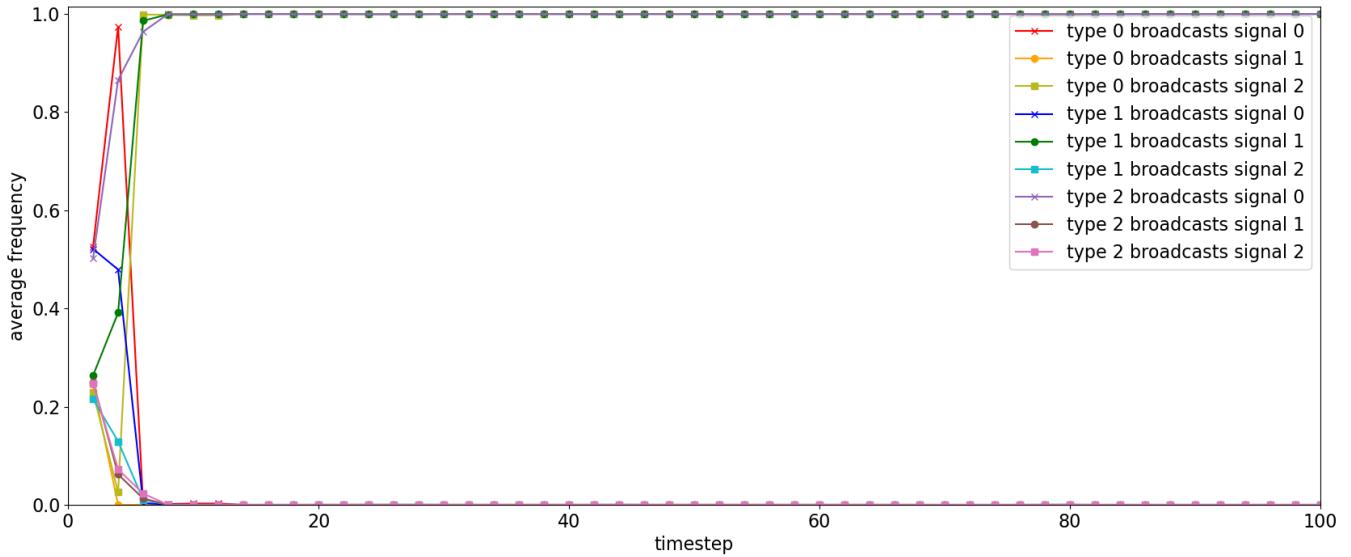
Run # 35



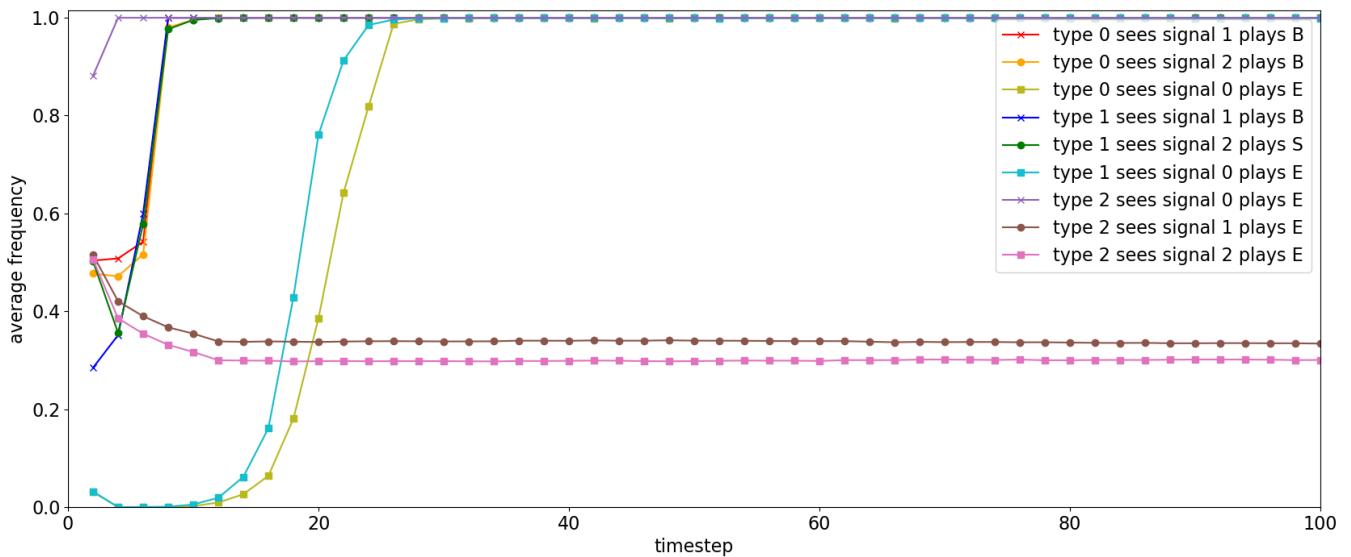
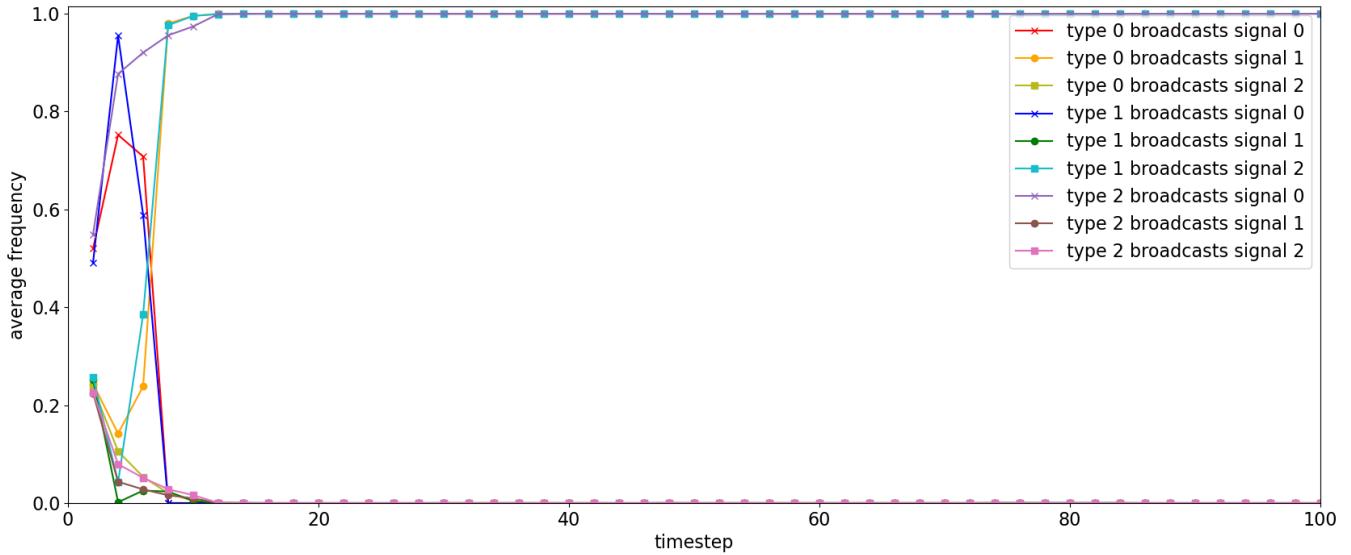
Run # 40



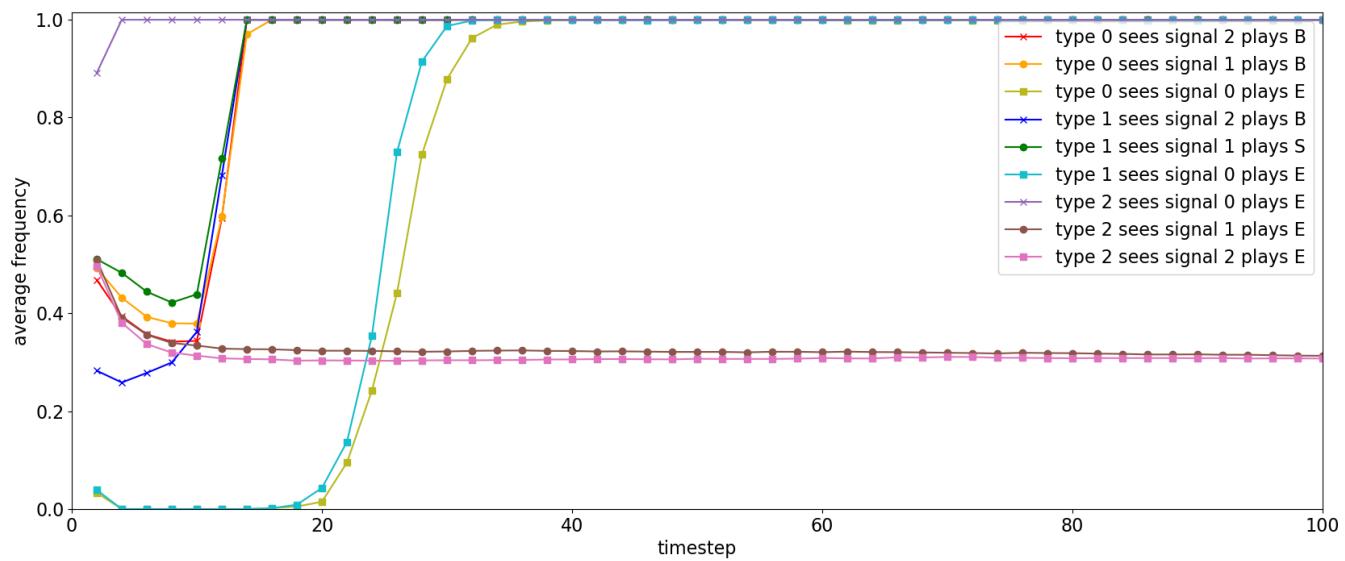
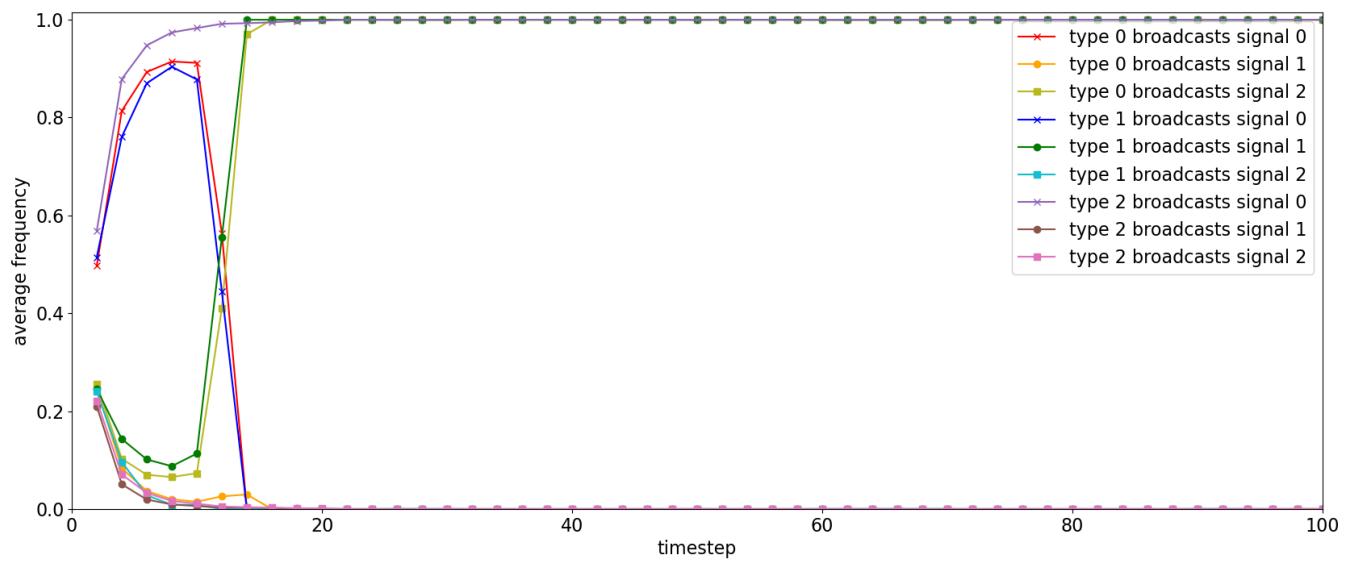
Run # 47



Run # 49

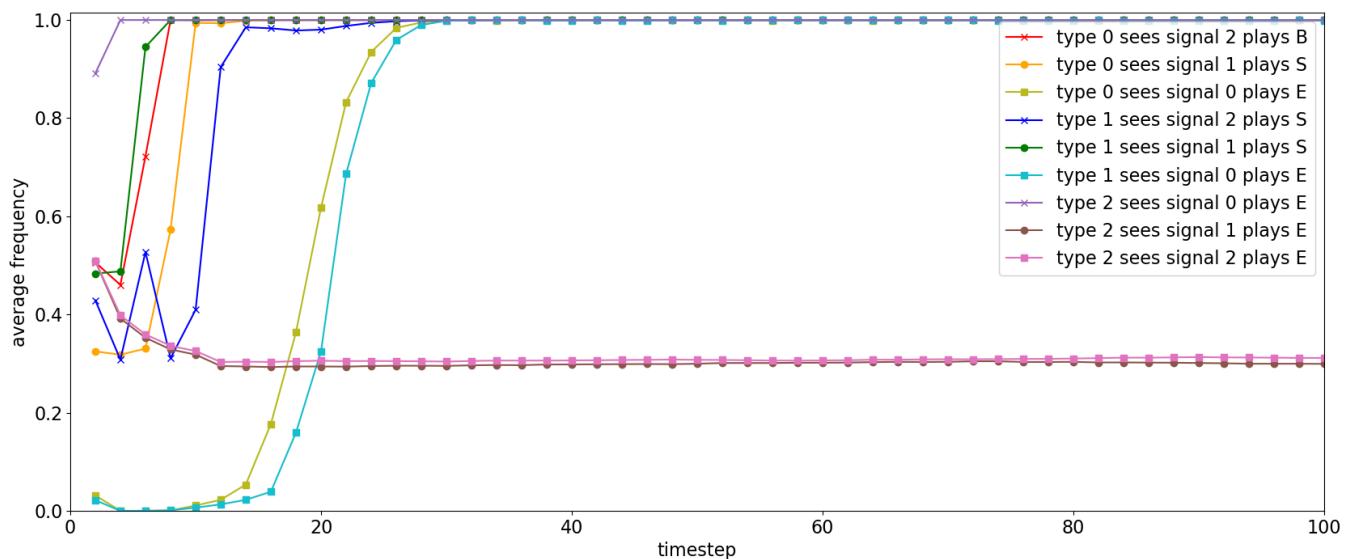
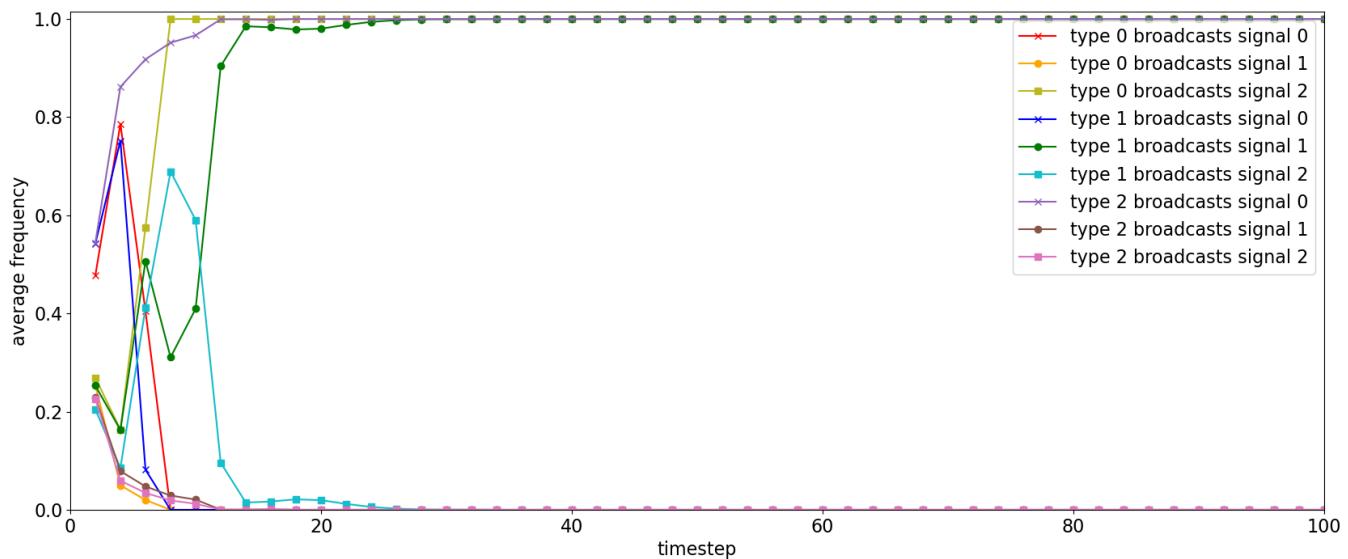


Run # 50

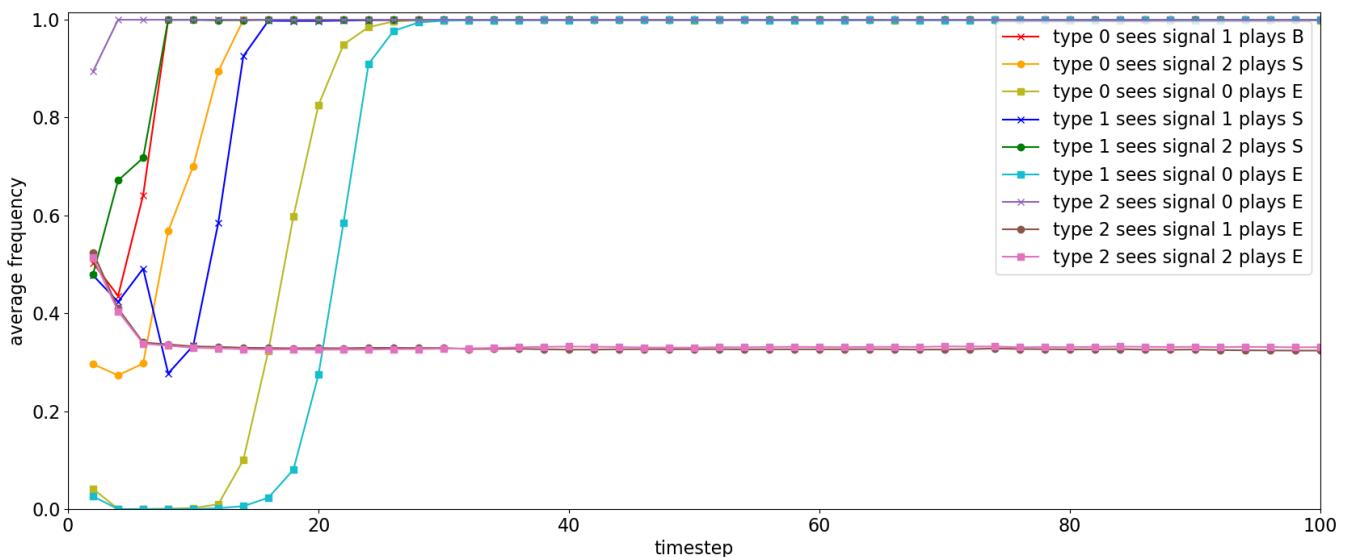
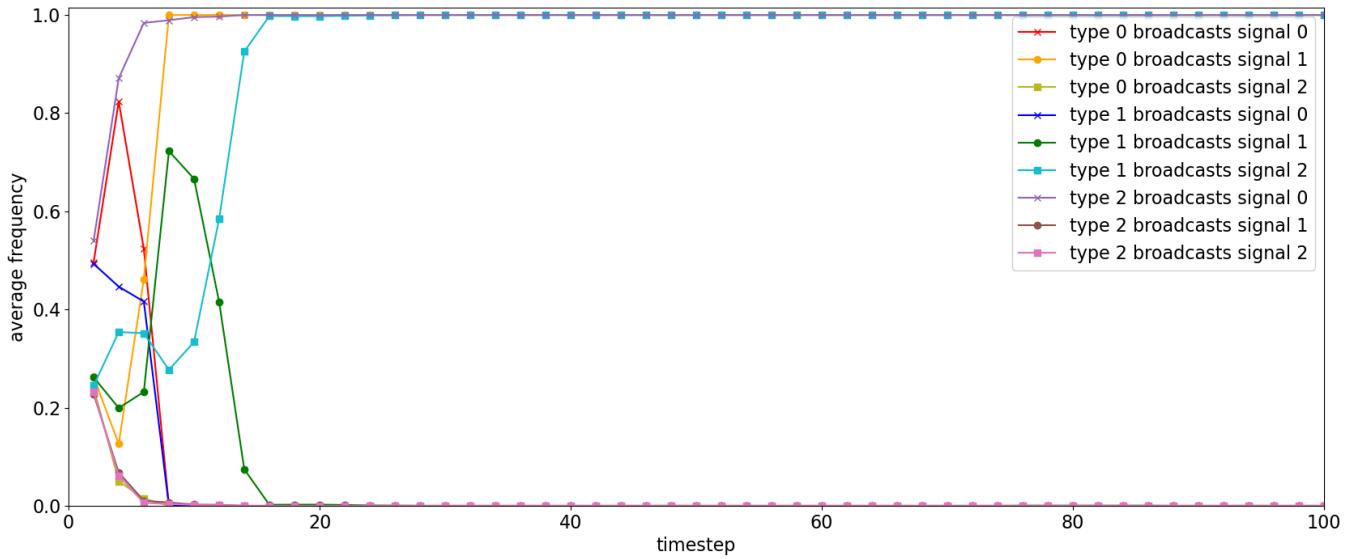


outcomes (xiii): necessarily characterized by type 2 signaling 0

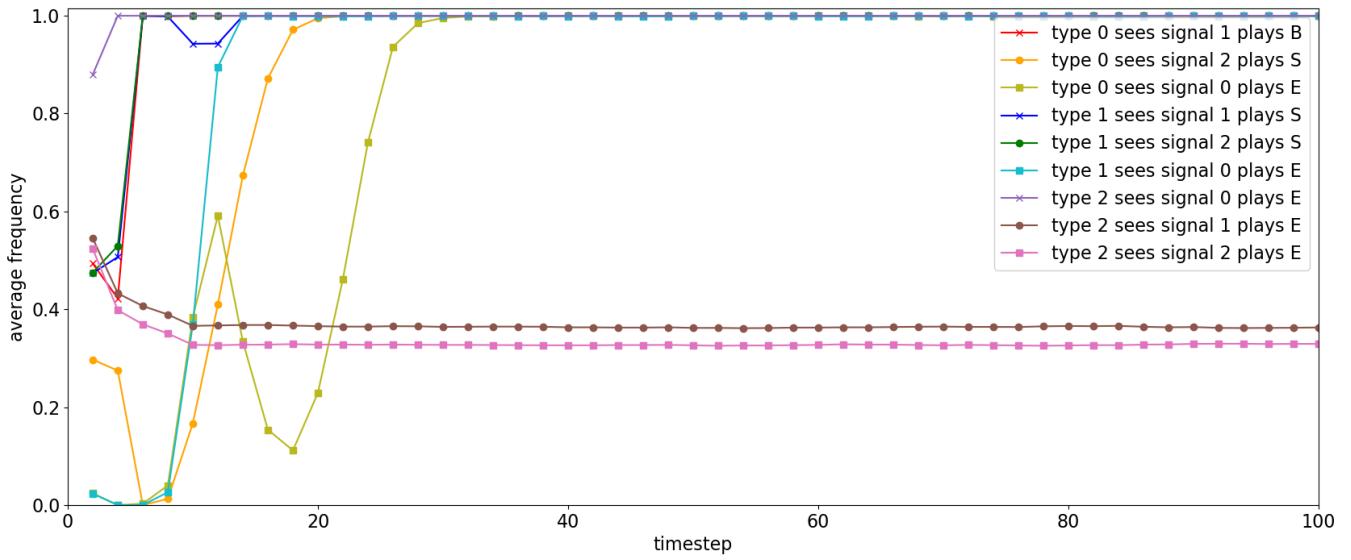
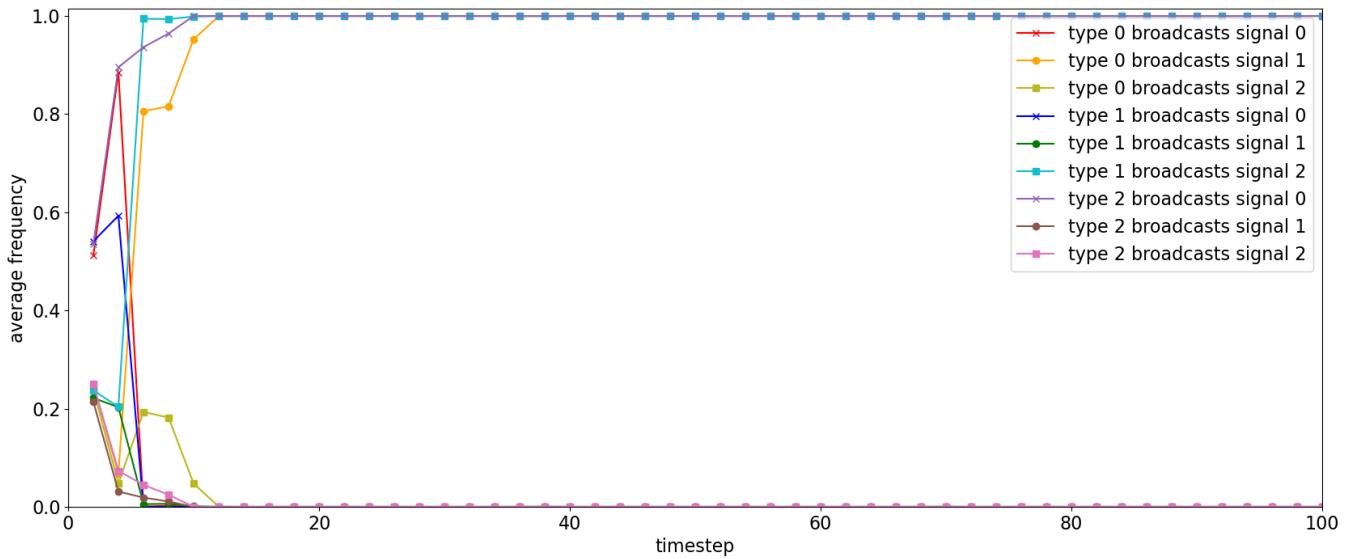
## Run # 10



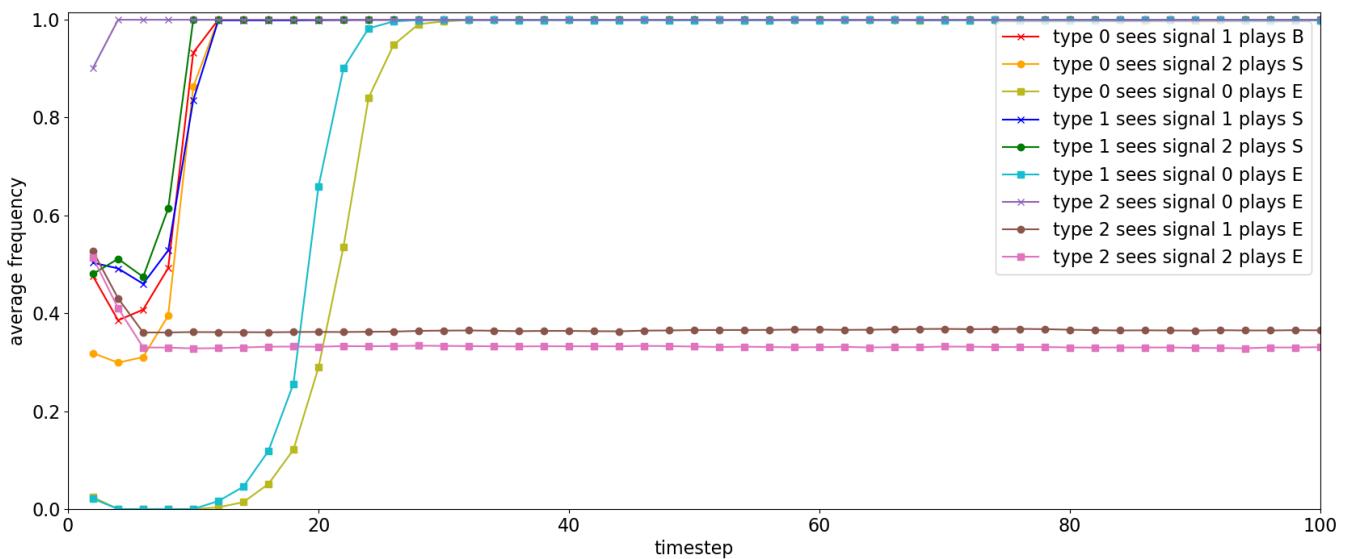
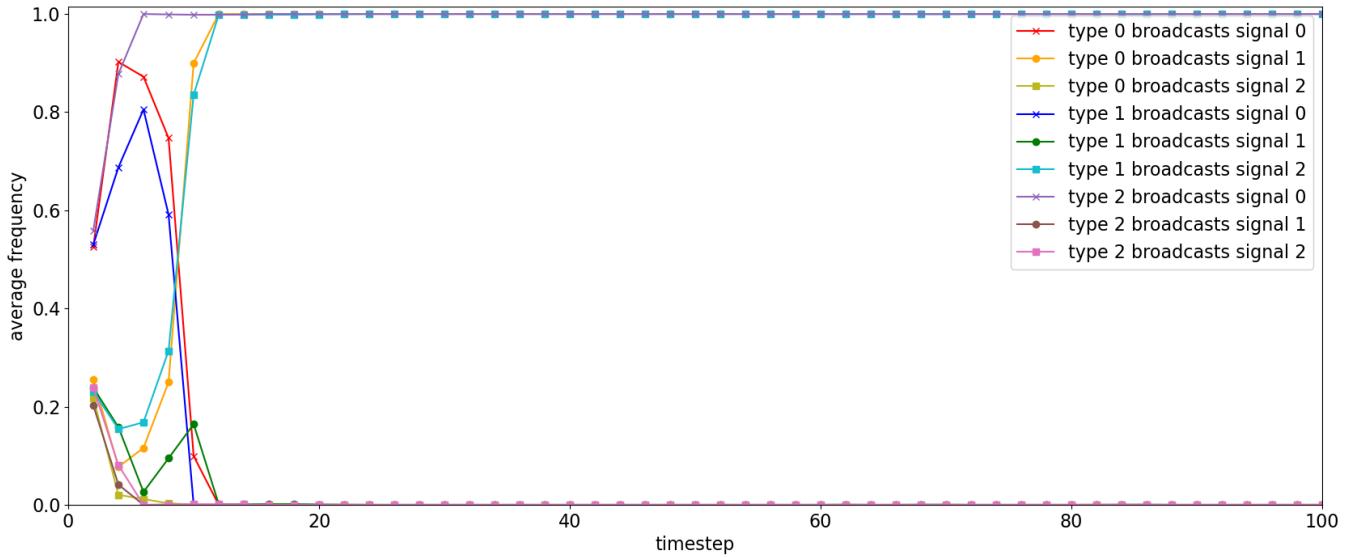
Run # 15



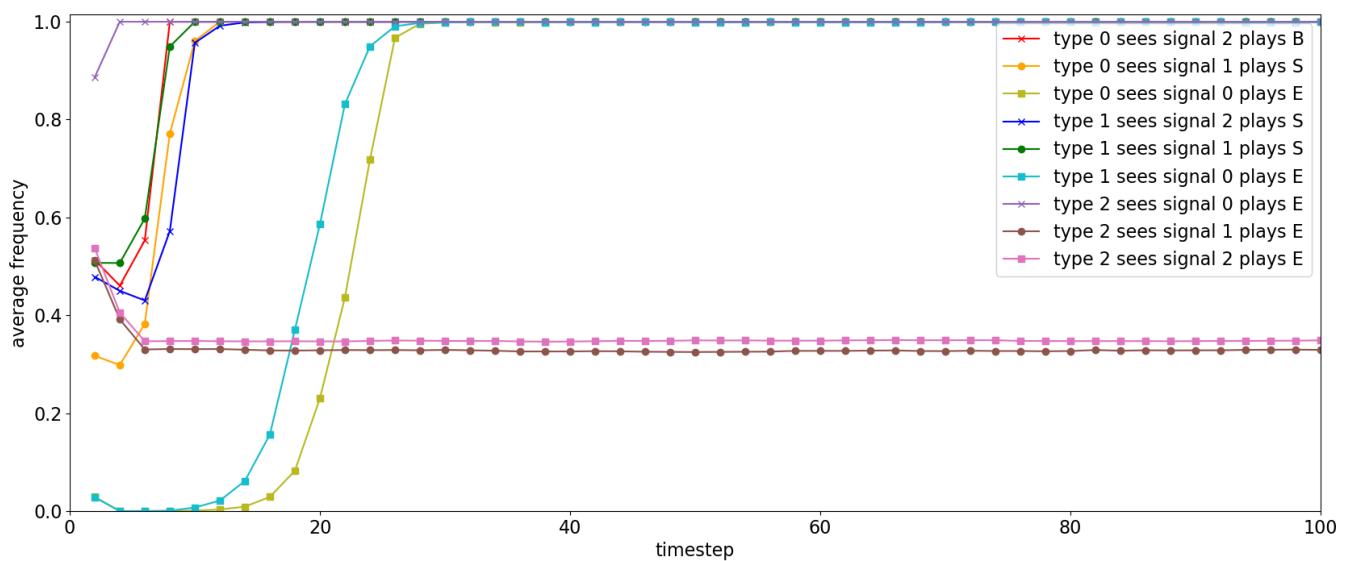
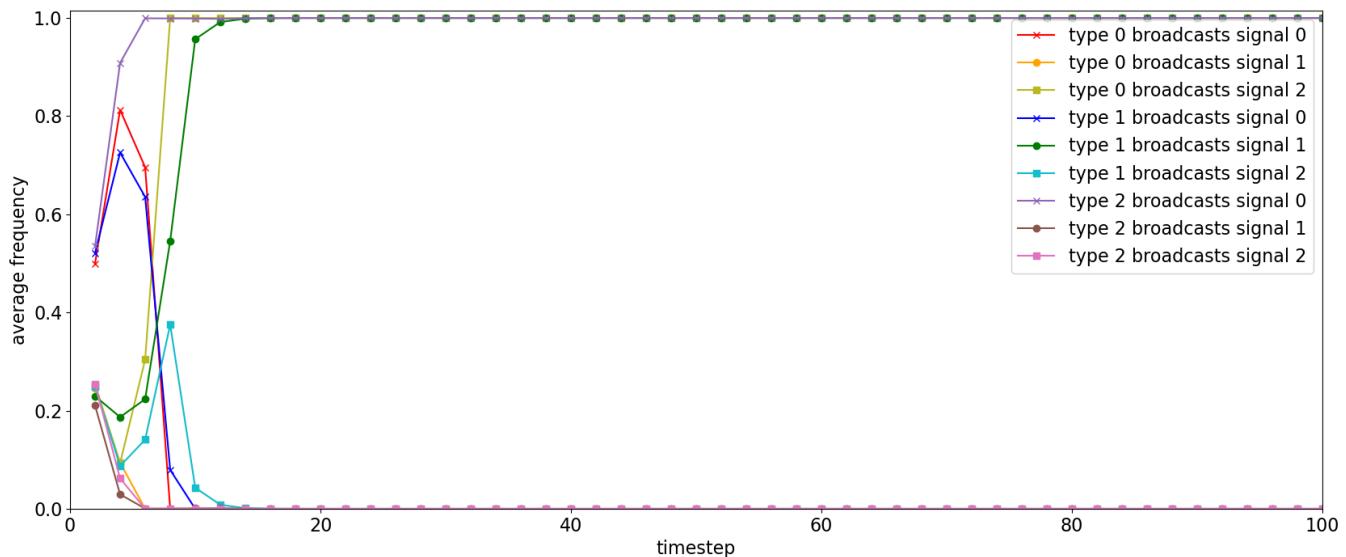
Run # 21



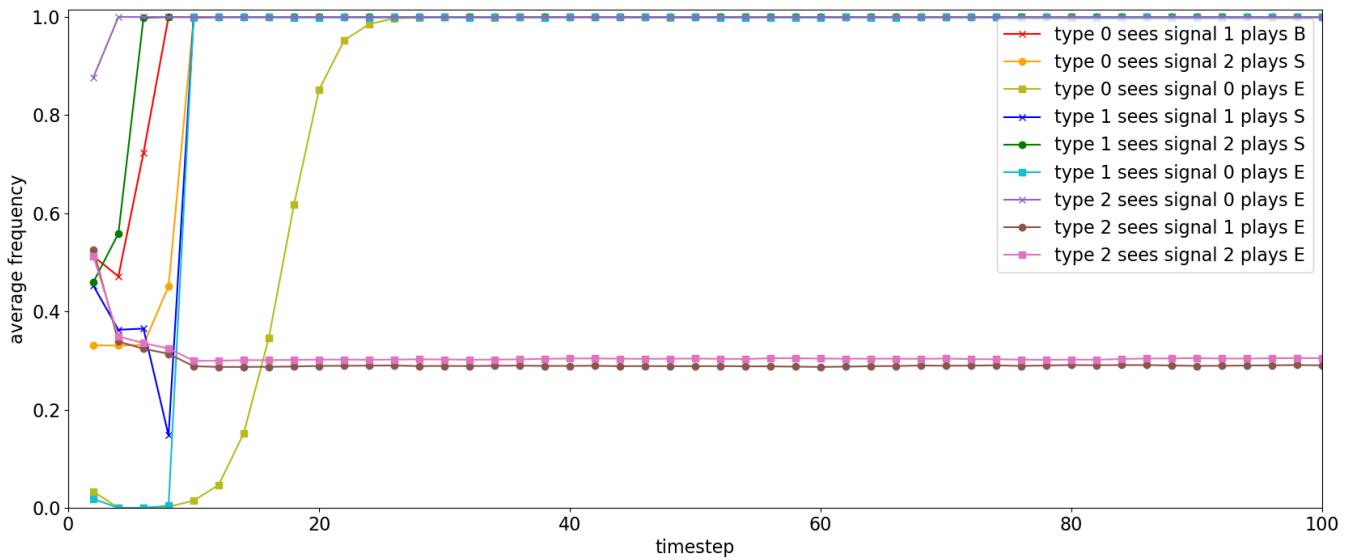
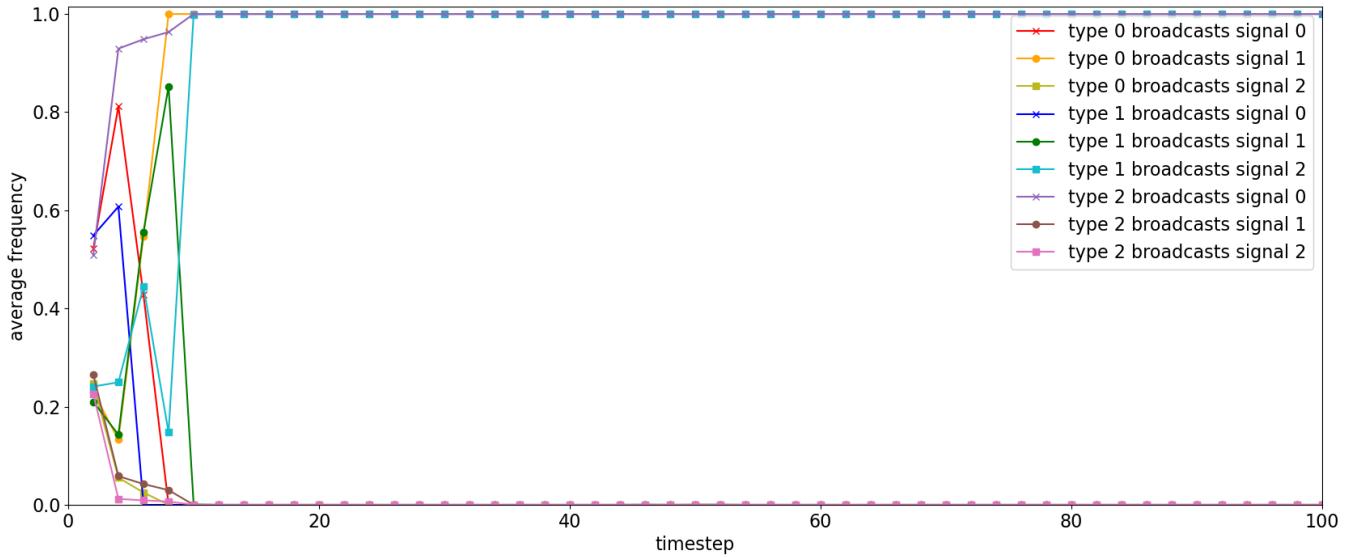
Run # 38



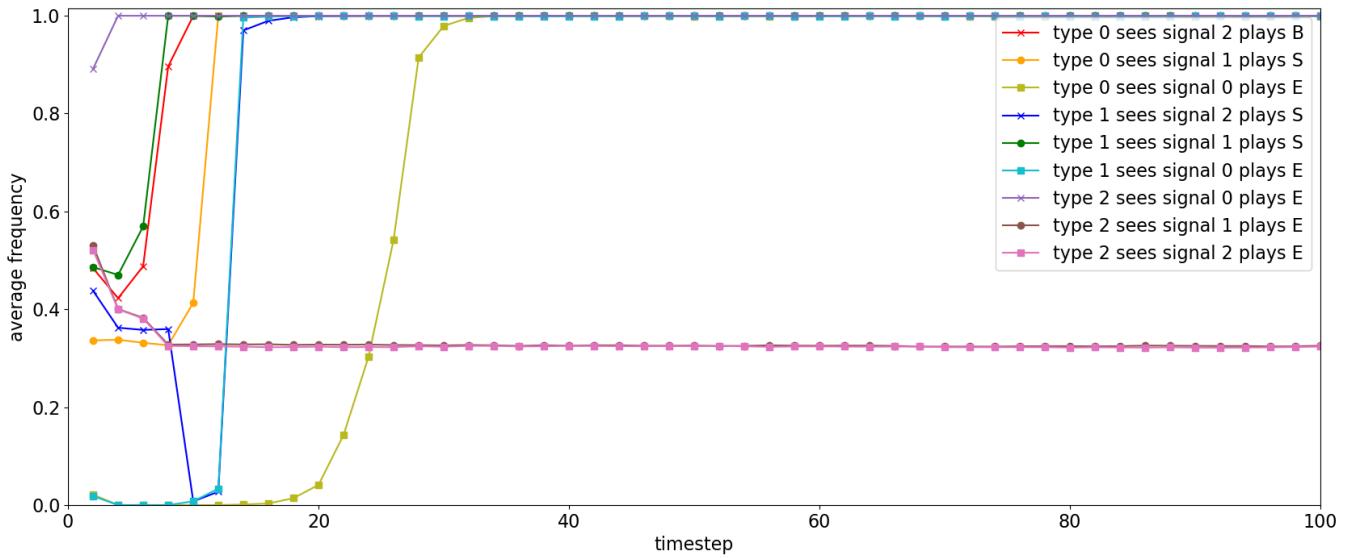
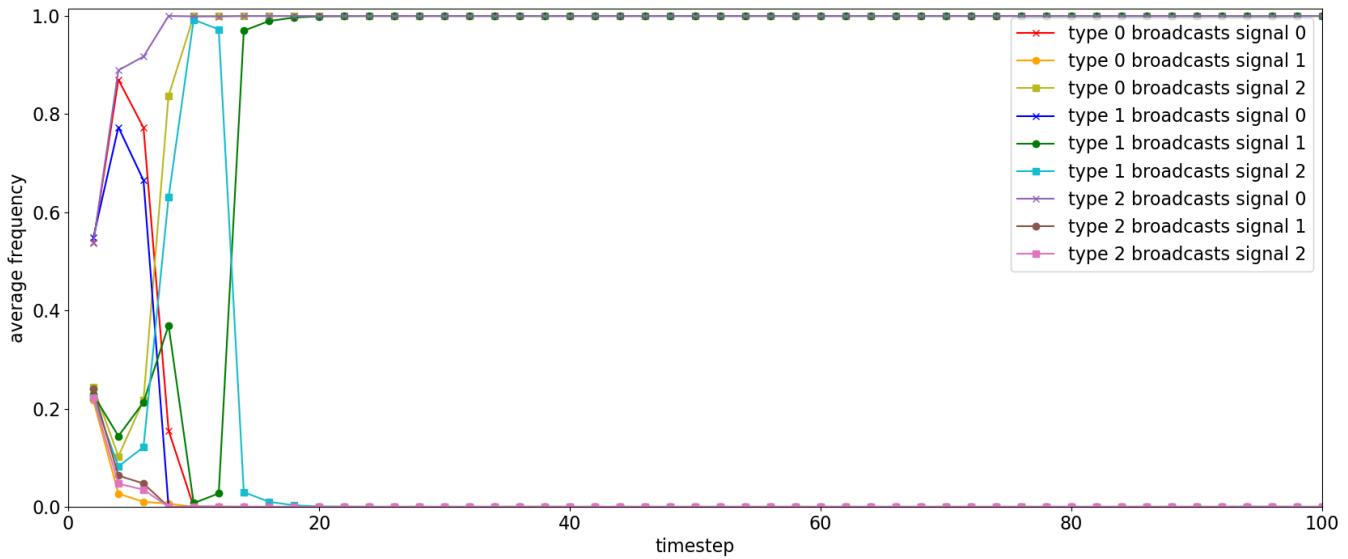
Run # 55



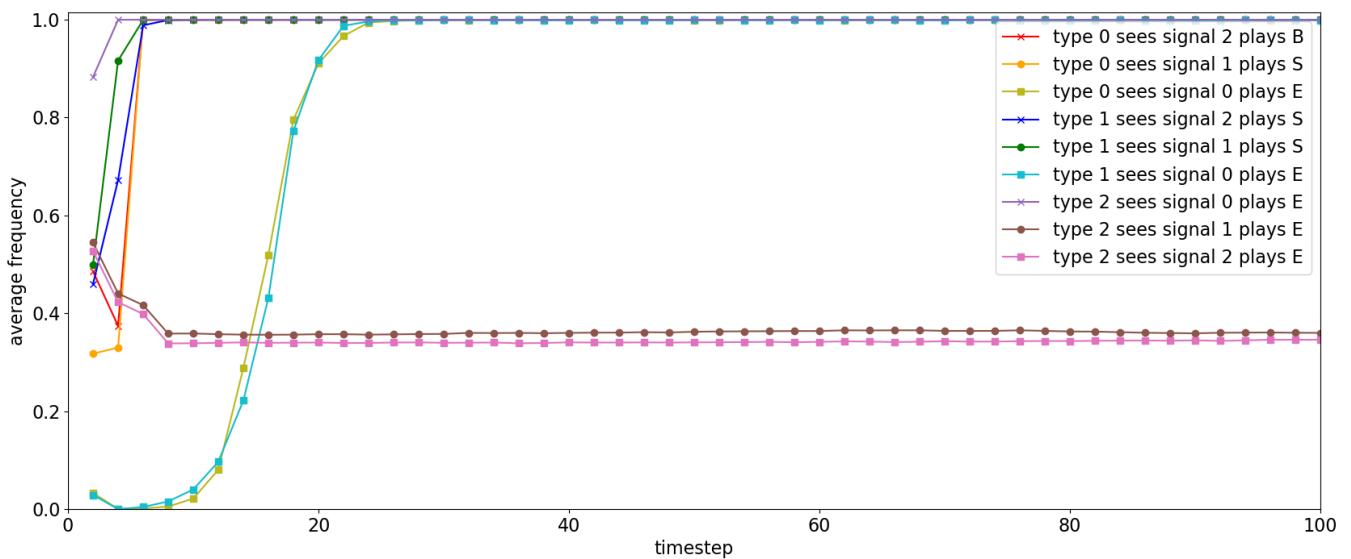
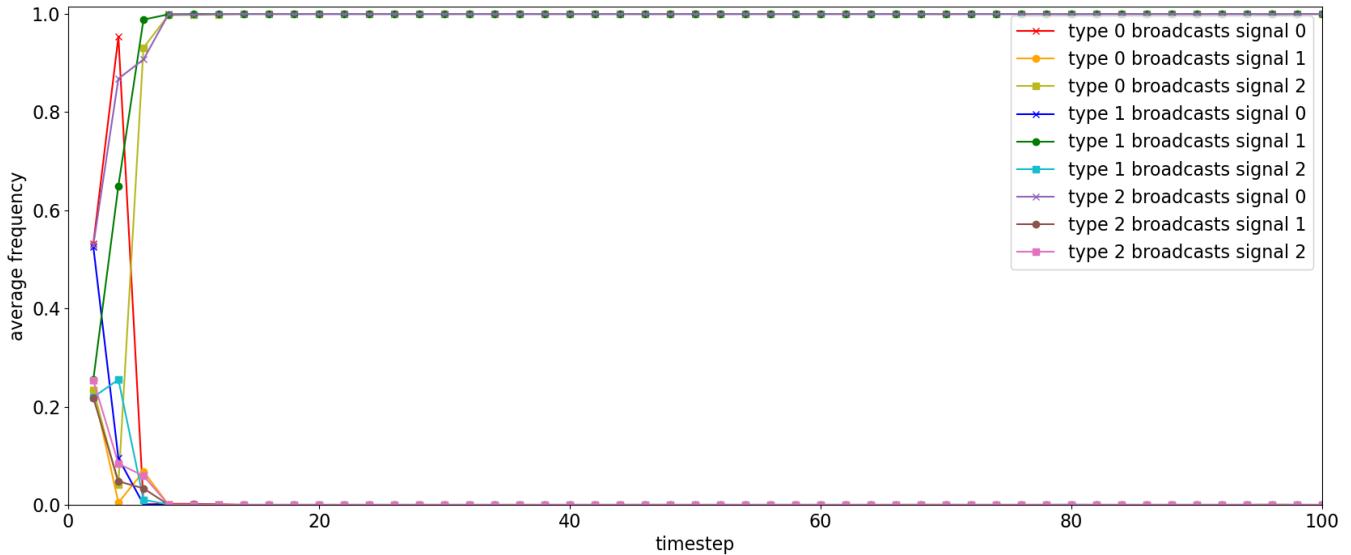
Run # 74



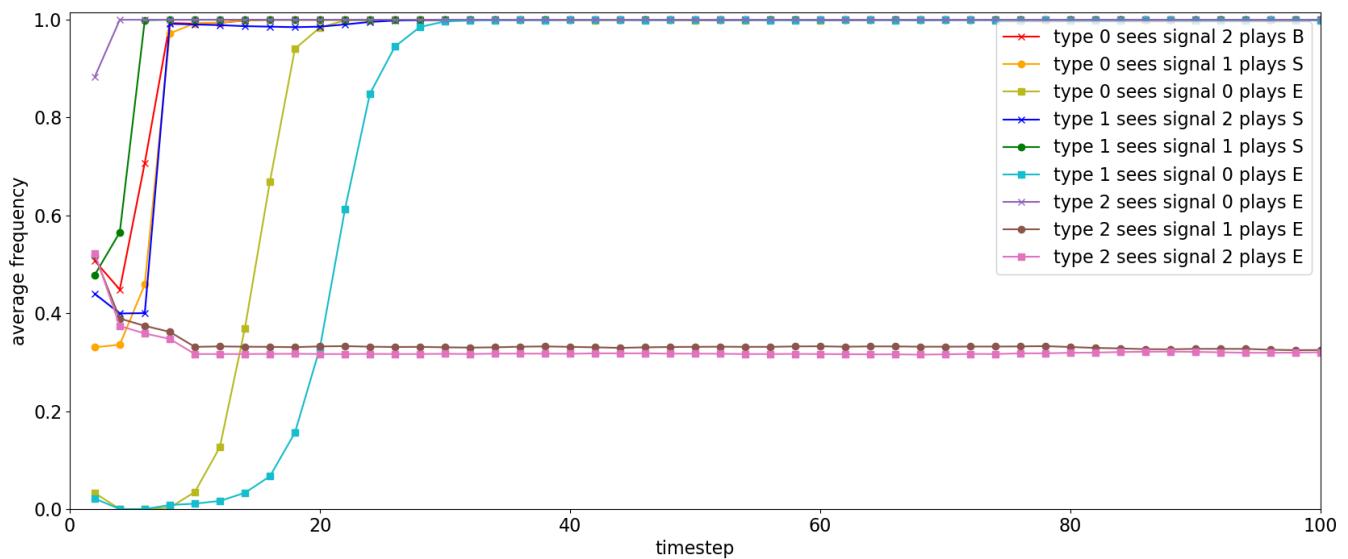
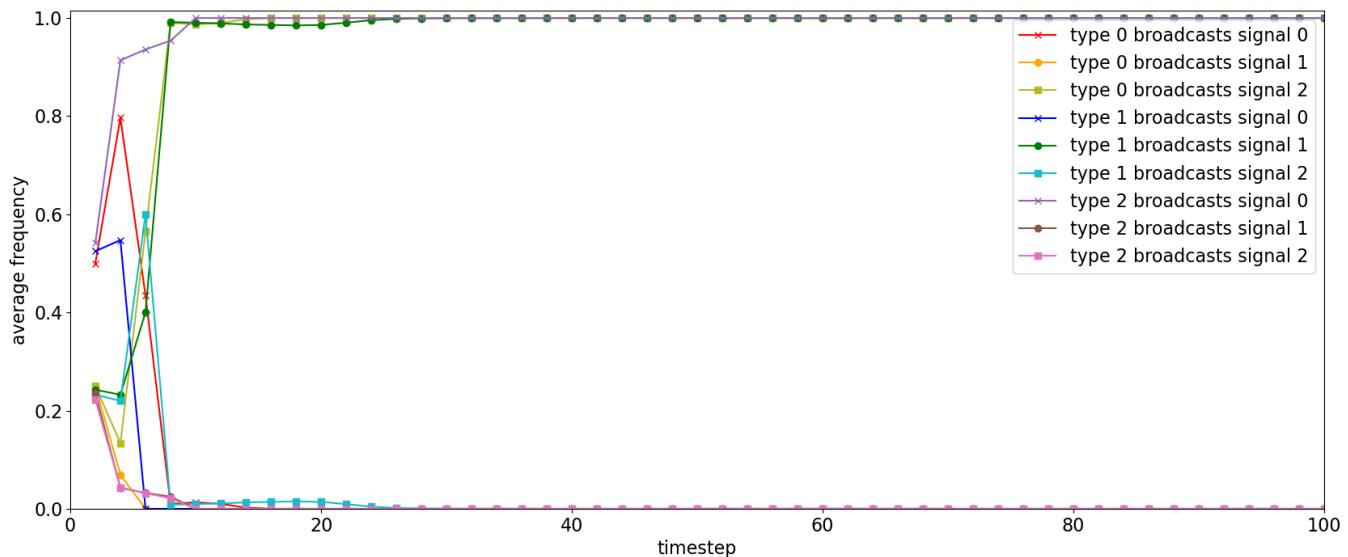
Run # 75



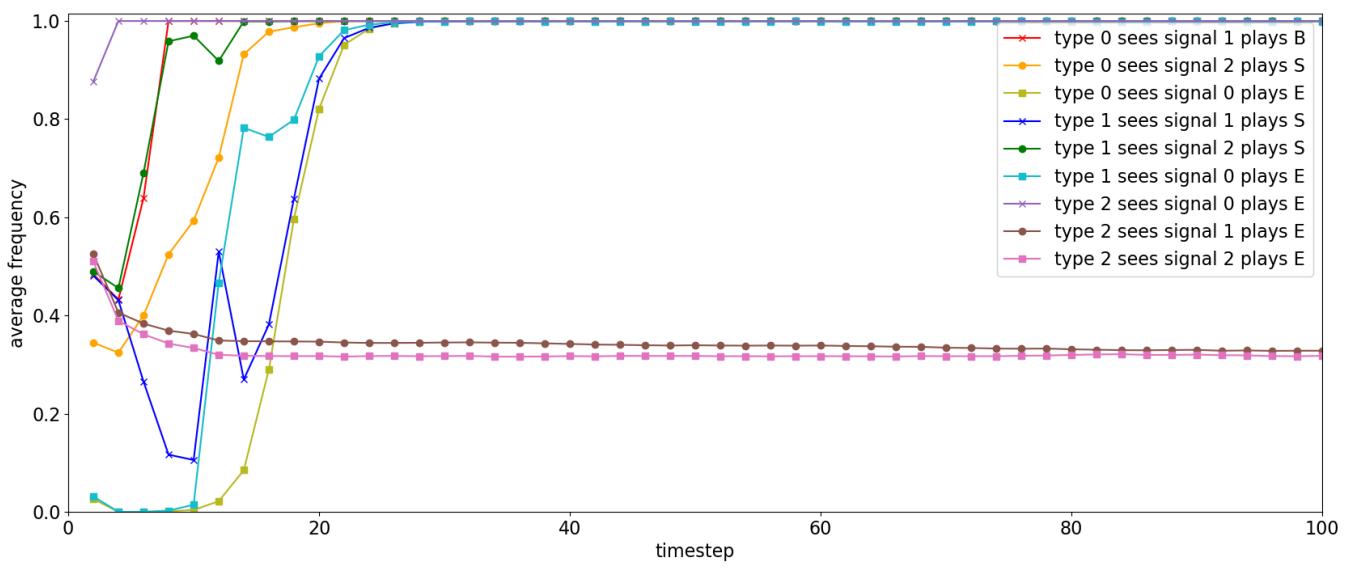
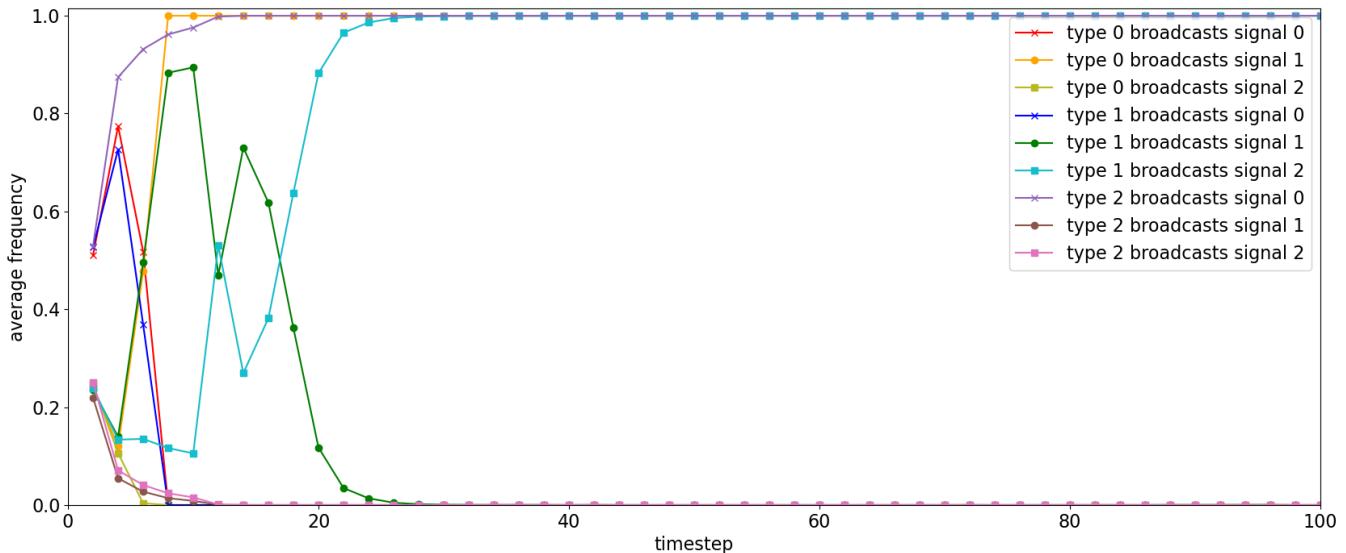
Run # 76



Run # 79



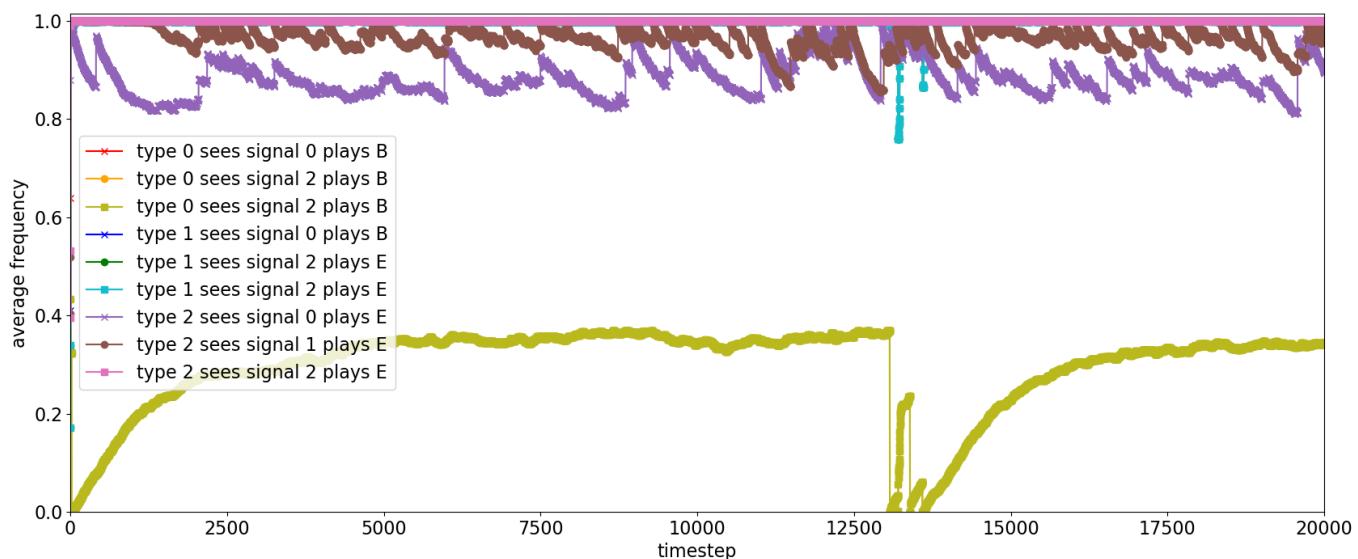
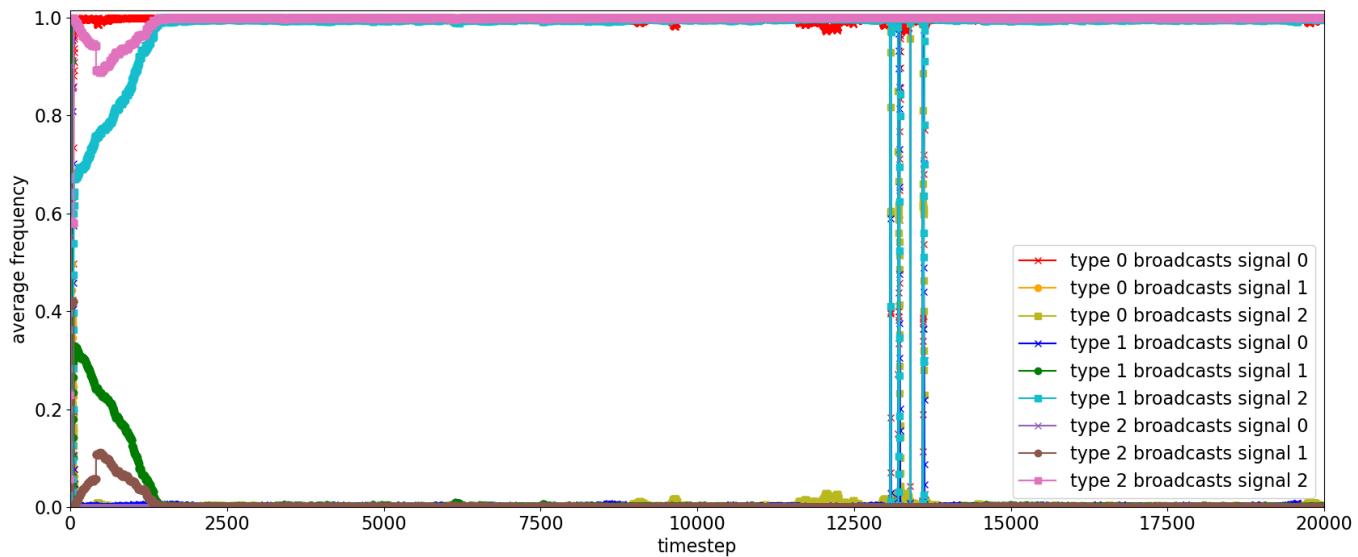
Run # 82



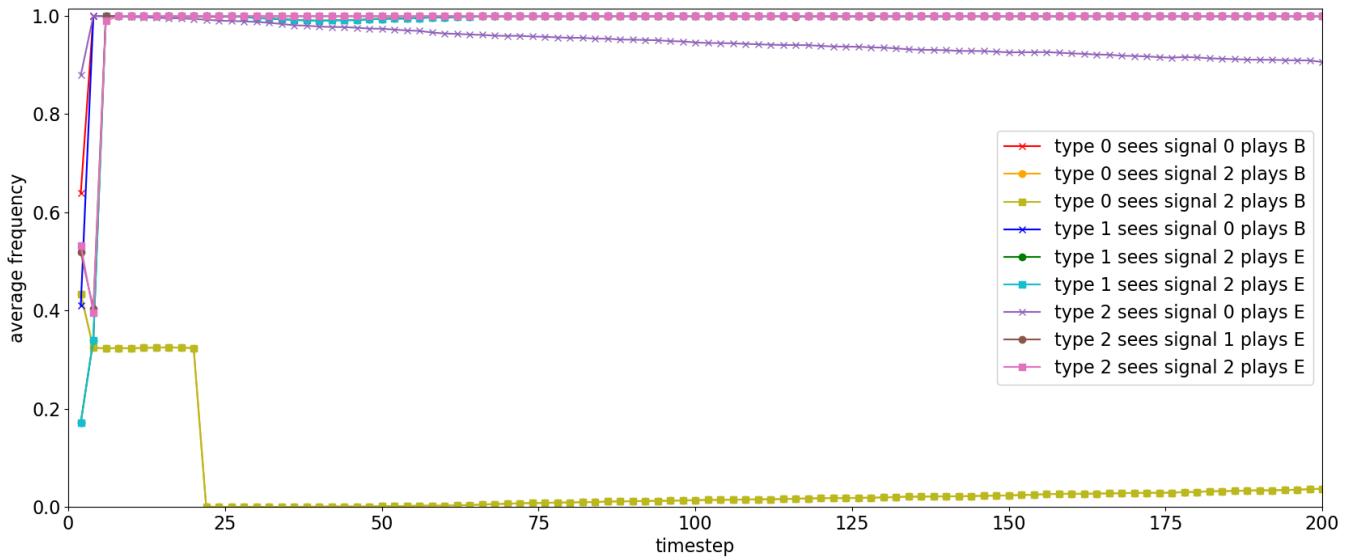
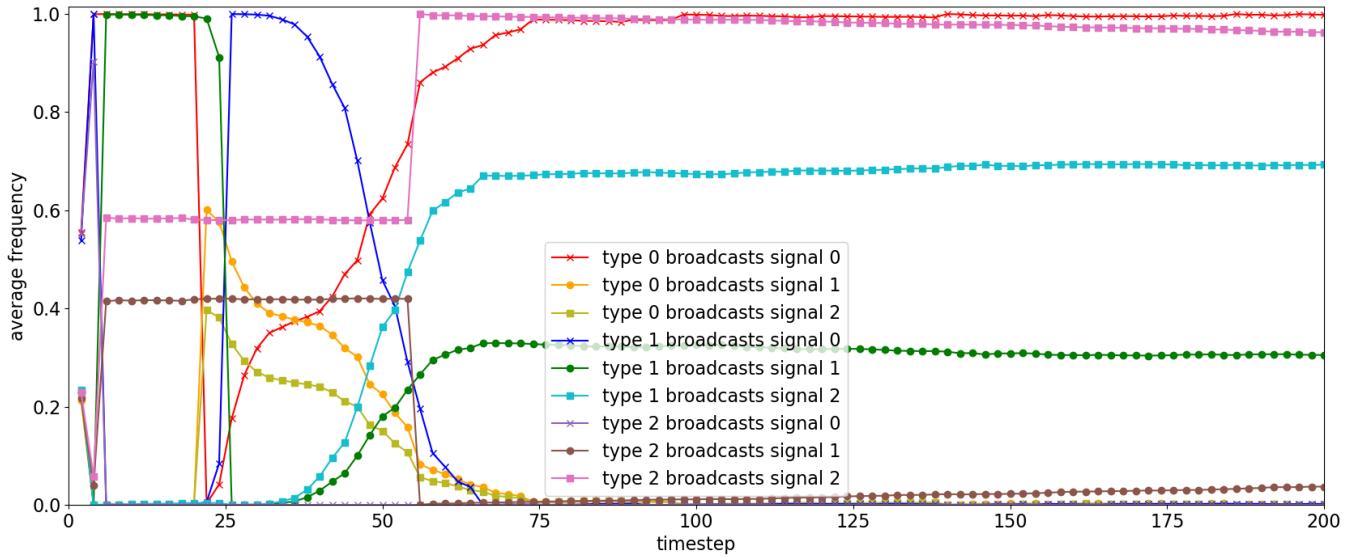
### **outcomes (xiv):**

(note: don't forget that agents who signal 0 treat all received signals as 0)

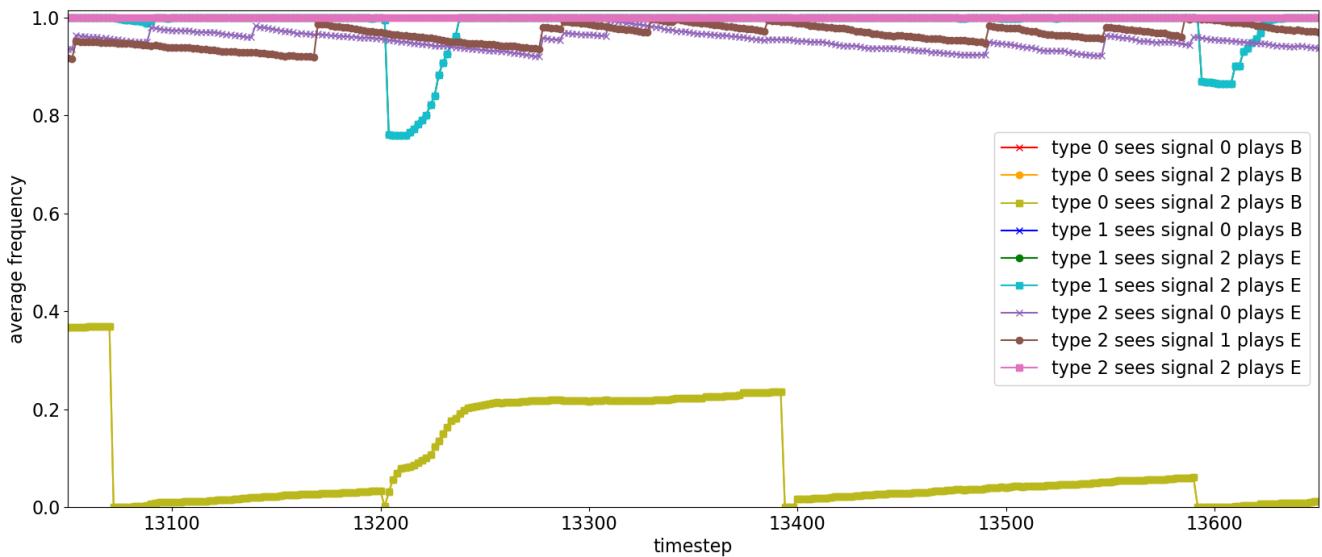
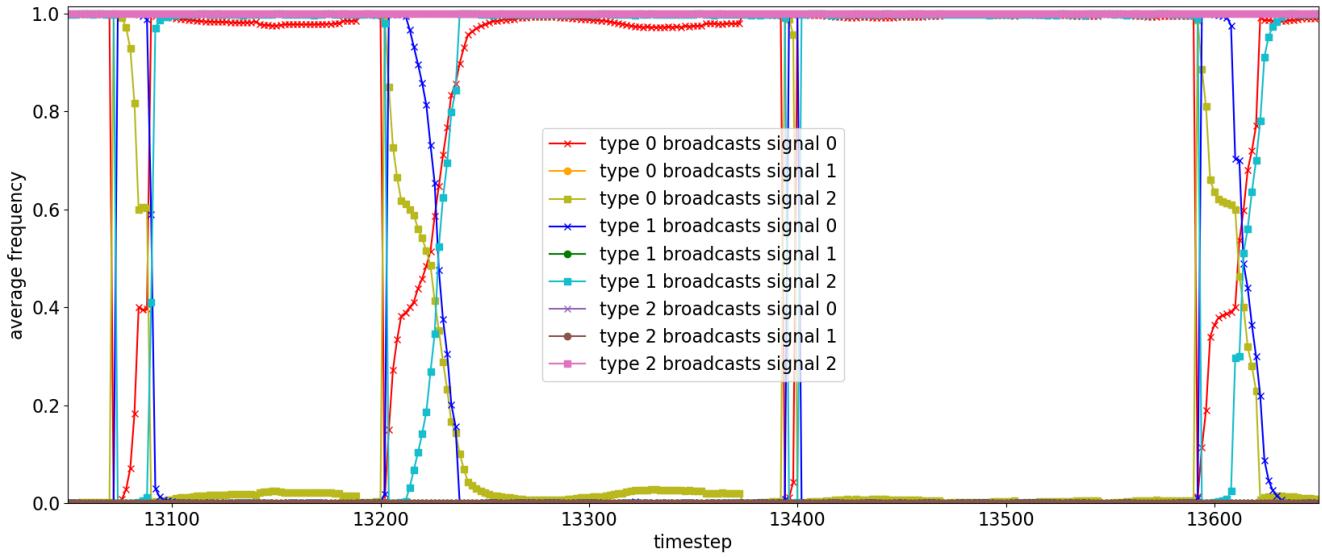
alpha = 0.1 and beta = 0.08. Run # 689



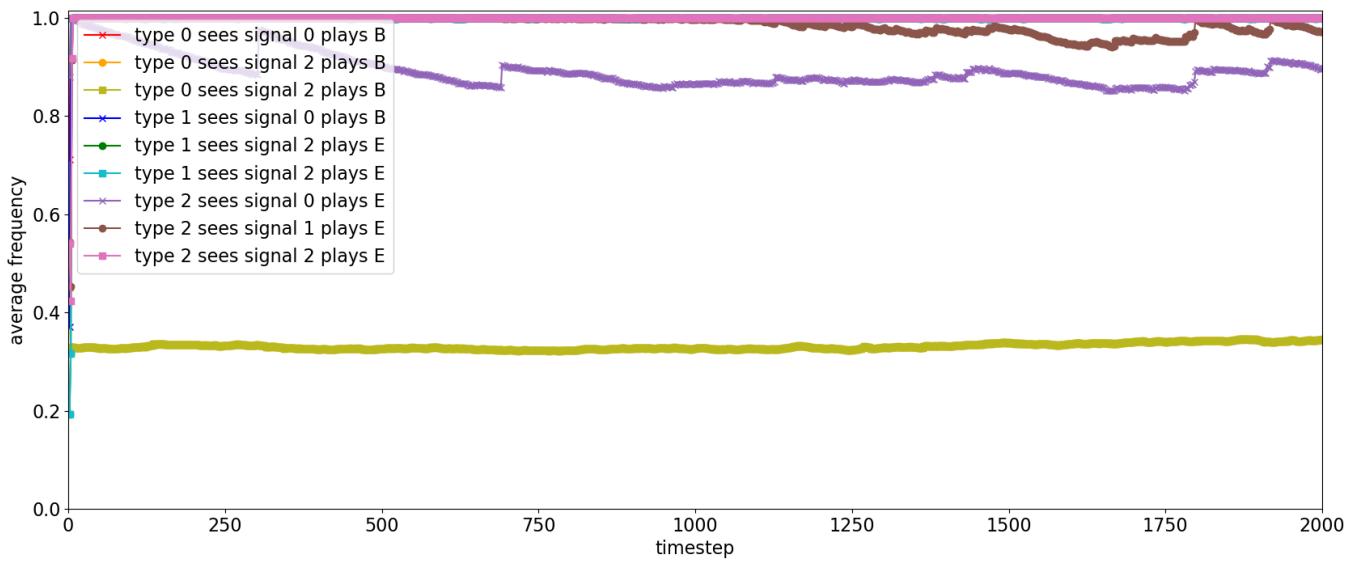
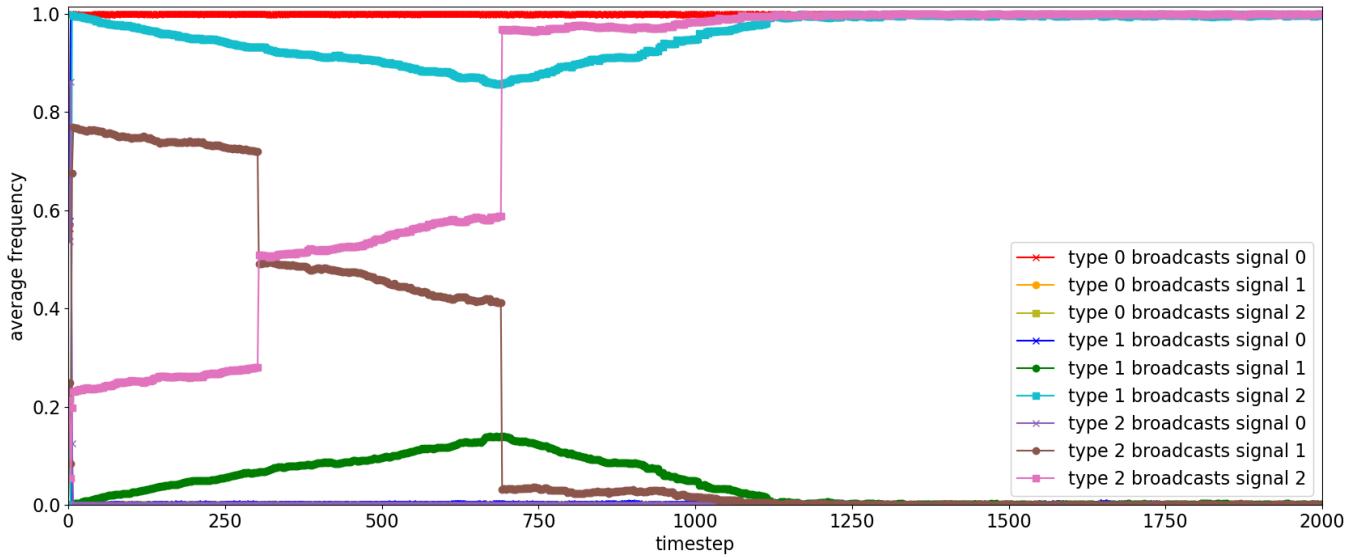
Continued on next page



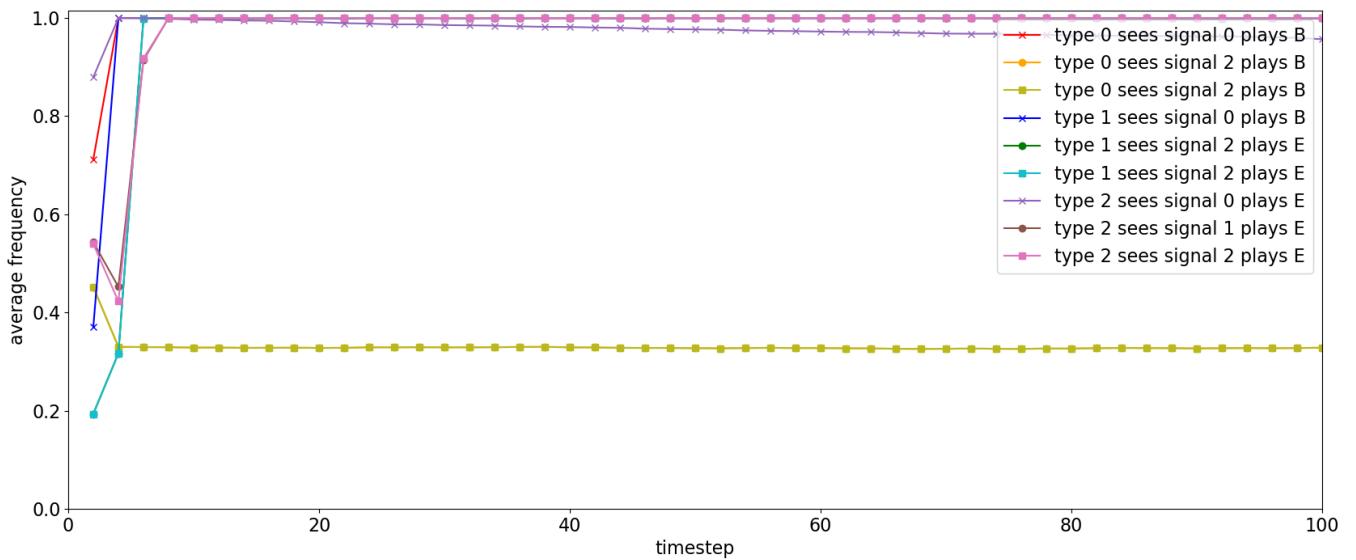
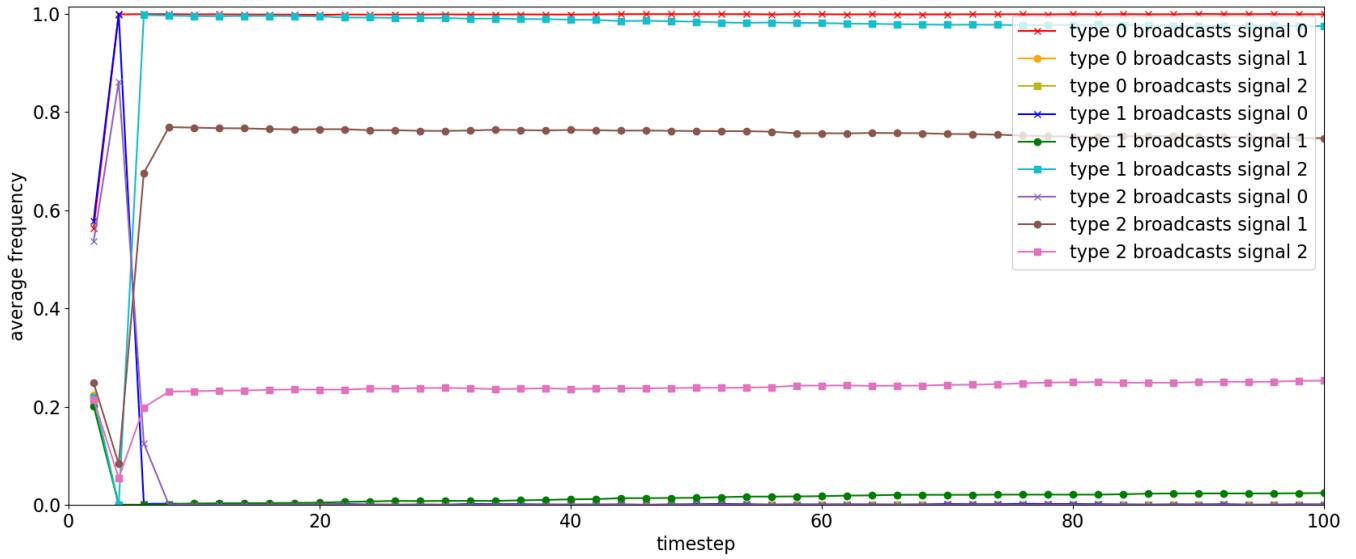
Continued on next page



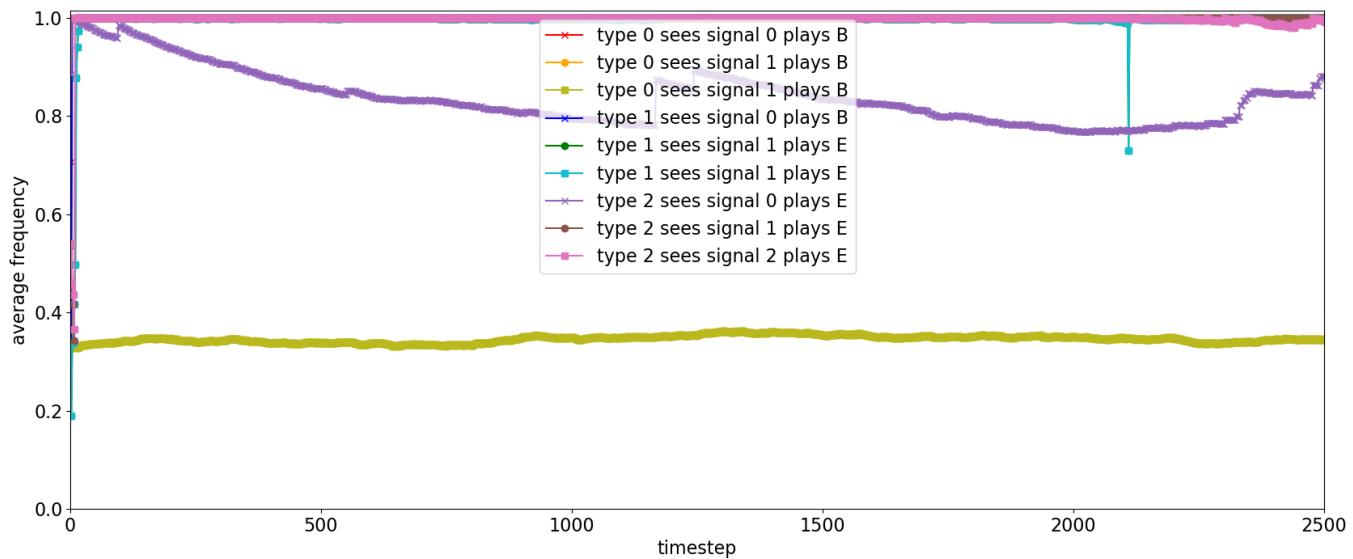
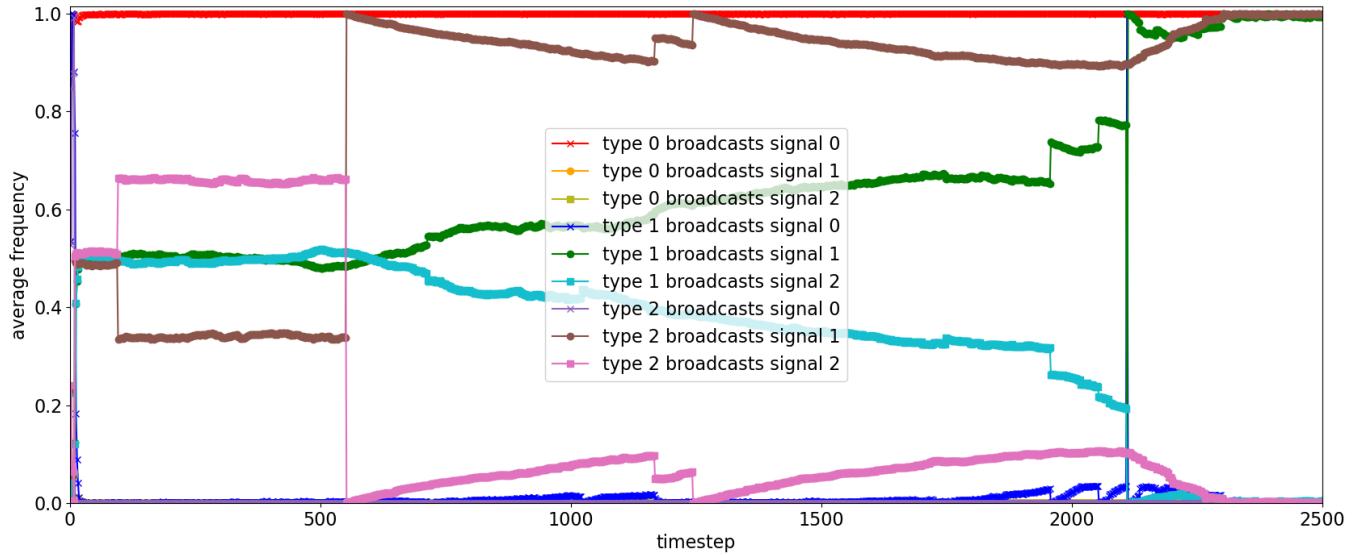
alpha = 0.2 and beta = 0.08 run # 293



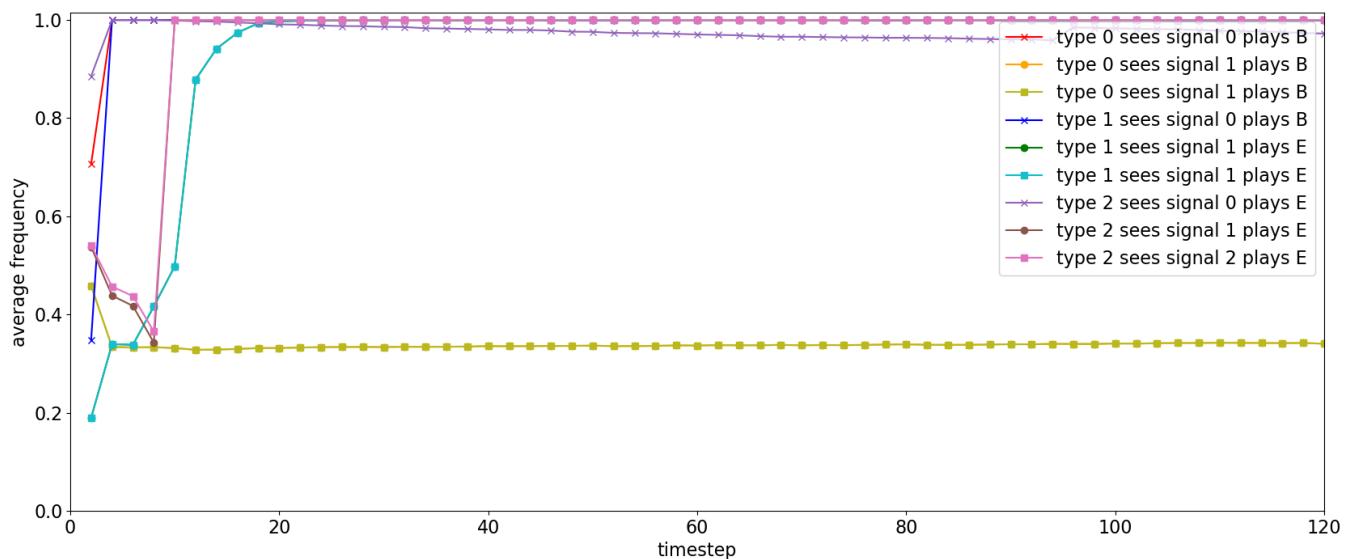
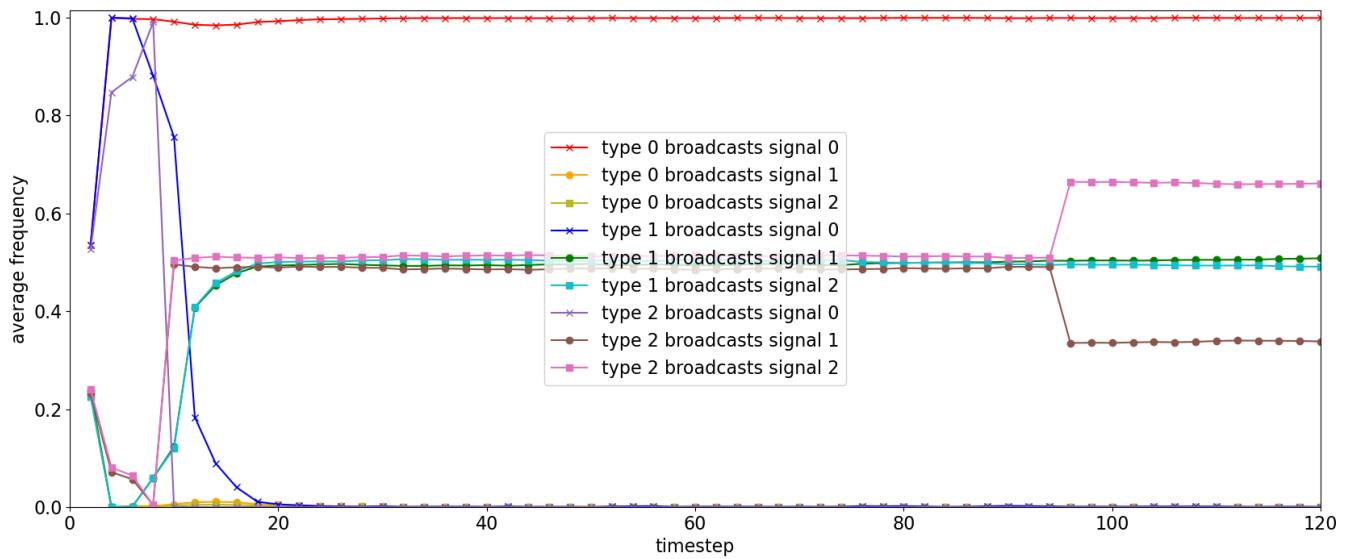
Continued on next page



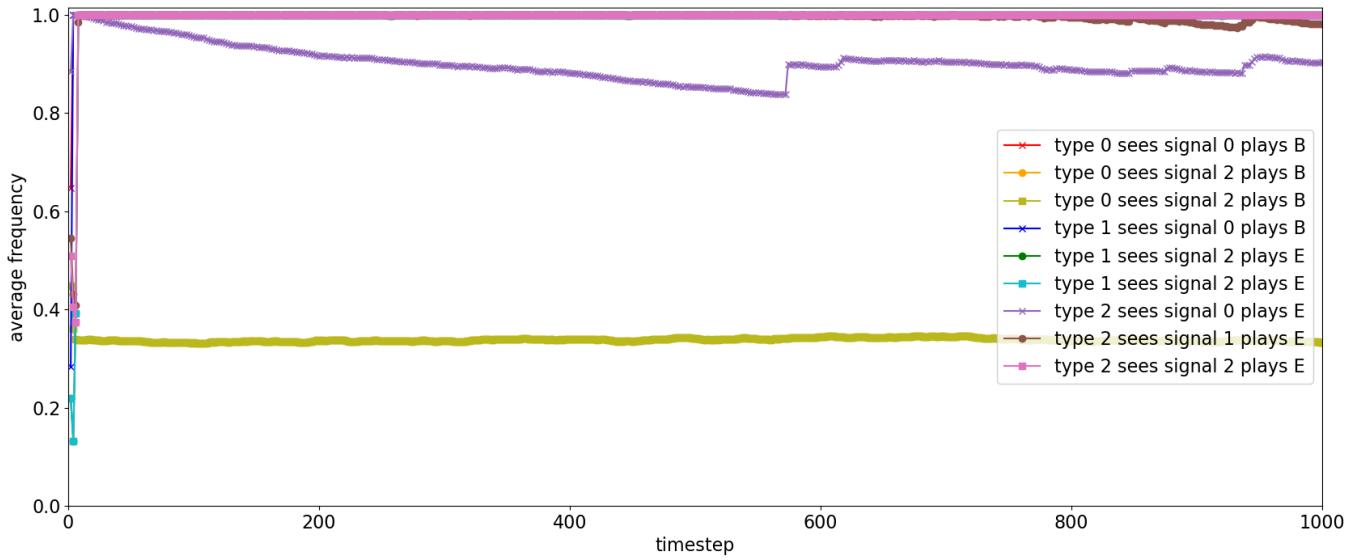
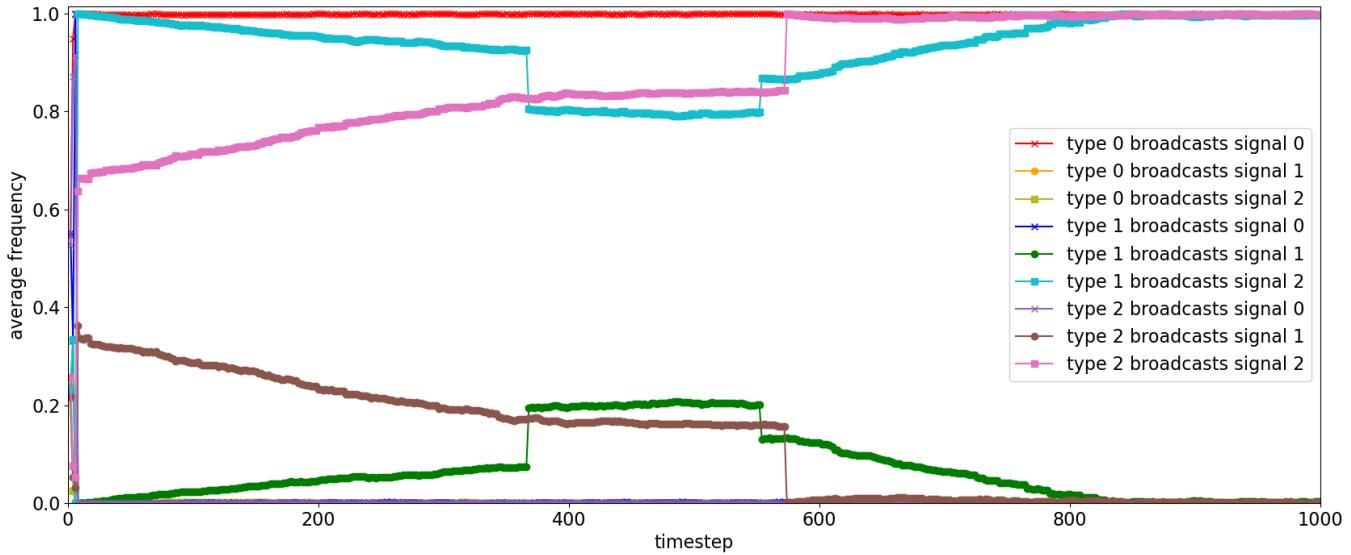
alpha = 0.2 and beta = 0.08 run # 304



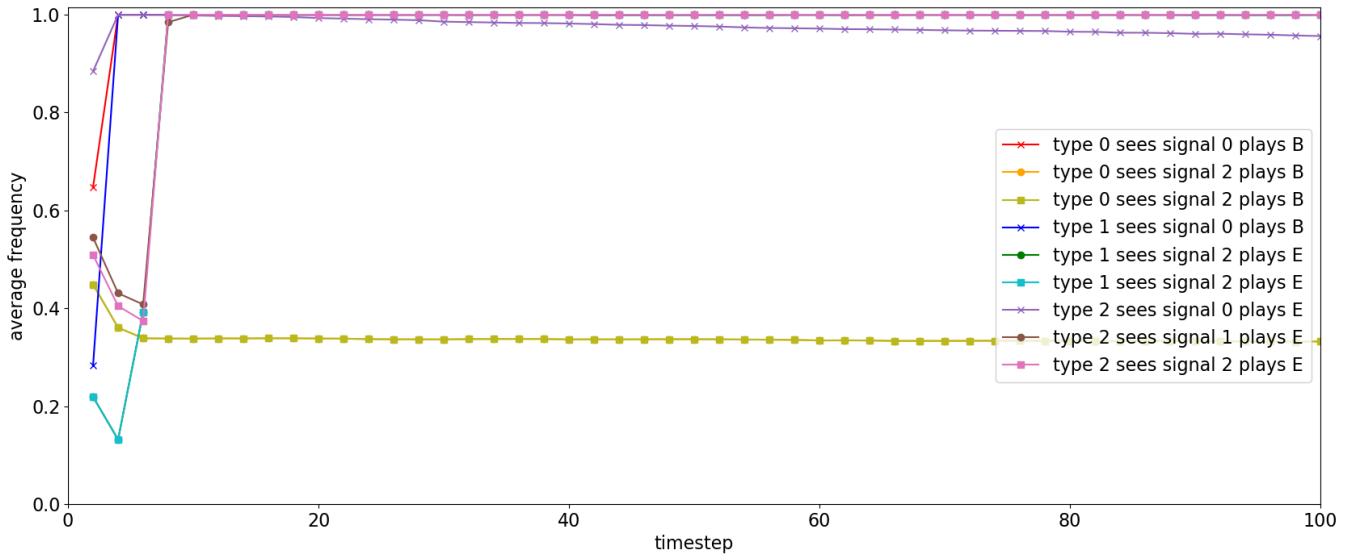
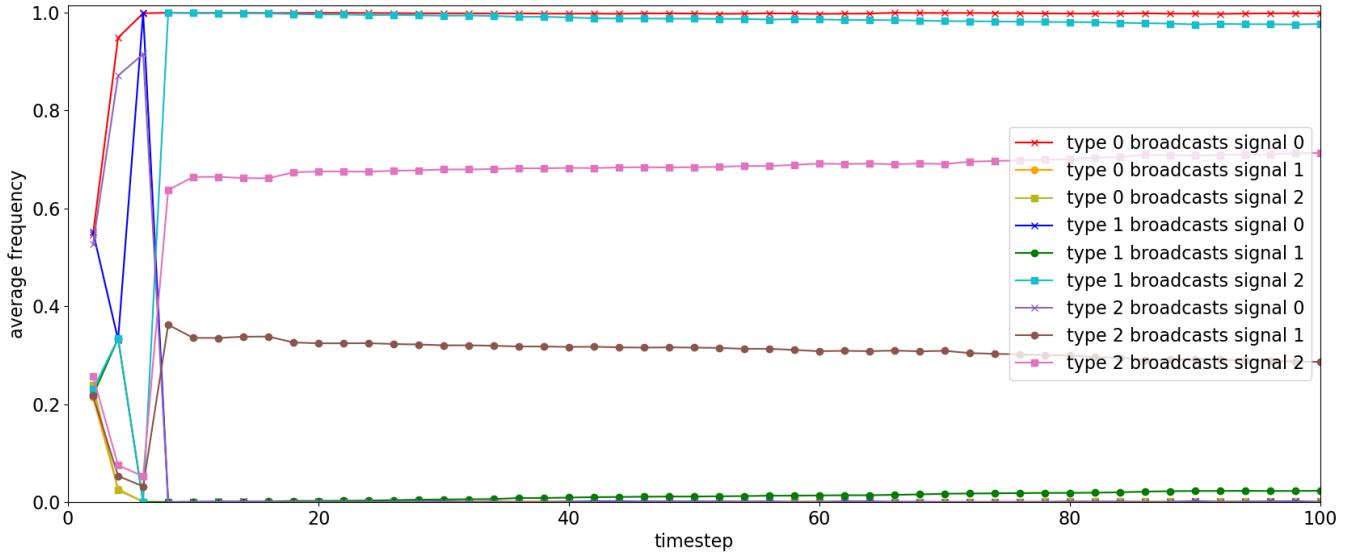
Continued on next page



alpha = 0.2 and beta = 0.1 run # 497



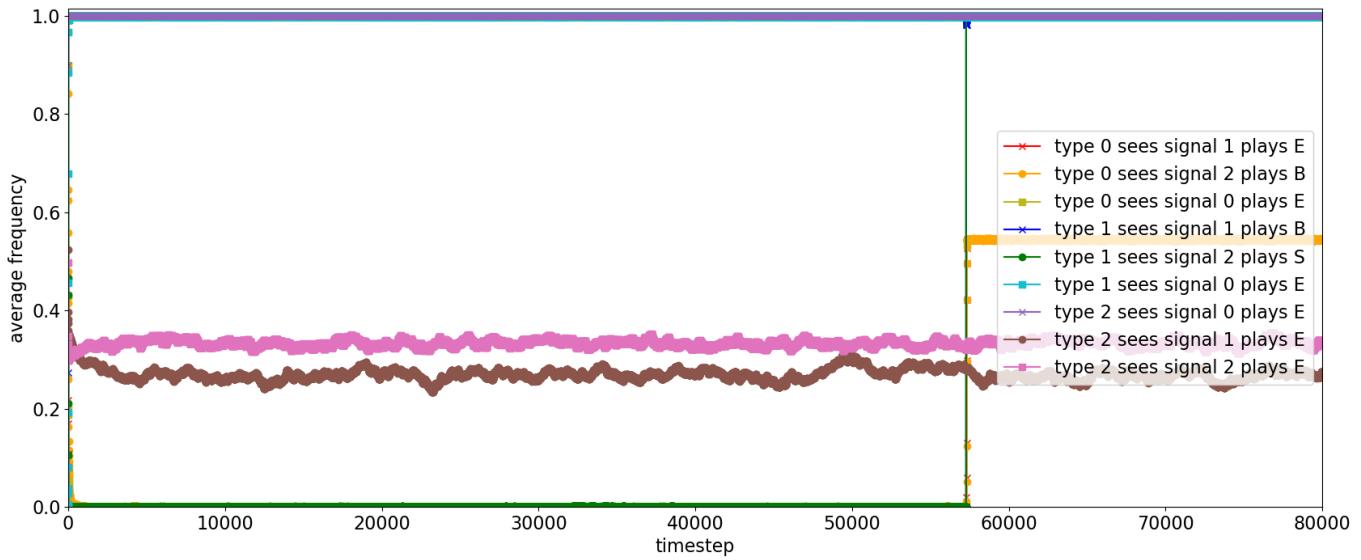
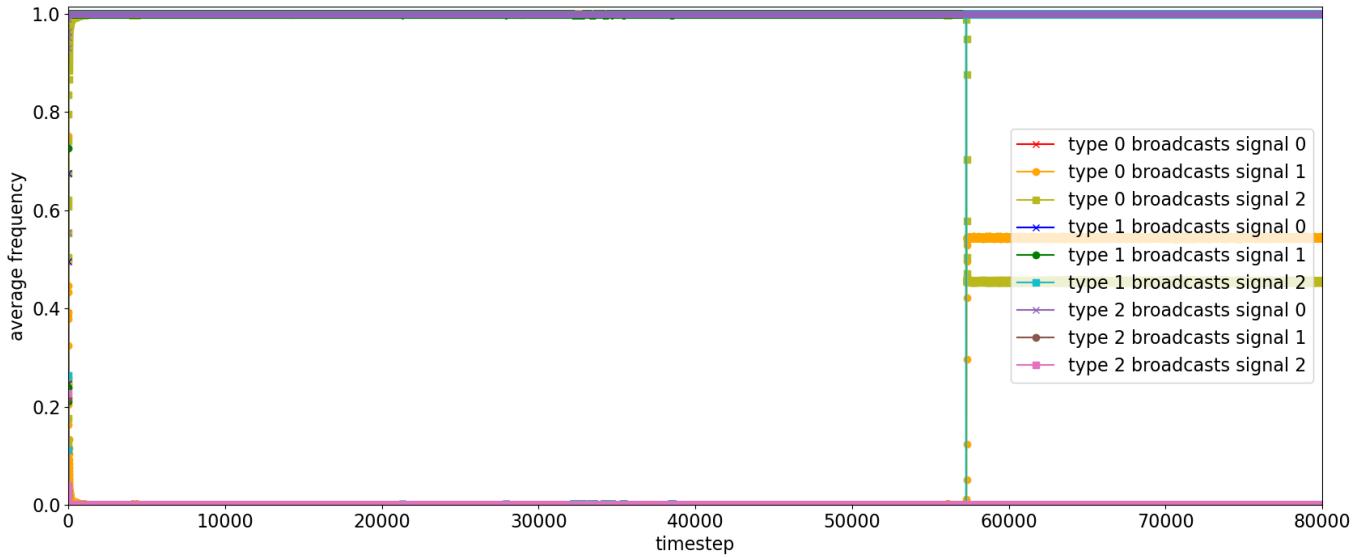
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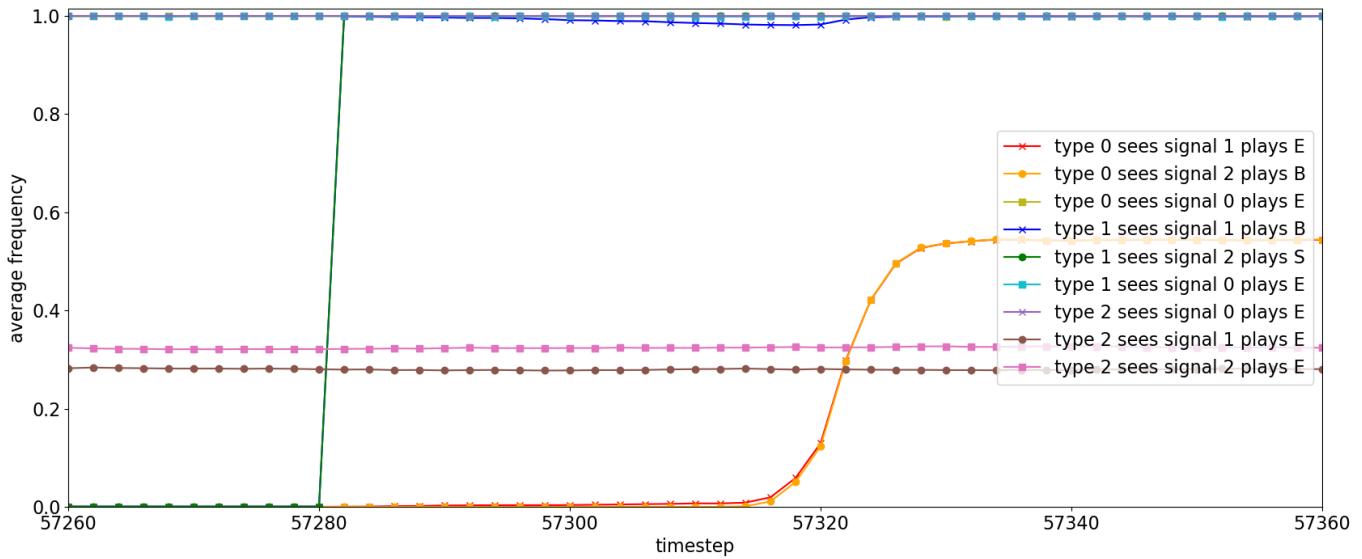
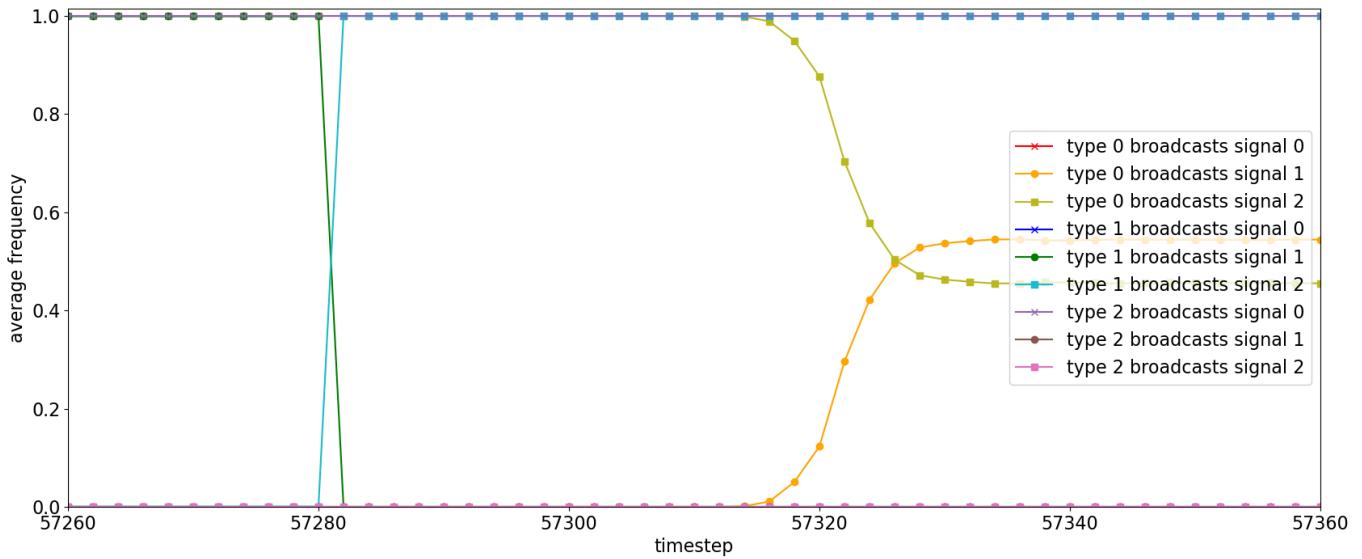
**outcomes (xv):**

(note: don't forget that agents who signal 0 treat all received signals as 0)

alpha = 0.3 and beta = 0, Run # 226



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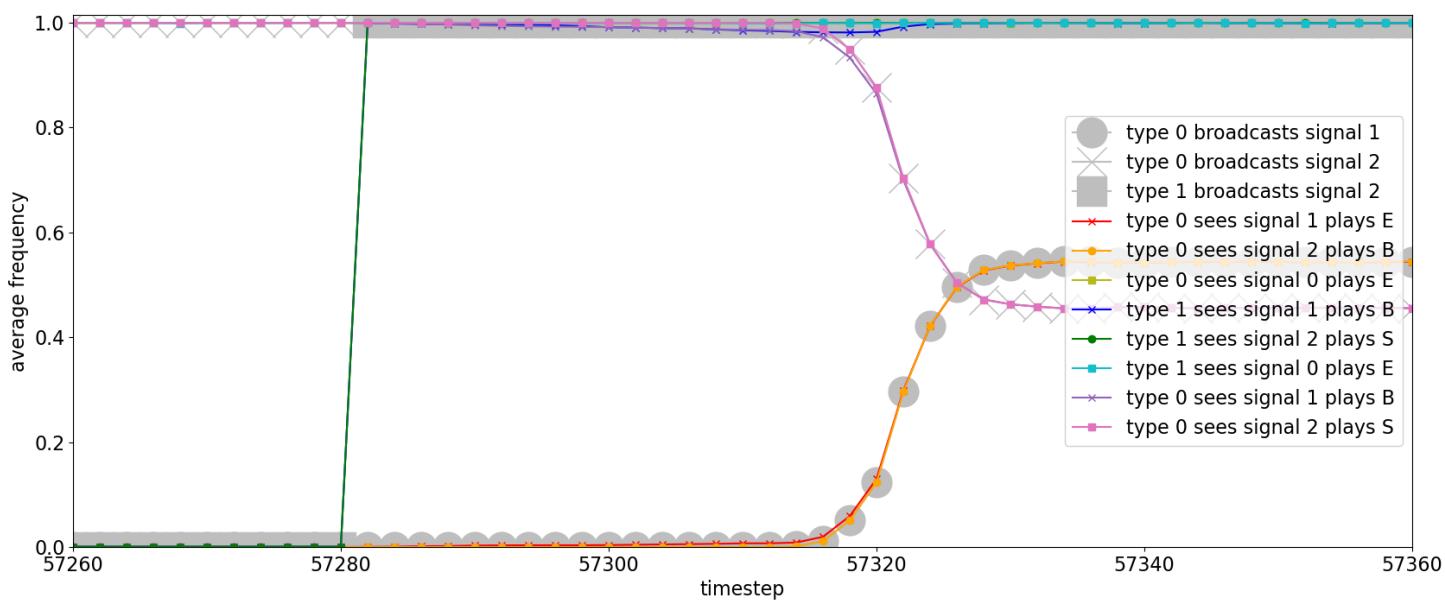


First type 0 sends signal 2 and type 1 sends 1. Additionally, type 0 plays E on signal 1 and type 1 plays B on signal 1. So, type 1 can unilaterally benefit from switching to both signaling 2 and playing S on signal 2 since they were already failing to coordinate with the type 0s all of the time. But now signal 2 is noisy because both types 0 and 1 are using it. Now, it just so happens that the mutation leading to type 0s signaling 1 co-occurs with the mutations to play E on signal 1 and B on signal 2. This leaves type 0's with two symbiotic strategy profiles that depend on each other:

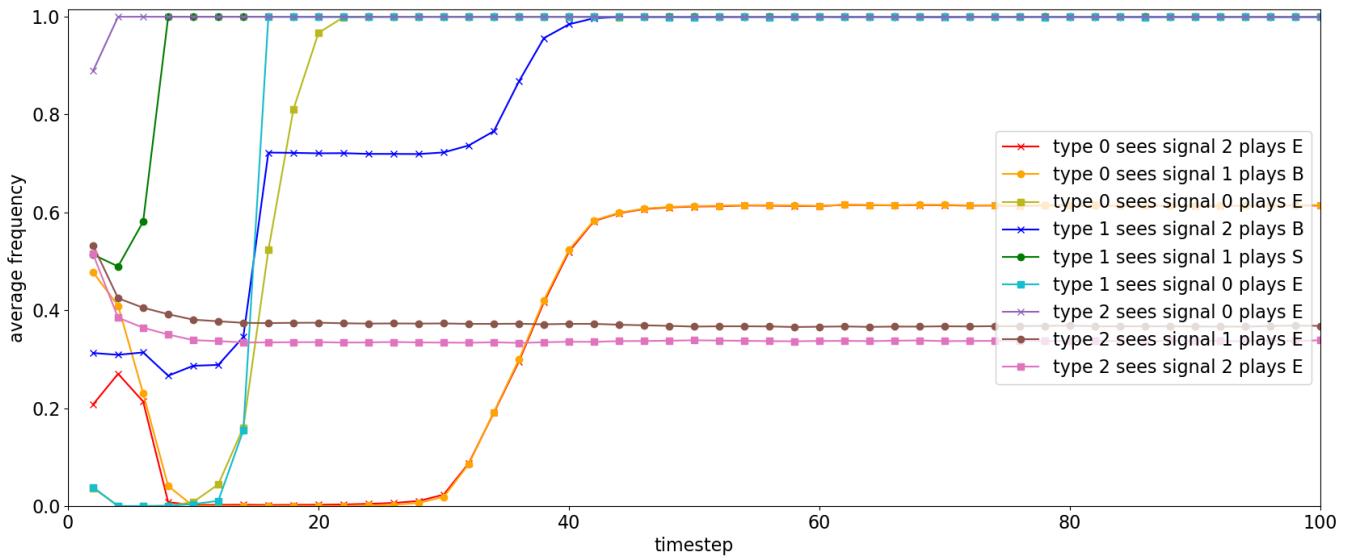
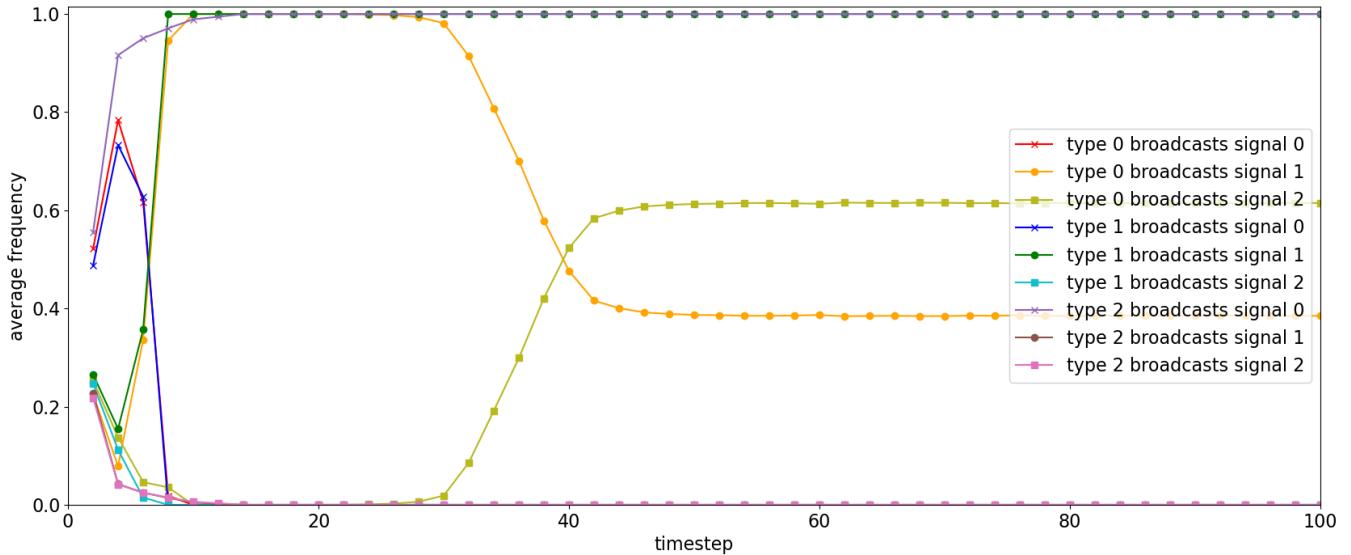
	broadcast signal	play when sees 0	play when sees 1	play when sees 2
first profile	2	E	B	S
second profile	1	E	E	B
hypothetical profile	1	E	B	B

Since the second profile plays B (type 0's preferred action) with agents who signal 2, further increasing the proportion of agents who have the second profile decreases its benefit since this entails that there are fewer agents who signal 2. Likewise, the first profile plays B with agents who signal 1, so further increasing the proportion of agents with the first profile decreases the benefit of the first profile because that entails there being fewer agents who signal 1. Holding all else fixed, one can check that the first and second strategy profiles have equal expected utility when there are 1500 agents with the first profile and 1800 agents with the second profile (see spreadsheet named "a3b0\_run226").

But why does the second profile not mutate to playing B on signal 1? Well holding the final state of the simulation fixed, with 1500 agents with the first profile and 1800 agents with the second profile (in reality there were only 1797 agents with the second profile due to mutation), one can calculate that it would require 501 type 0 agents simultaneously switching from the second profile to the hypothetical profile for the hypothetical profile to have greater expected utility than the second profile (see spreadsheet named "a3b0\_run226").



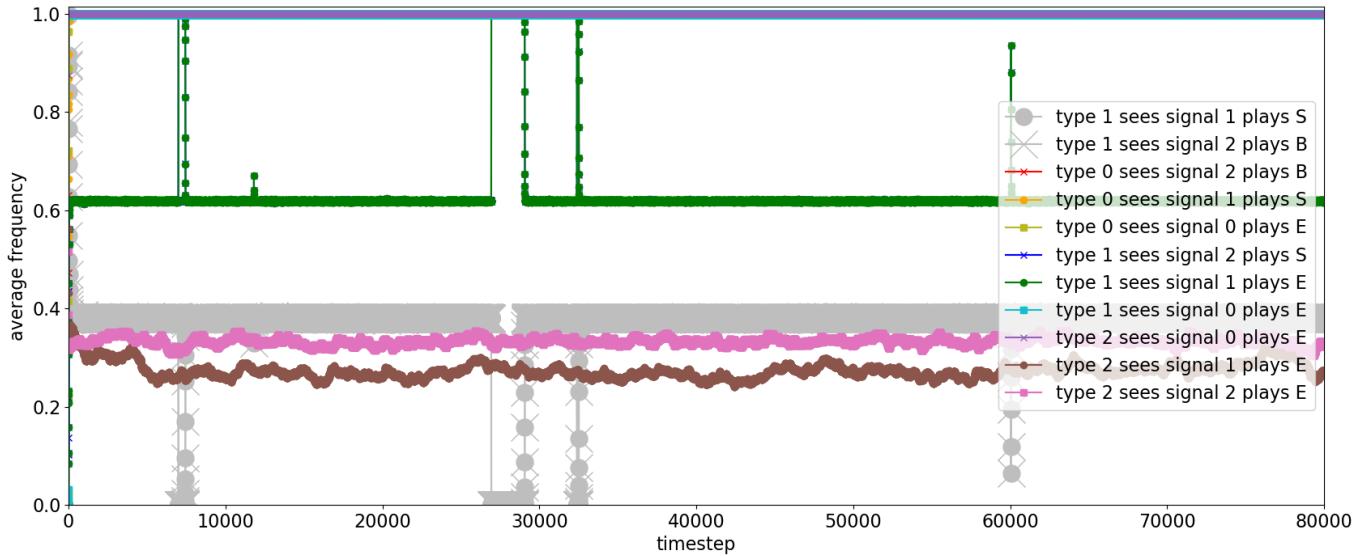
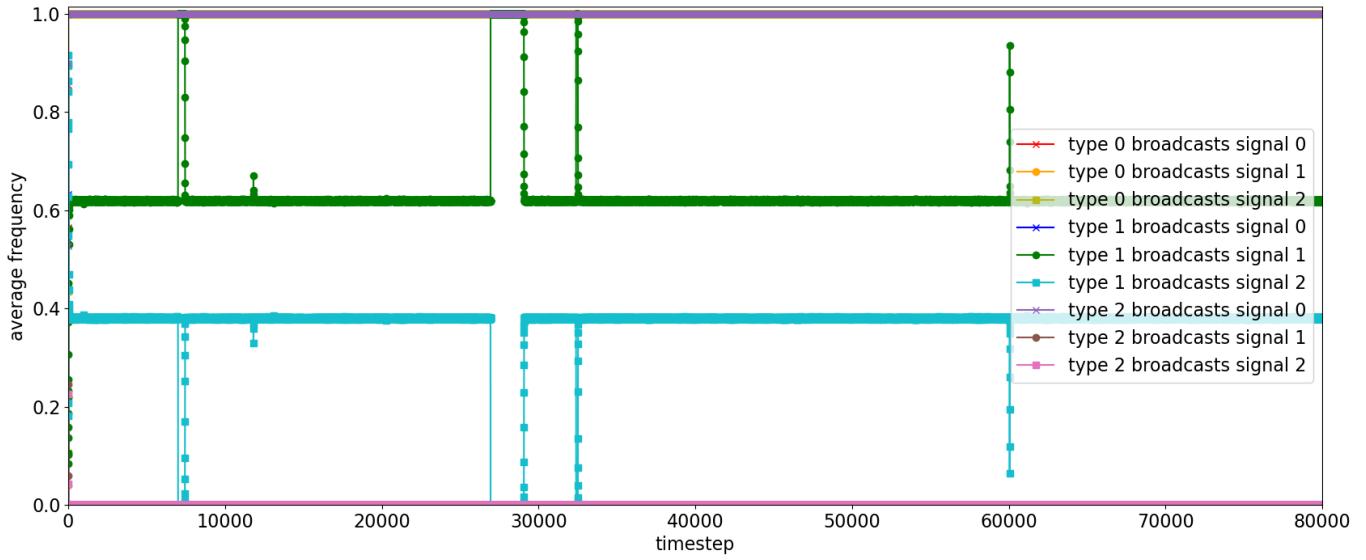
alpha = 0.4 and beta = 0, Run # 237 (looks like similar explanation to above)



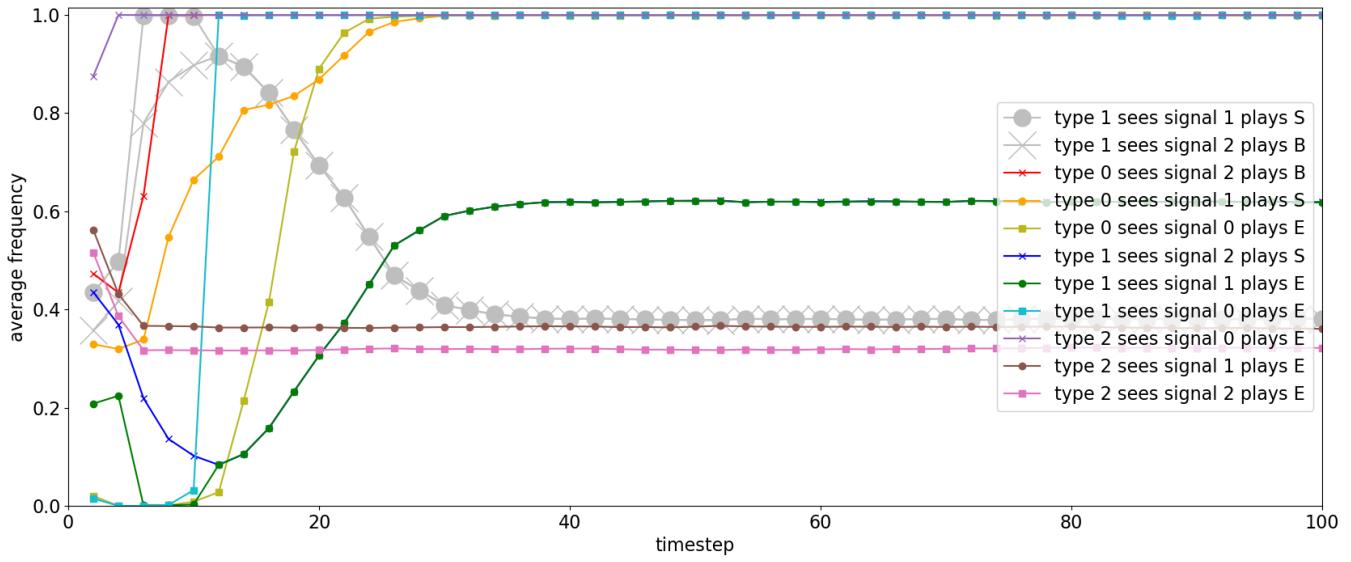
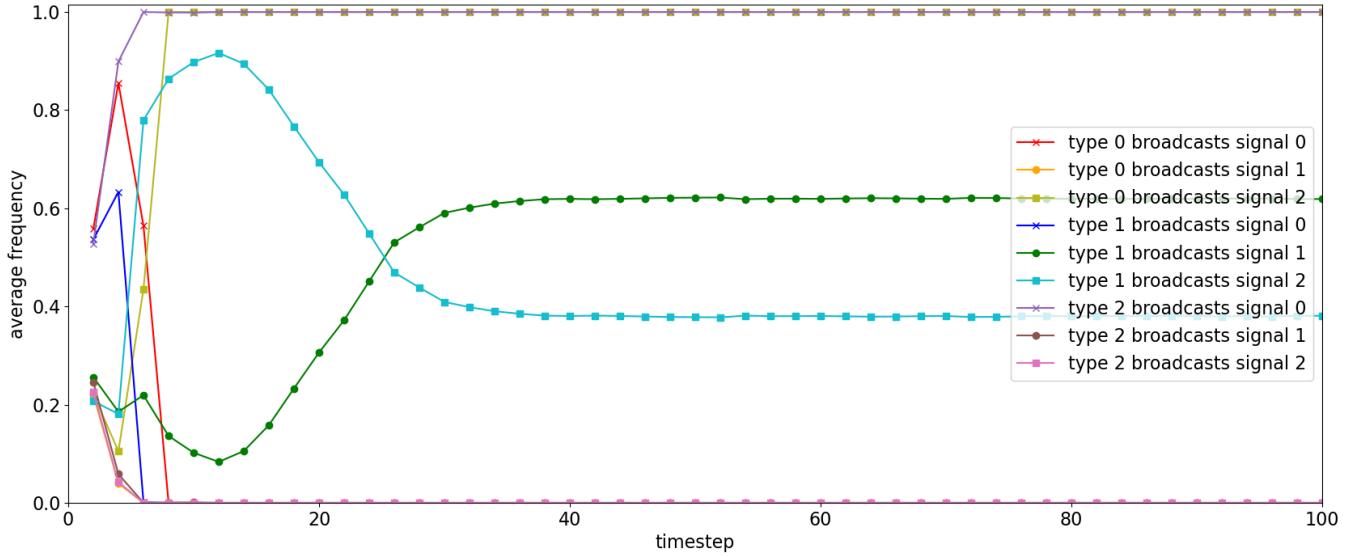
### outcomes (xvi):

(note: don't forget that agents who signal 0 treat all received signals as 0)

alpha = 0.3 and beta = 0.04, Run # 882



Continued on next page

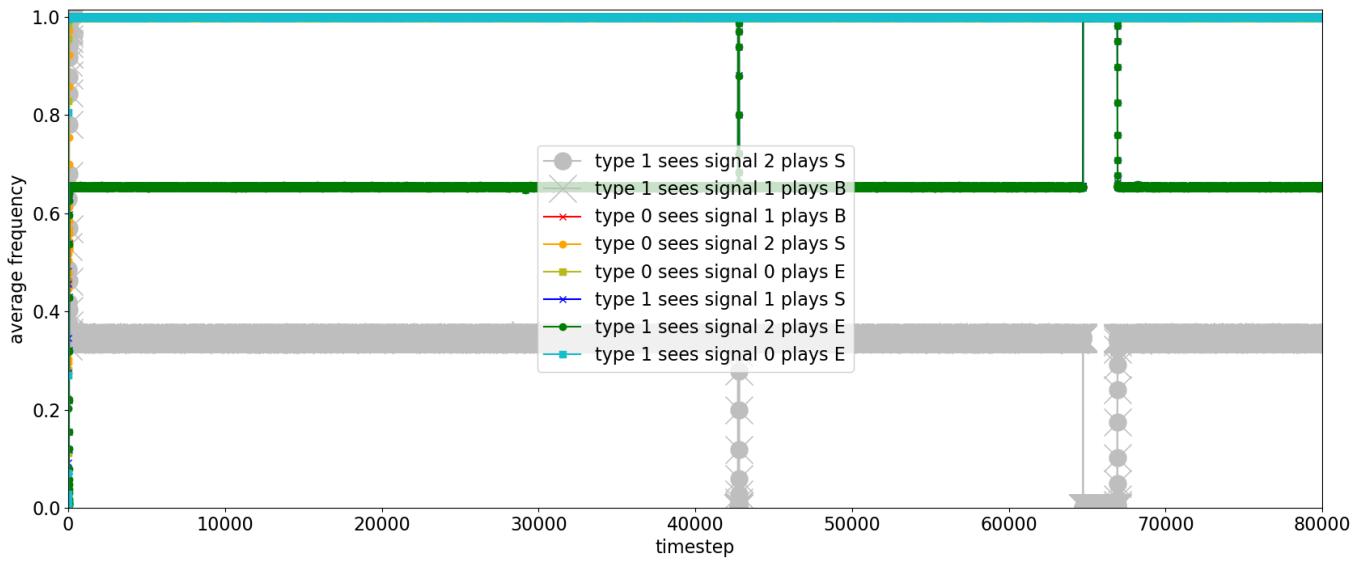
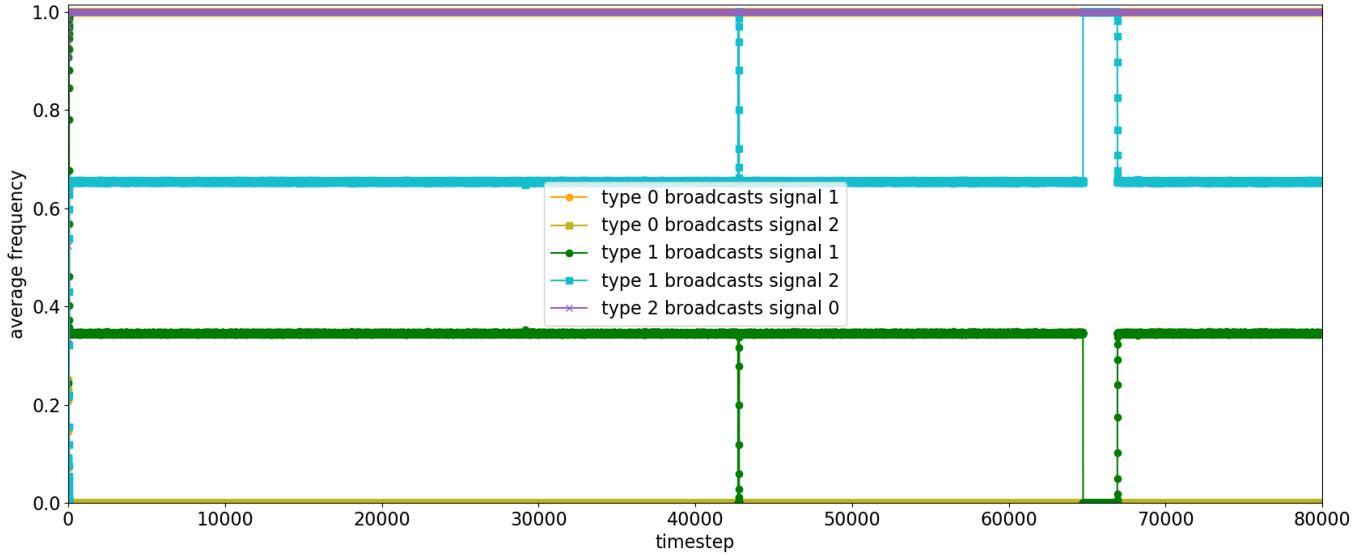


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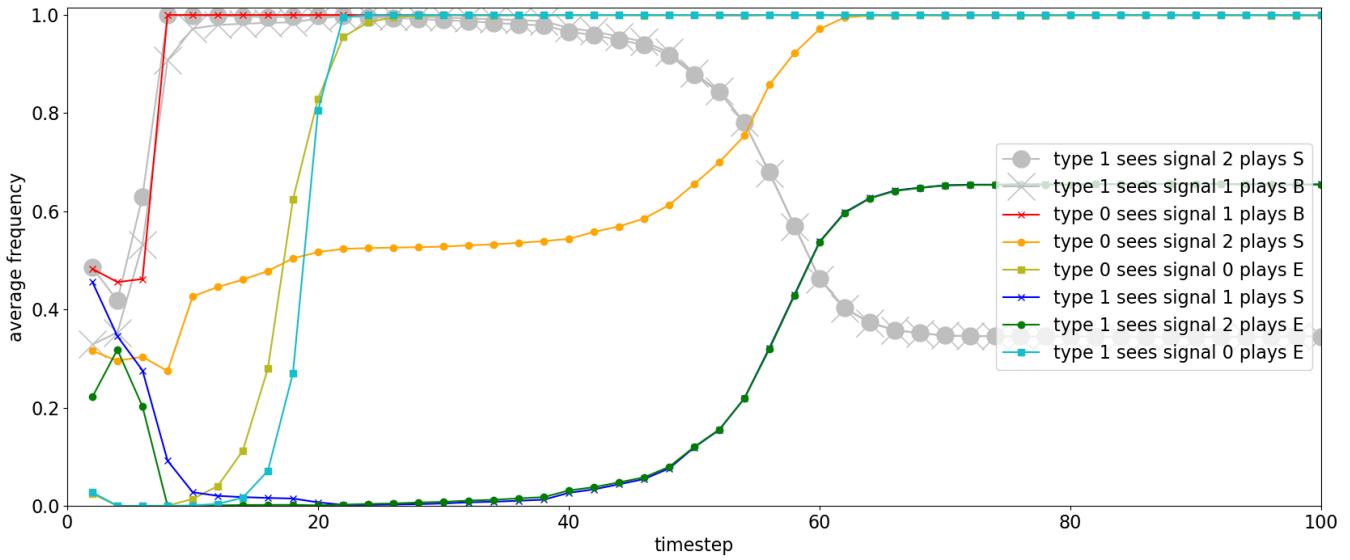
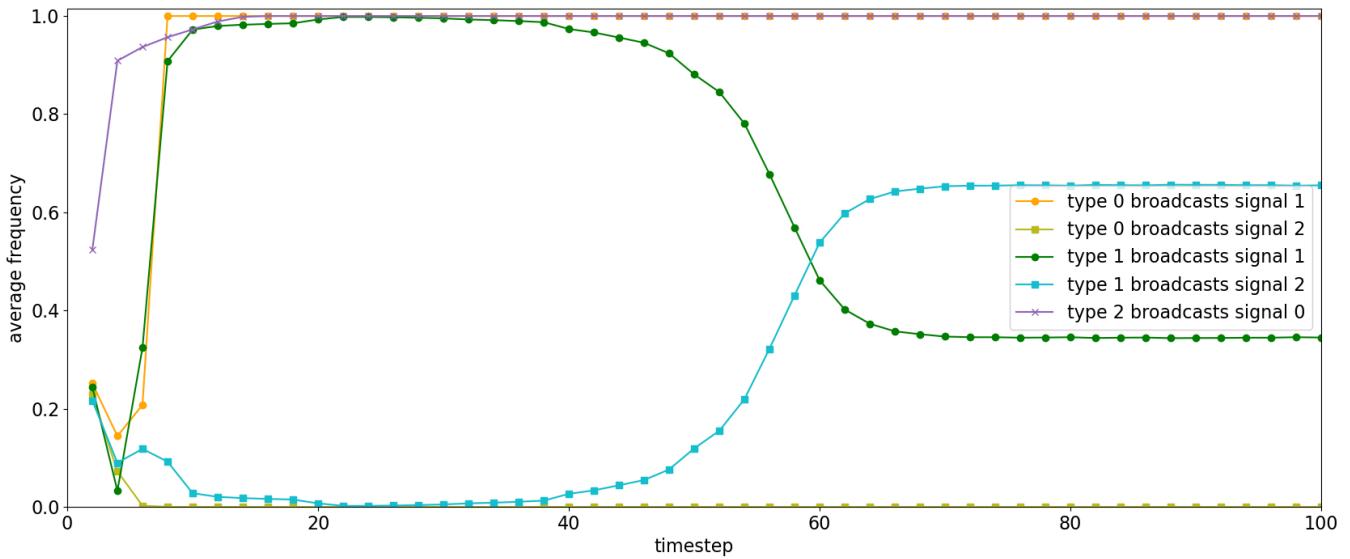
	broadcast signal	play when sees 0	play when sees 1	play when sees 2	number of agents with this profile
minority profile	2	E	S	B	1100
dominant profile	1	E	E	S	1800
hypothetical profile					0
	B	S	E		
type 1 coordination preferences:	1	1.3	0.5		
total number of agents in population who		signal	play on signal 0	play on signal 1	play on signal 2
type 0	3700	2	E	S	B
type 1	2900		E		
type 2	3400	0	E	E	E

Confirmed that for this distribution of agents the two strategy profiles employed by type 1 agents have equal expected utility and for each profile increasing its proportion lowers the expected utility for that profile (see spreadsheet titled "a3b2\_run882").

alpha = 0.4 and beta = 0.02 run # 86



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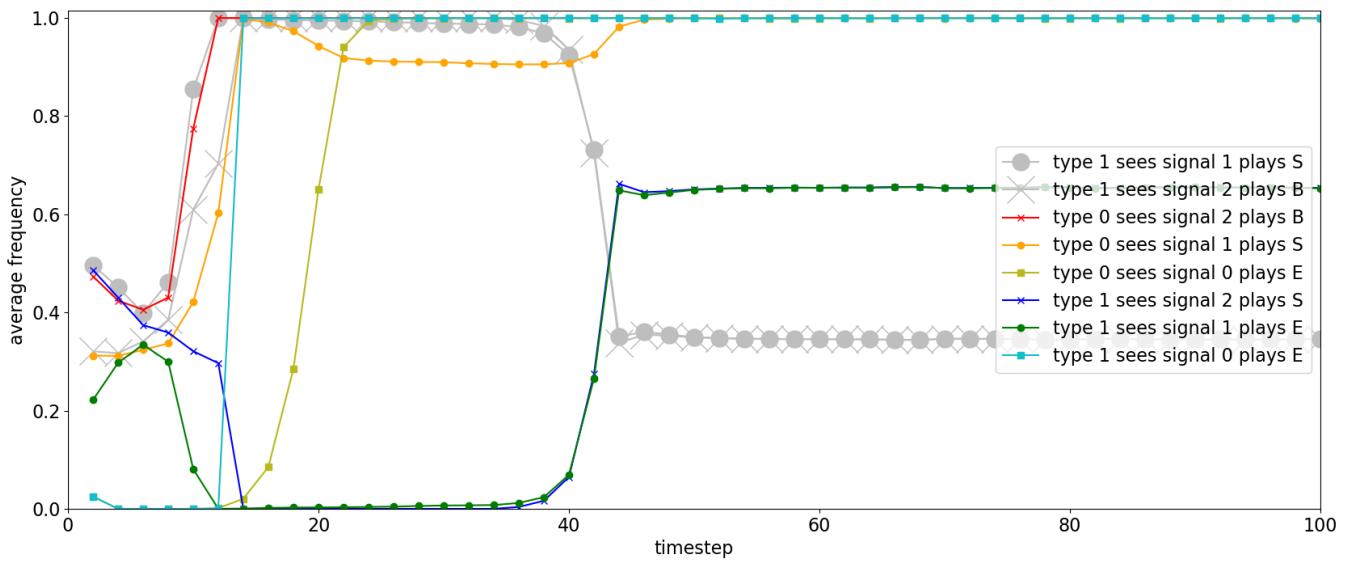
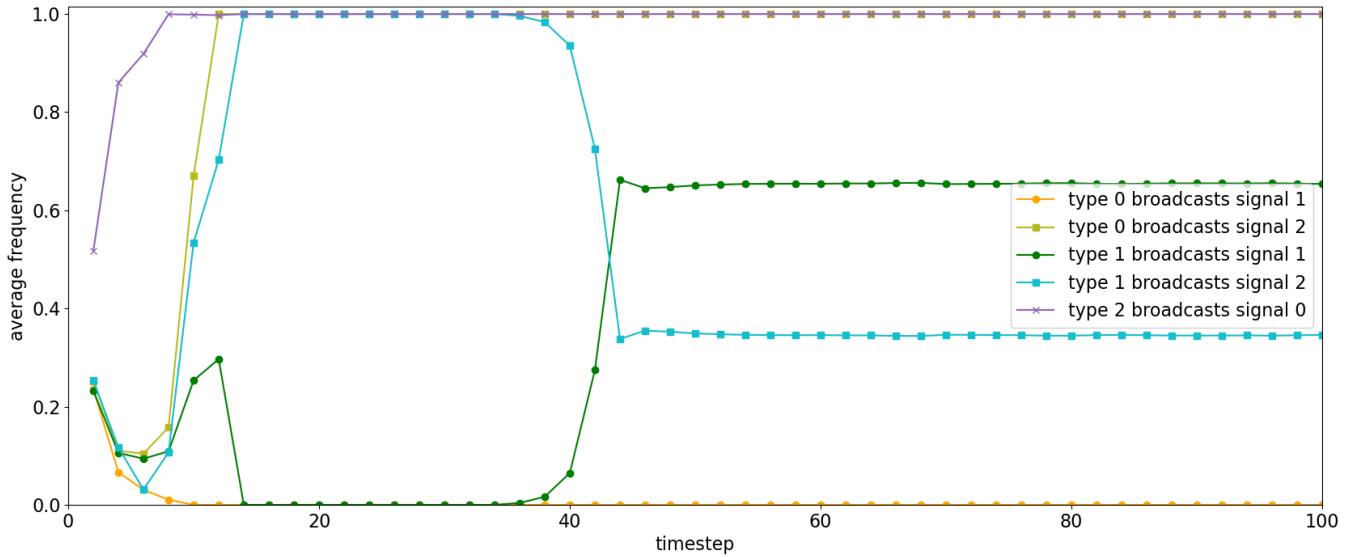


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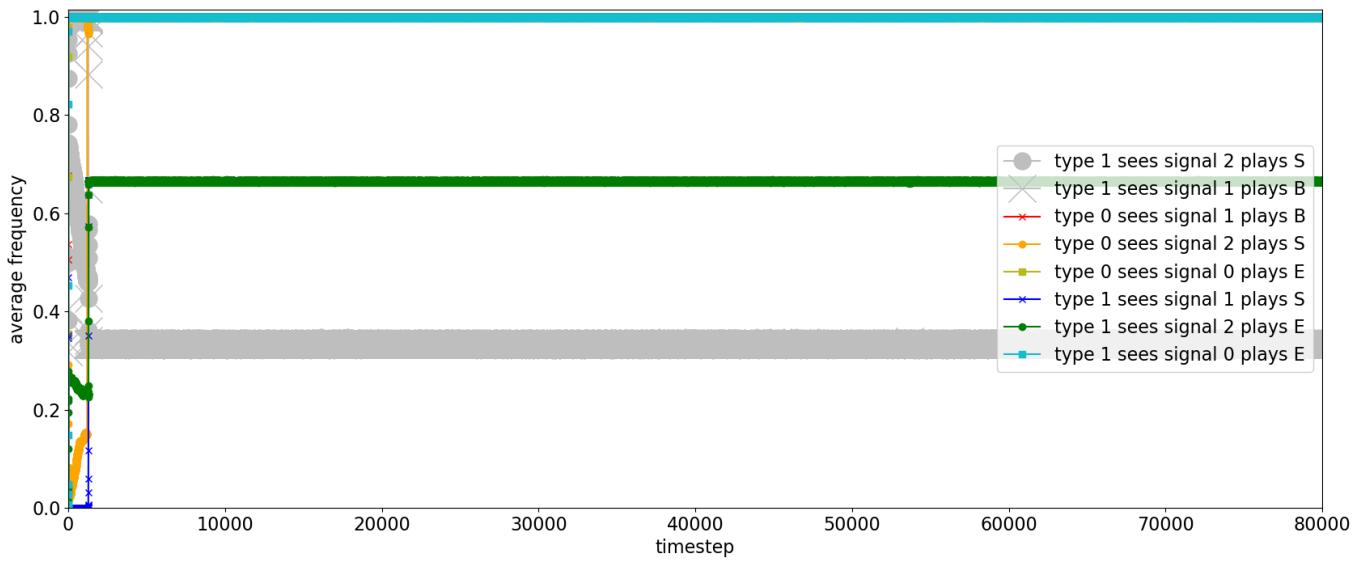
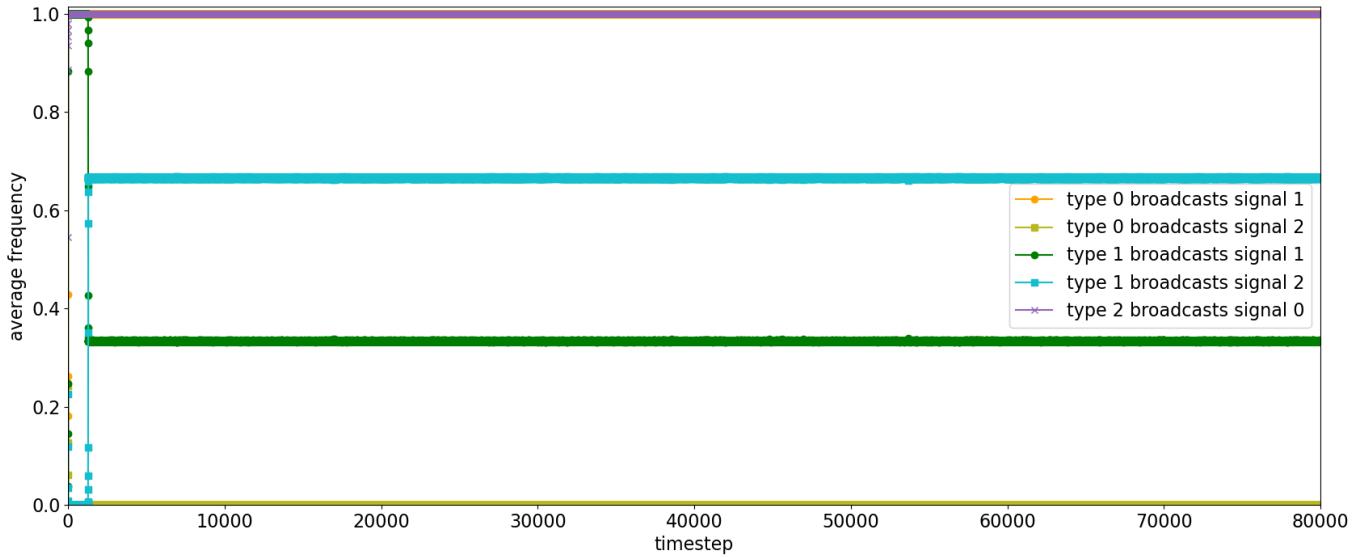
	broadcast signal	play when sees 0	play when sees 2	play when sees 1	number of agents with this profile
minority profile	1	E	S	B	1068
dominant profile	2	E	E	S	2031
hypothetical profile					0
	B	S	E		
type 1 coordination preferences:	1	1.4	0.5		
total number of agents in population who		signal	play on signal 0	play on signal 2	play on signal 1
type 0	3501	1	E	S	B
type 1	3099		E		
type 2	3400	0	E	E	E
EU for minority	9112.4				
EU for dominant	9112.1				

See spreadsheet named "a4b1\_run86"

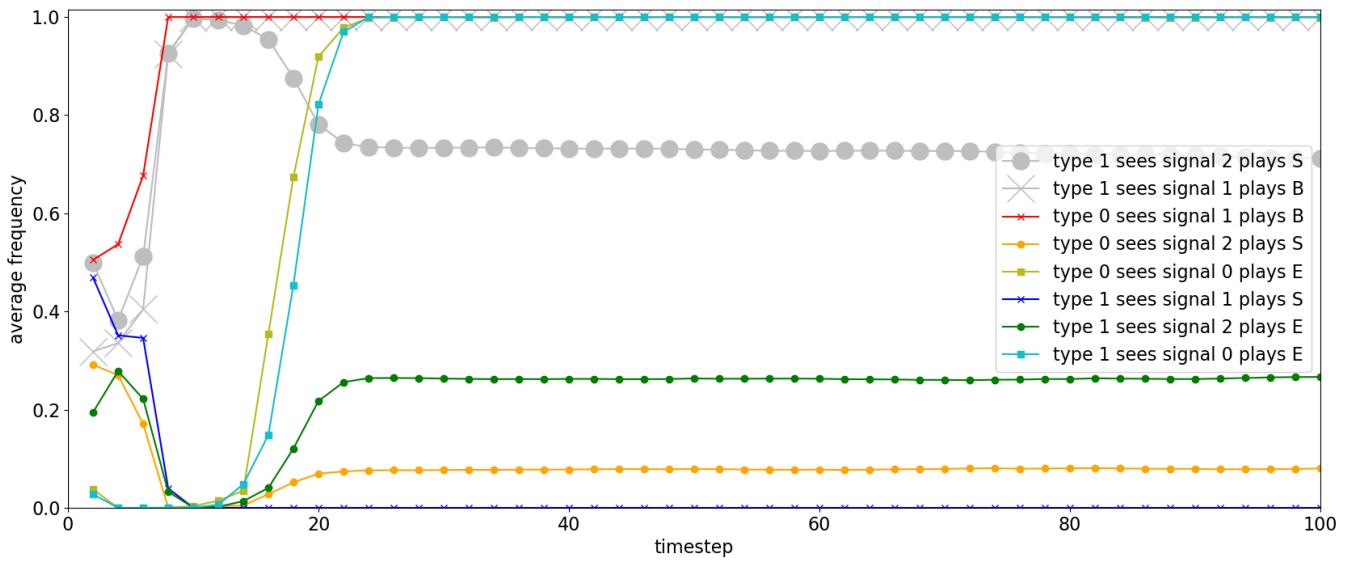
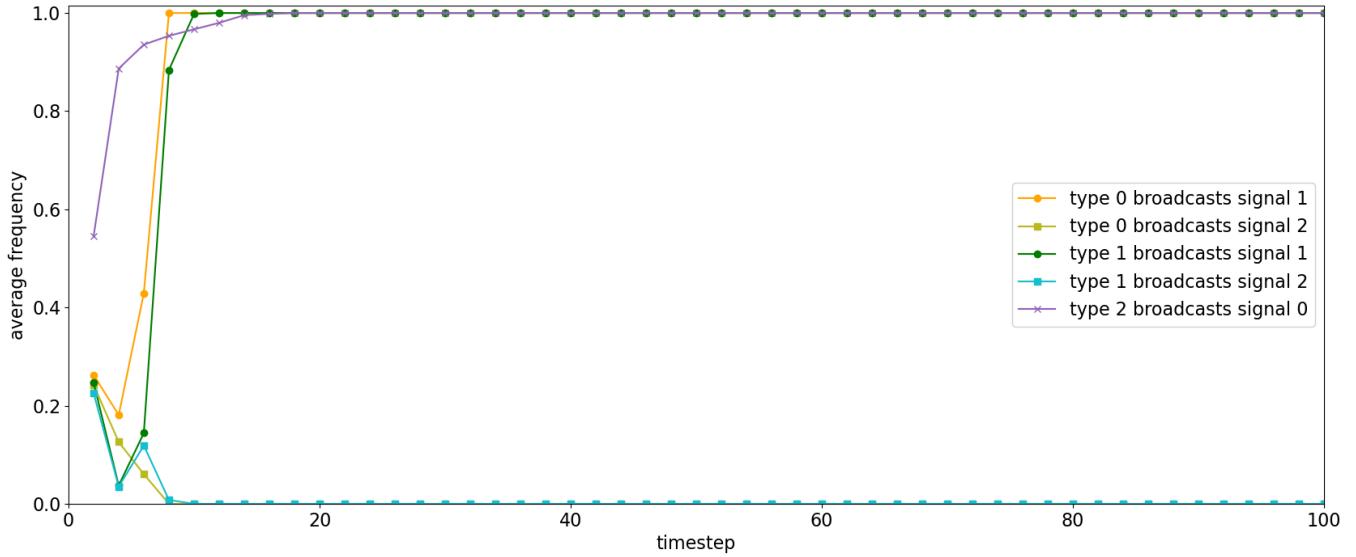
alpha = 0.4 and beta = 0.02 run # 179



alpha = 0.5 and beta = 0 run # 3



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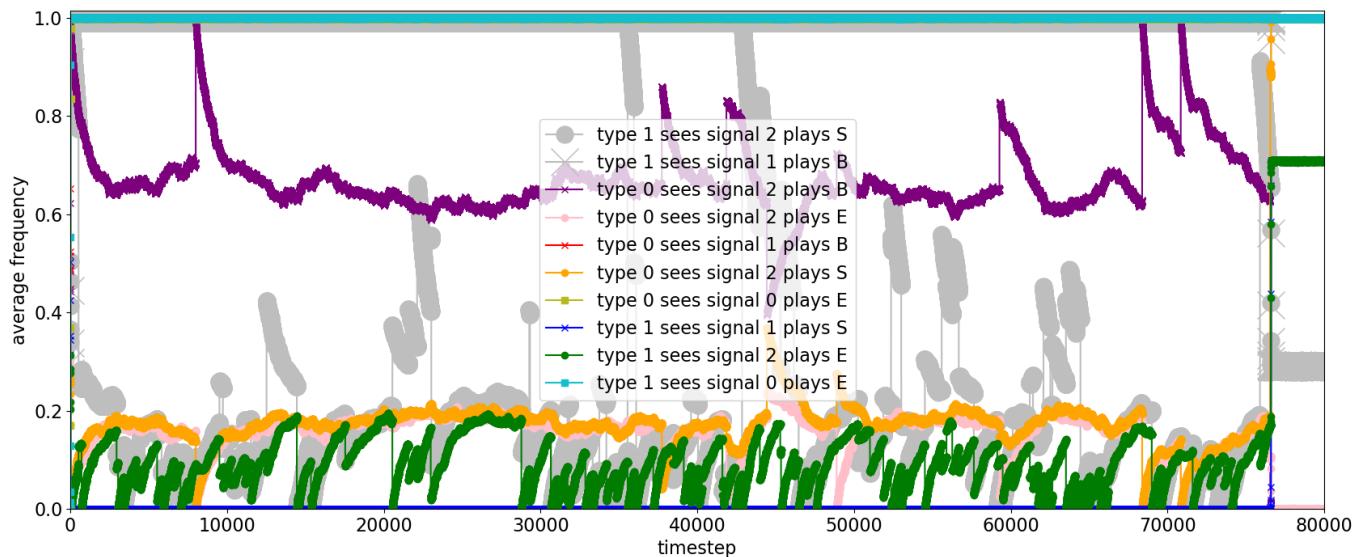
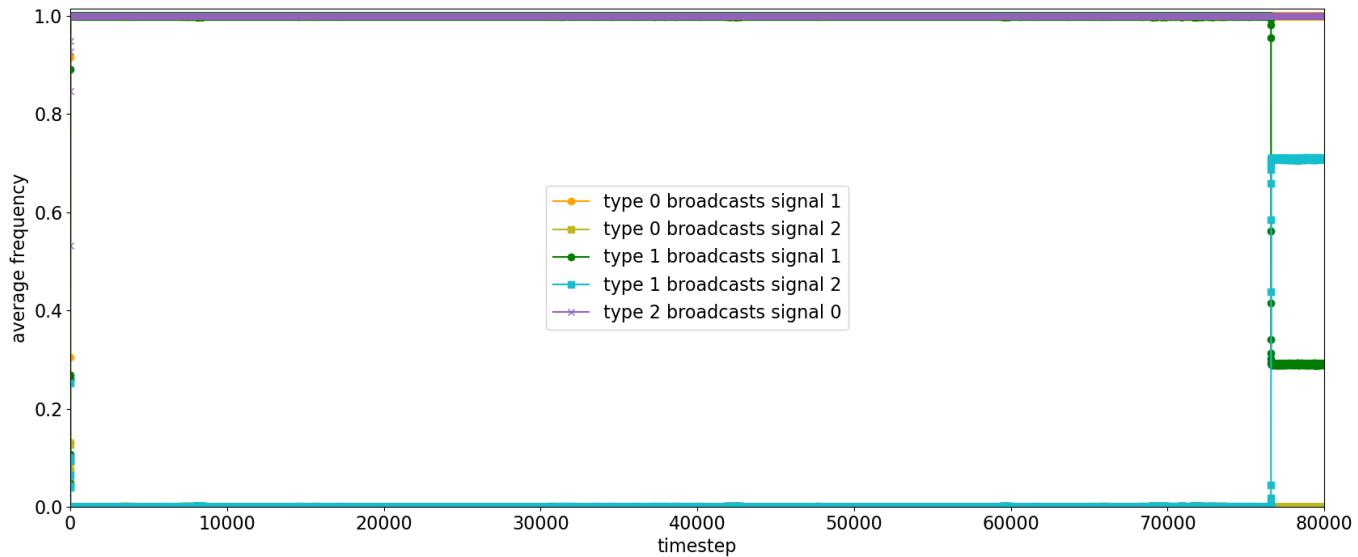


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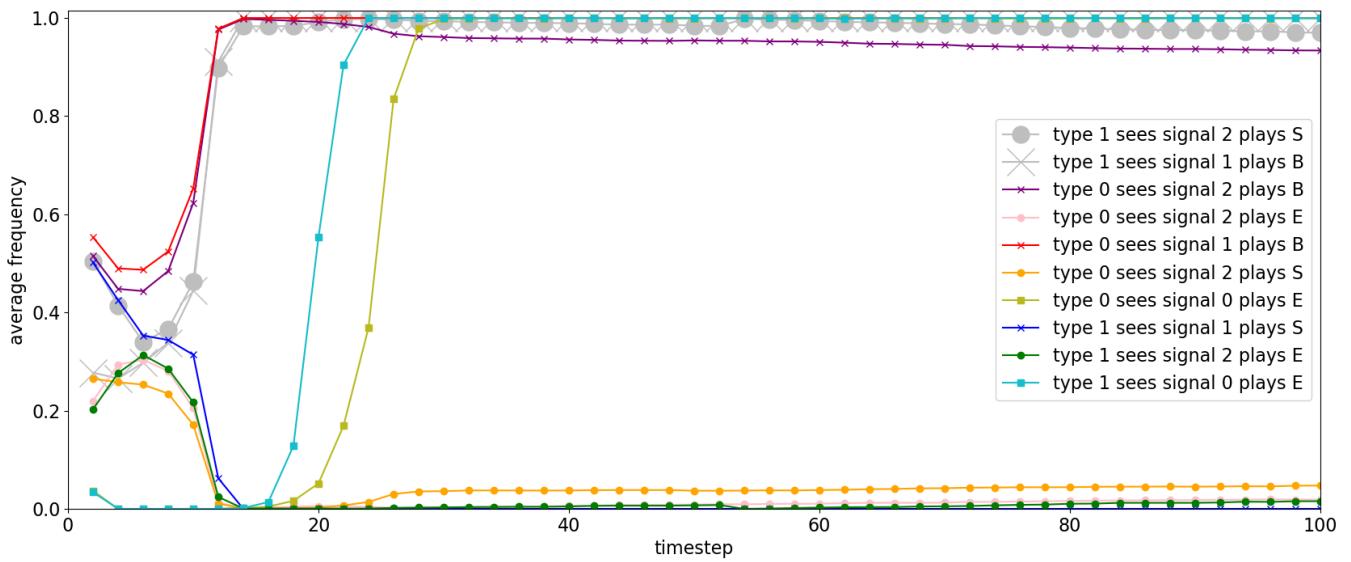
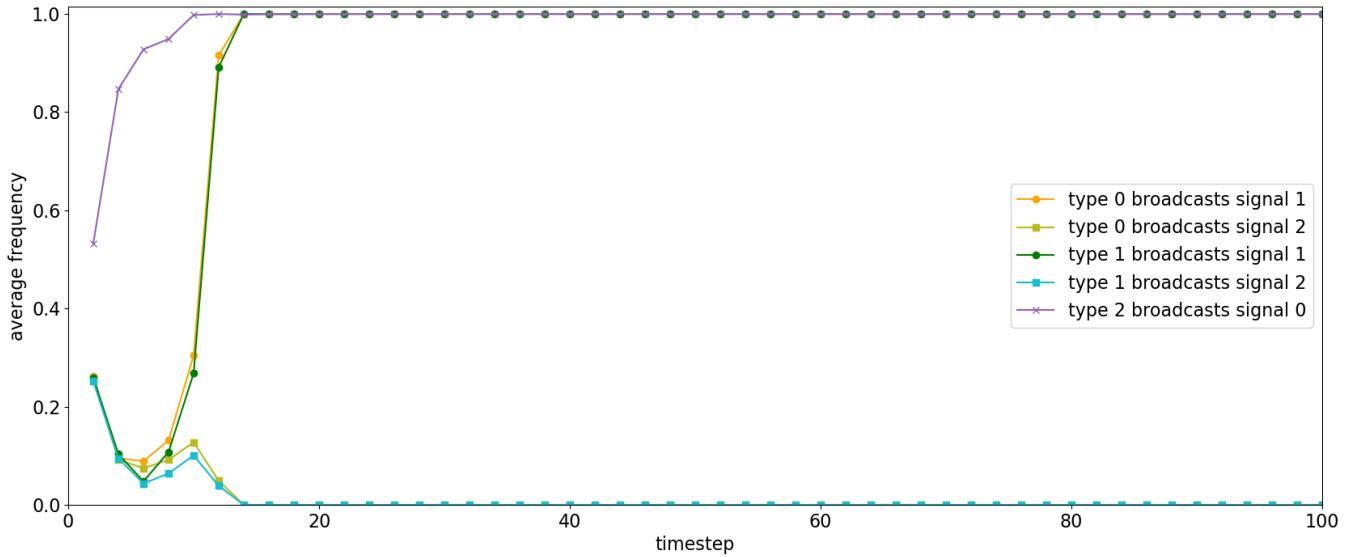
	broadcast signal	play when sees 0	play when sees 2	play when sees 1	number of agents with this profile
minority profile	1	E	S	B	1101
dominant profile	2	E	E	S	2199
hypothetical profile					0
	B	S	E		
type 1 coordination preferences:	1	1.5	0.5		
total number of agents in population who		signal	play on signal 0	play on signal 2	play on signal 1
type 0	3300	1	E	S	B
type 1	3300		E		
type 2	3400	0	E	E	E
EU for minority	9399.5				
EU for dominant	9401				

See spreadsheet titled "a5b0\_run3"

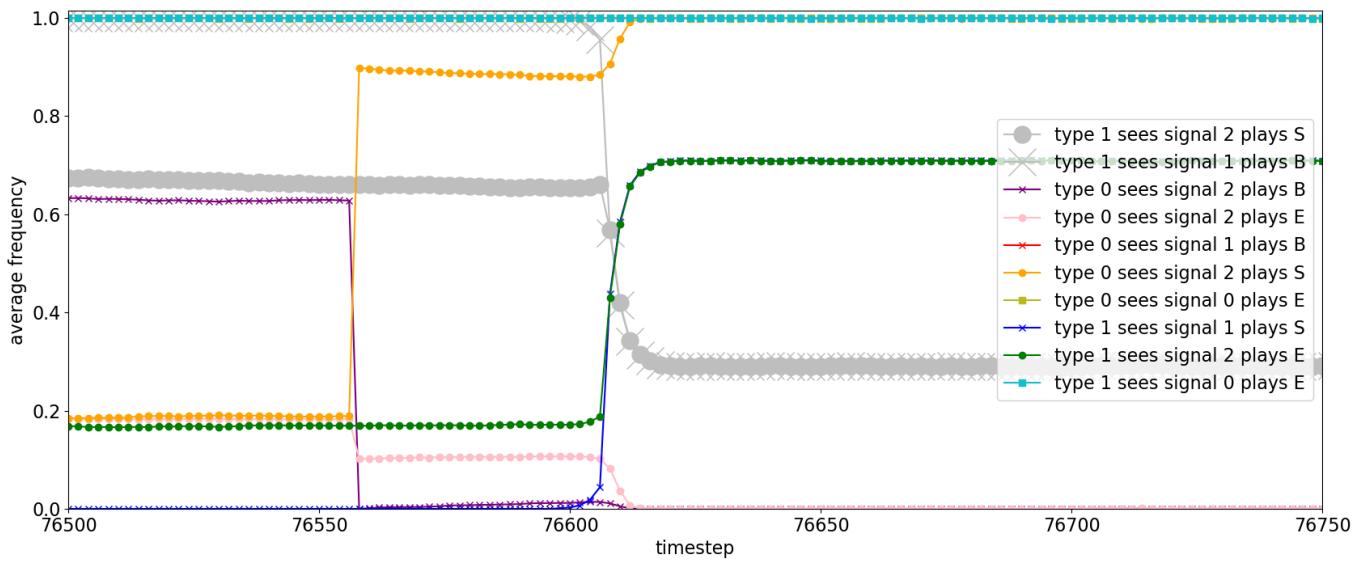
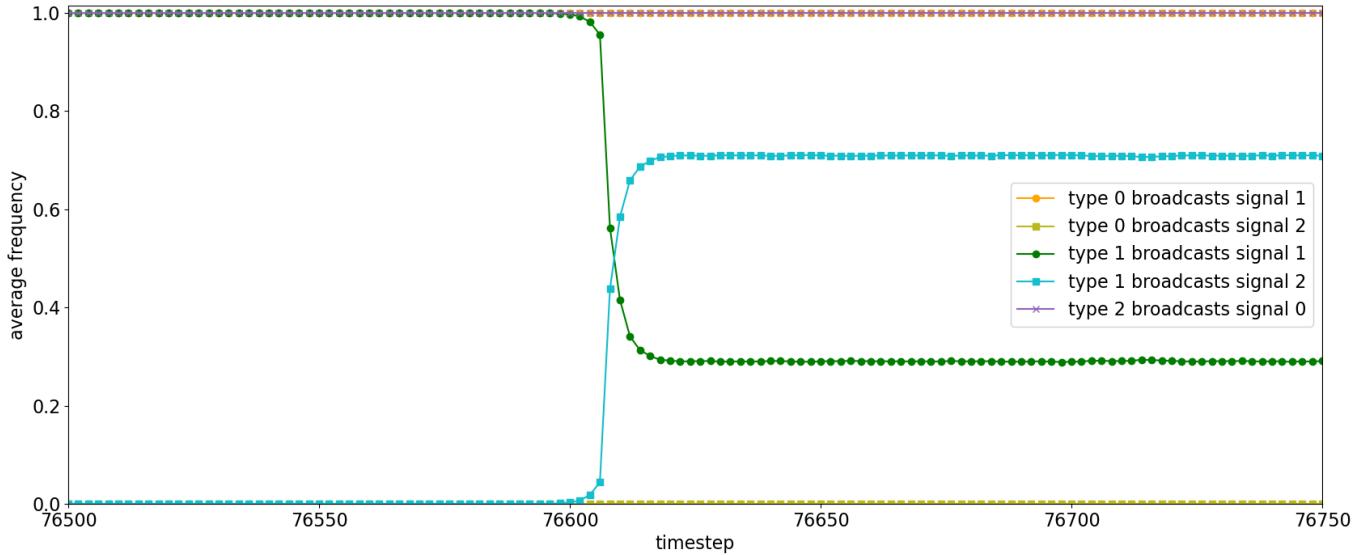
alpha = 0.5 and beta = 0.02 run # 794



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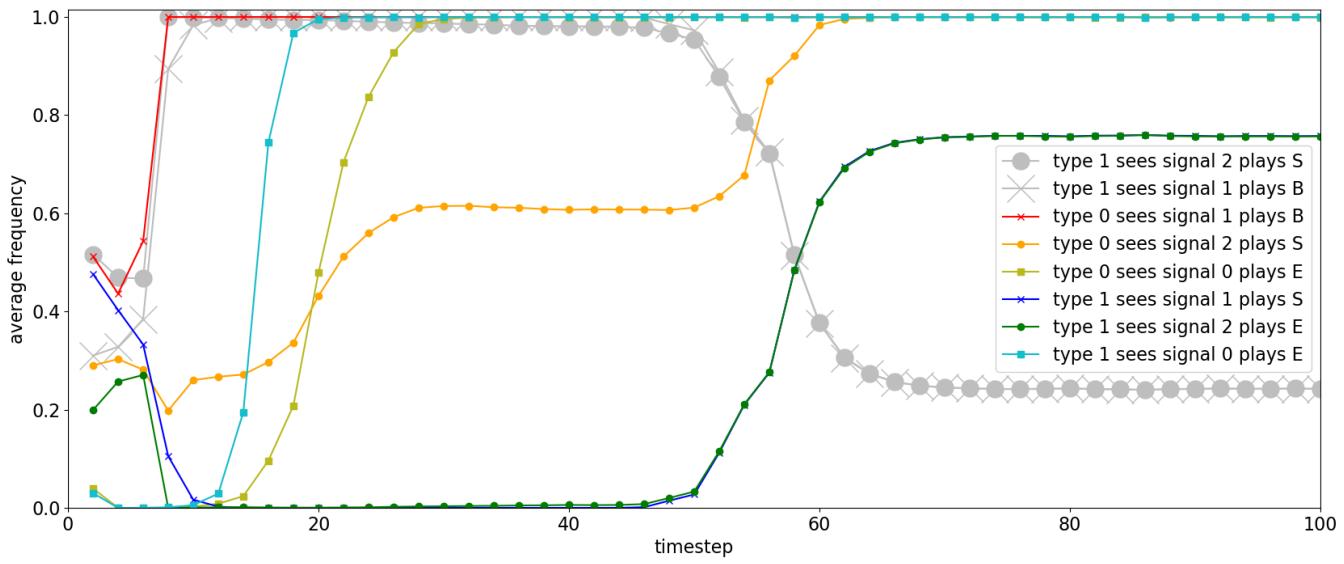
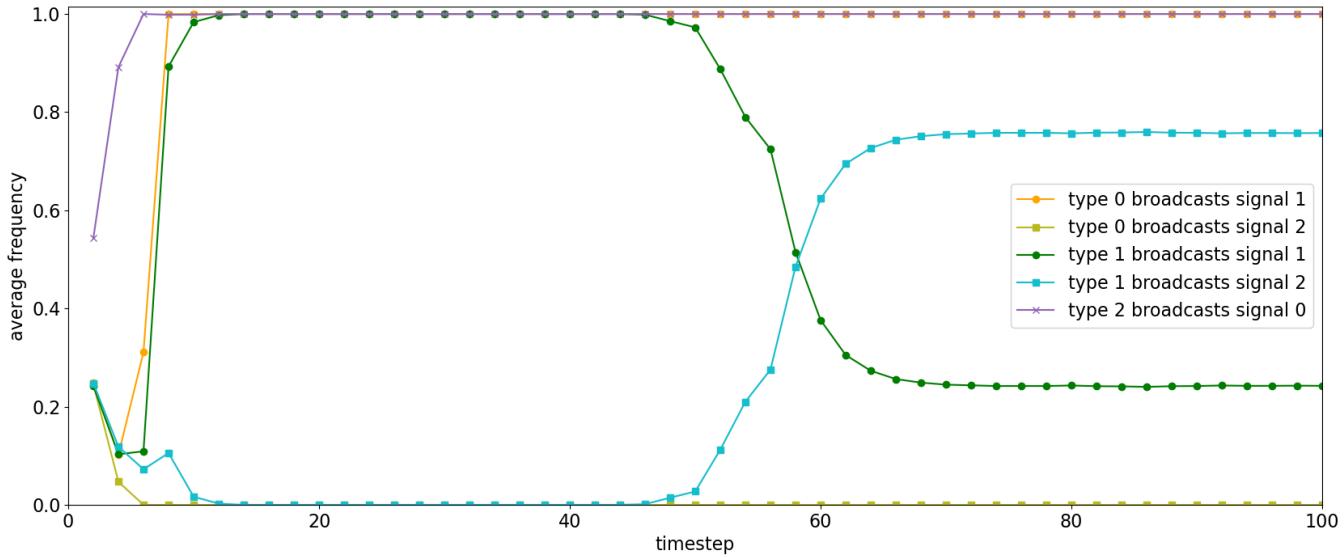
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	broadcast signal	play when sees 0	play when sees 2	play when sees 1	number of agents with this profile
minority profile	1	E	S	B	898
dominant profile	2	E	E	S	2201
hypothetical profile					0
	B	S	E		
type 1 coordination preferences:	1	1.5	0.5		
total number of agents in population who		signal	play on signal 0	play on signal 2	play on signal 1
type 0	3501	1	E	S	B
type 1	3099		E		
type 2	3400	0	E	E	E
EU for minority	9400.5				
EU for dominant	9399				

alpha = 0.5 and beta = 0.04 run # 254



Continued

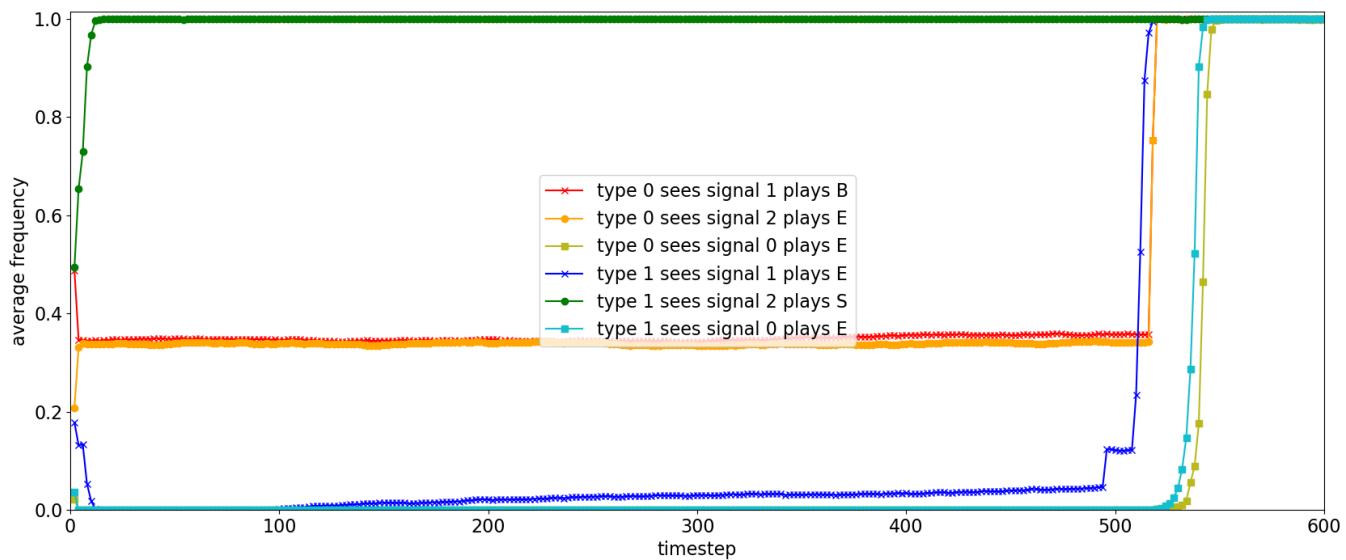
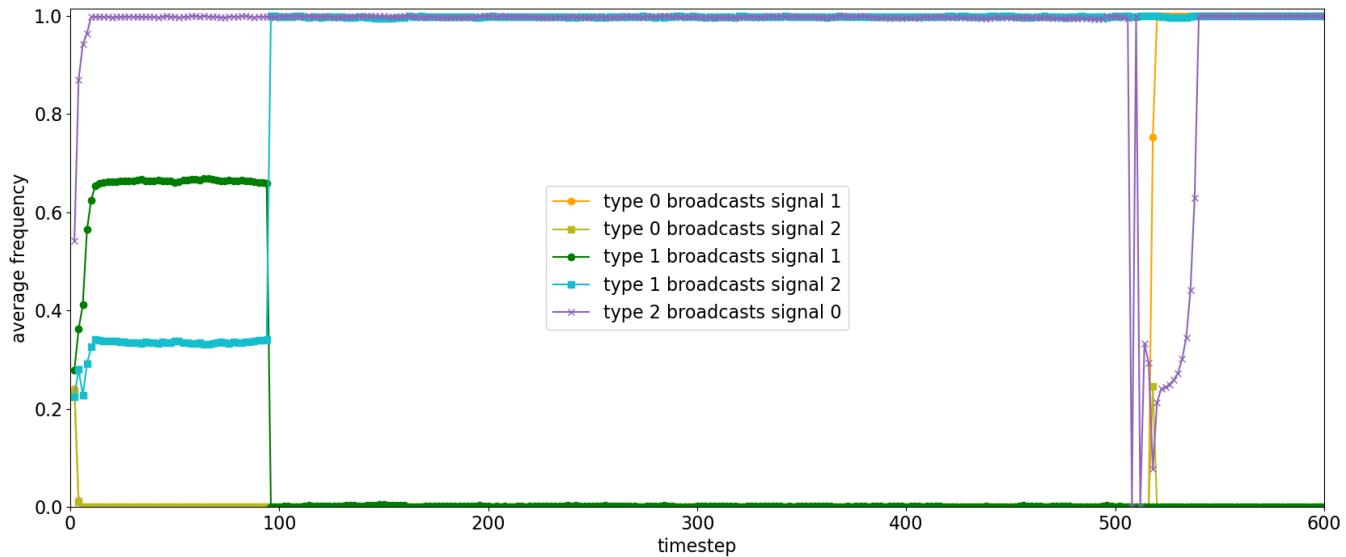
	broadcast signal	play when sees 0	play when sees 2	play when sees 1	number of agents with this profile
minority profile	1	E	S	B	700
dominant profile	2	E	E	S	2200
hypothetical profile					0
	B	S	E		
type 1 coordination preferences:	1	1.5	0.5		
total number of agents in population who		signal	play on signal 0	play on signal 2	play on signal 1
type 0	3700	1	E	S	B
type 1	2900		E		
type 2	3400	0	E	E	E
EU for minority	9400				
EU for dominant	9400				

See "a5b1\_run794"

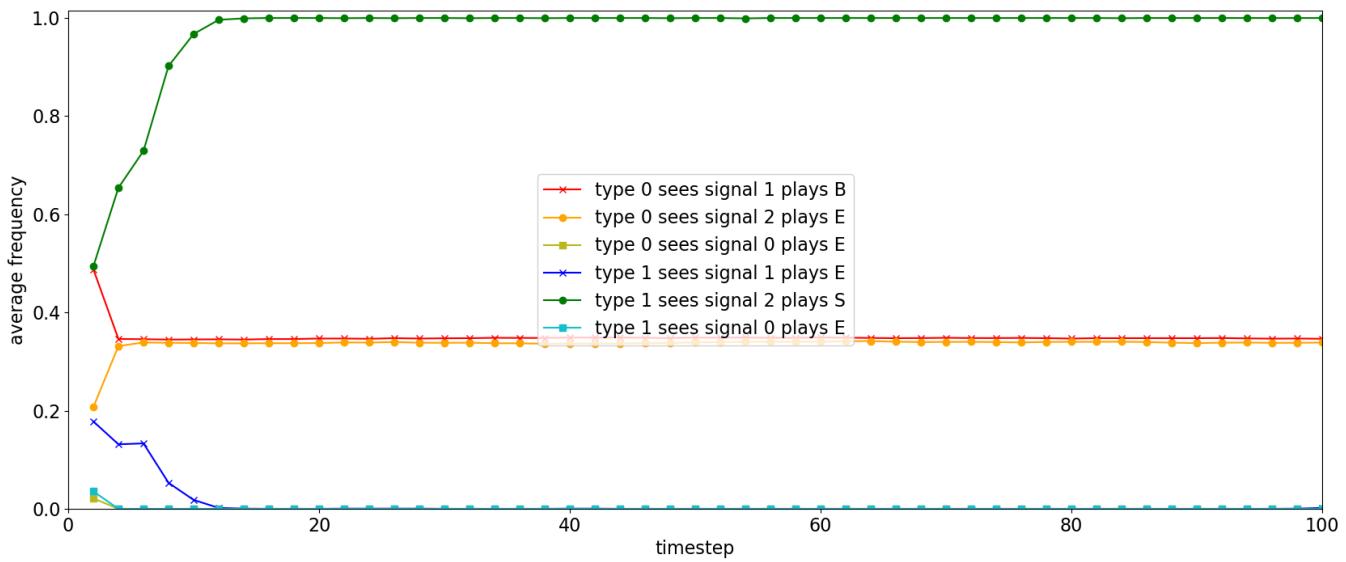
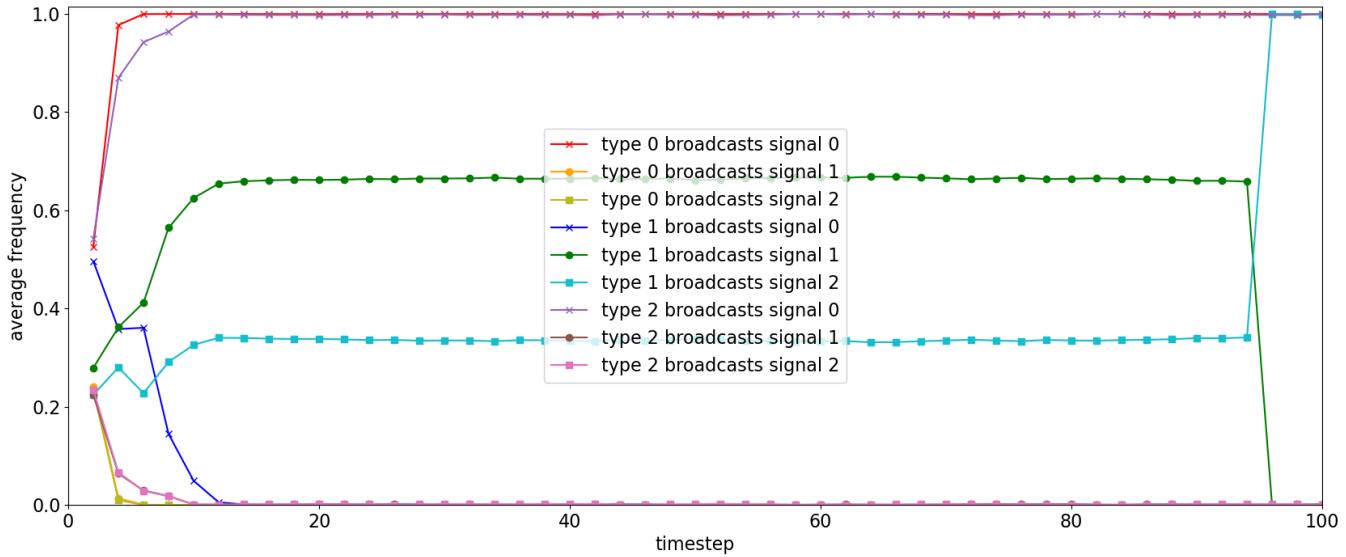
**outcomes (xvii):**

(note: don't forget that agents who signal 0 treat all received signals as 0)

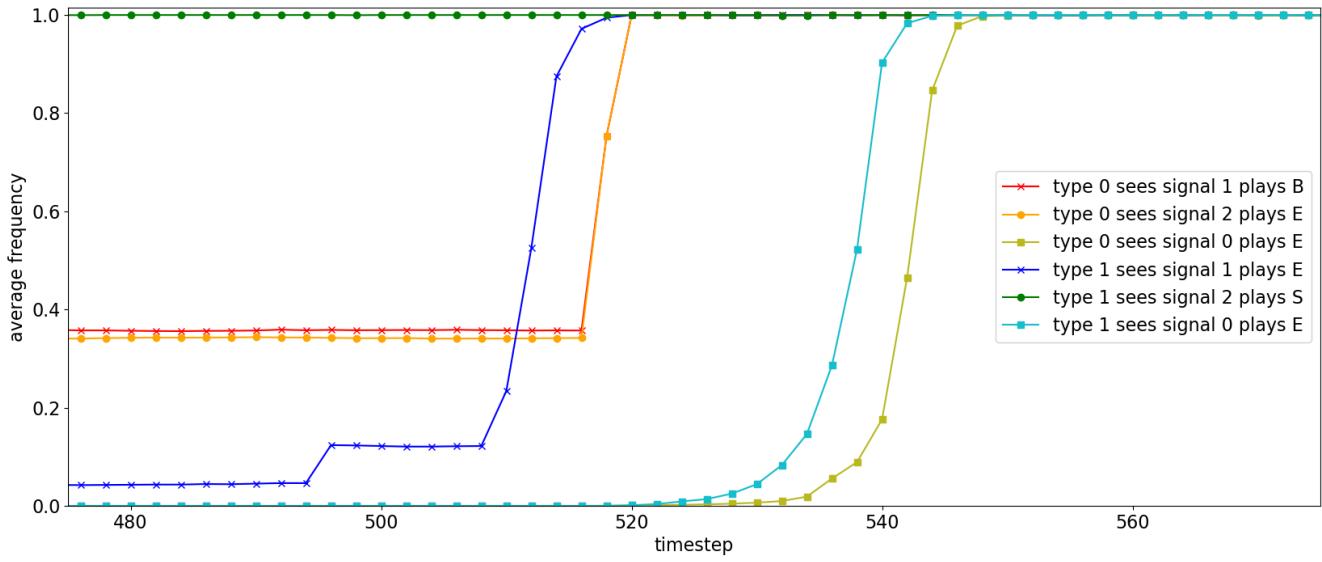
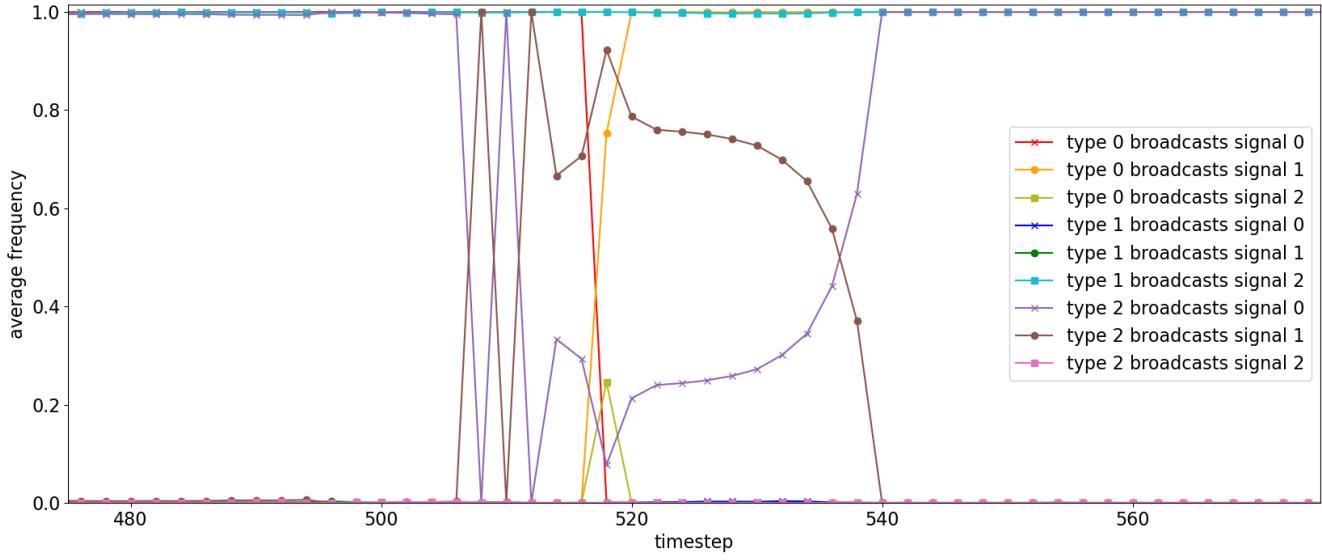
alpha = 0.3 and beta = 0.06, Run # 59



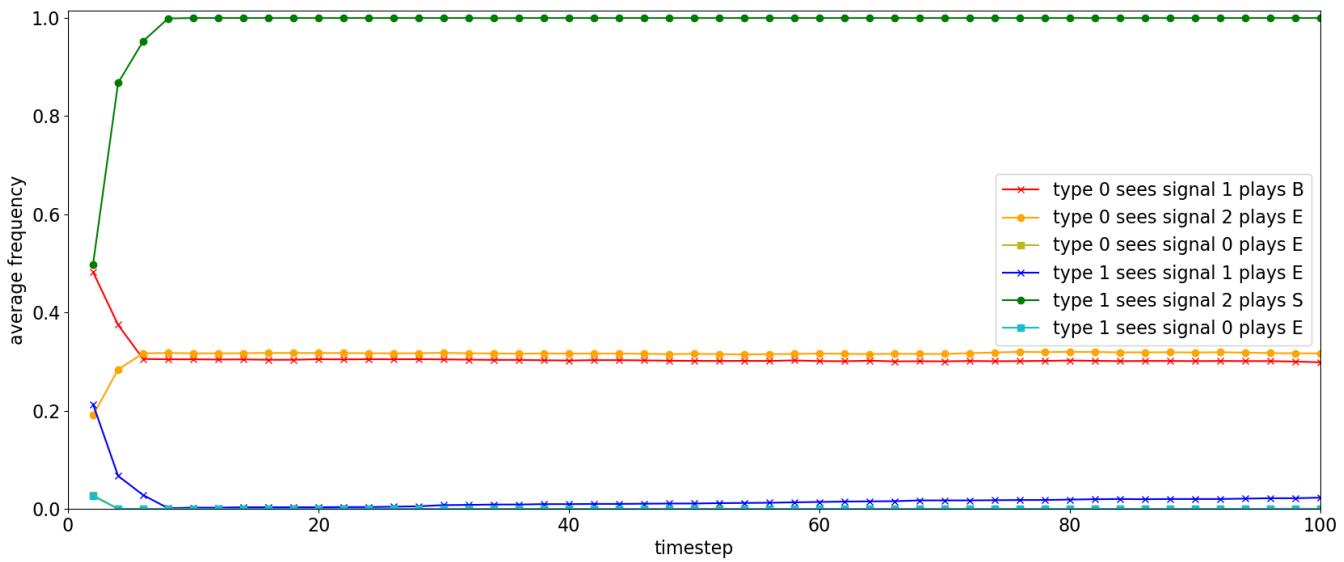
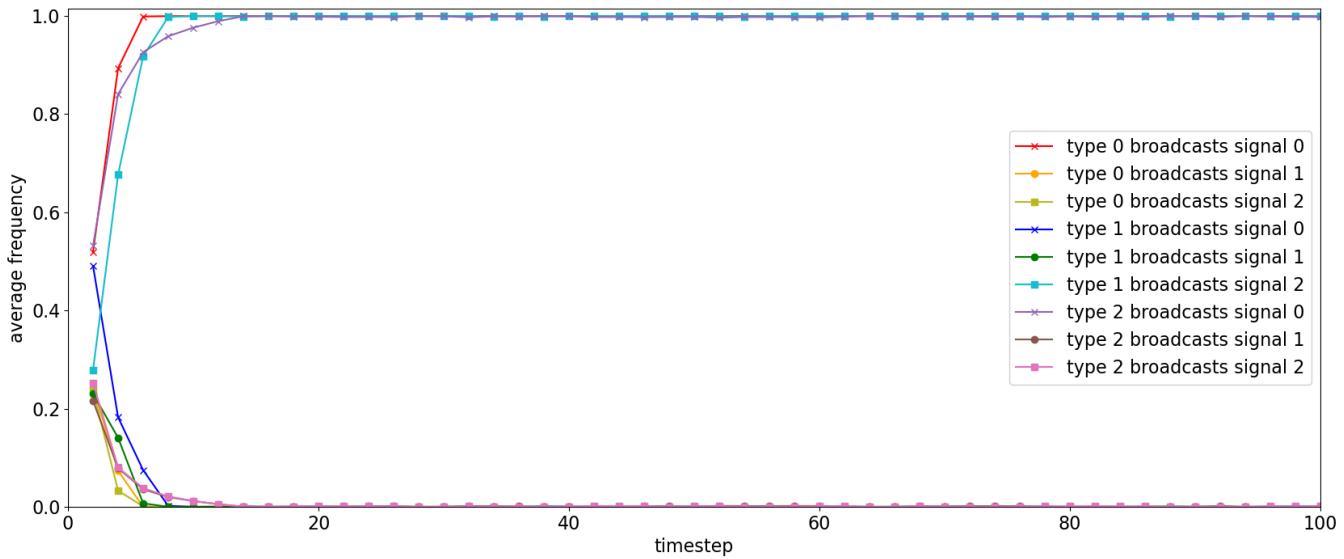
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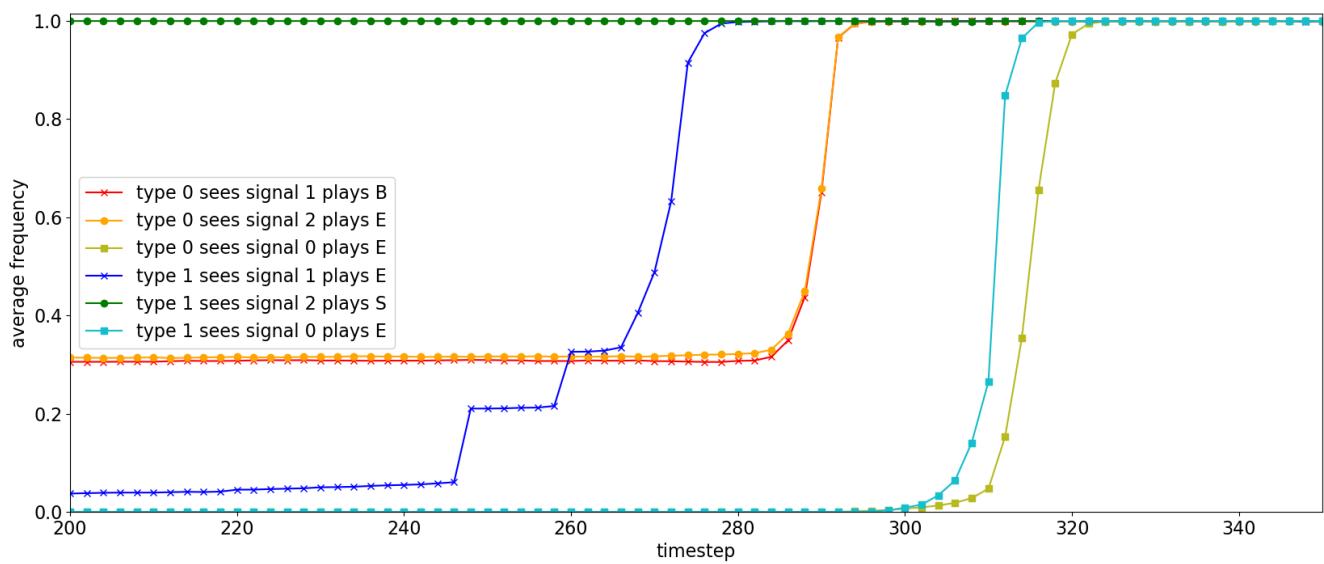
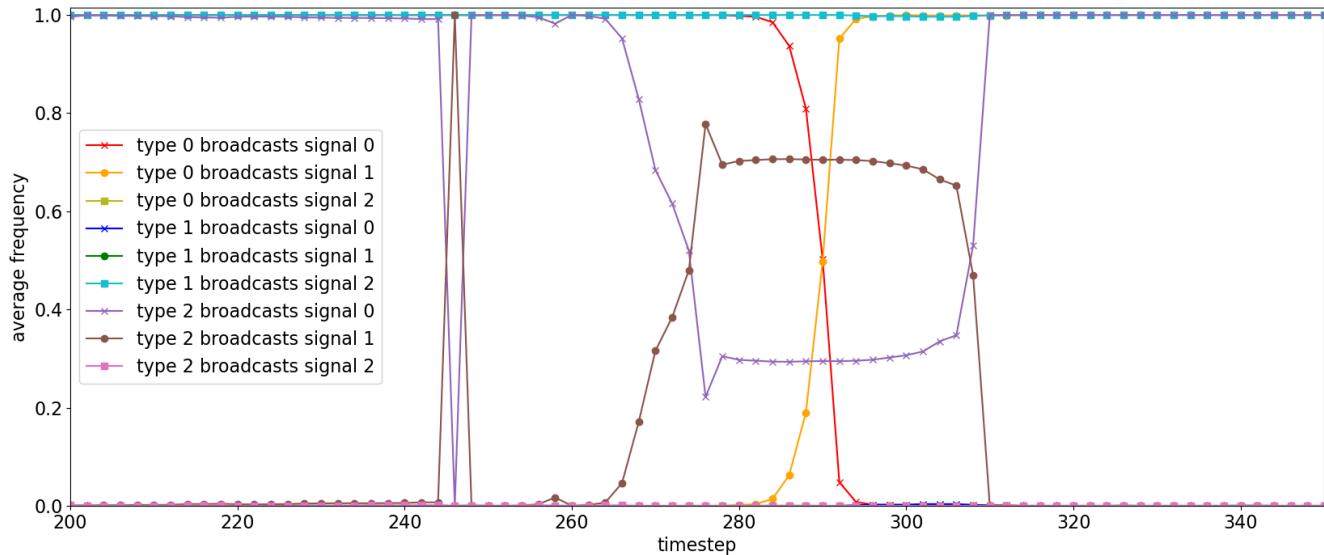
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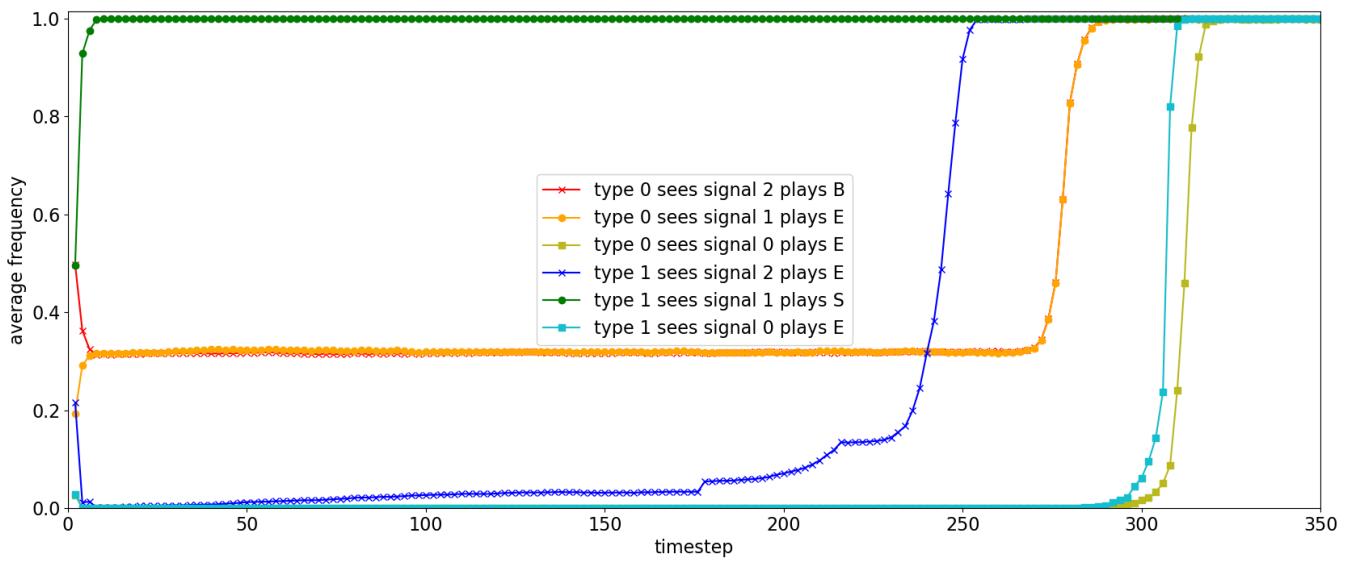
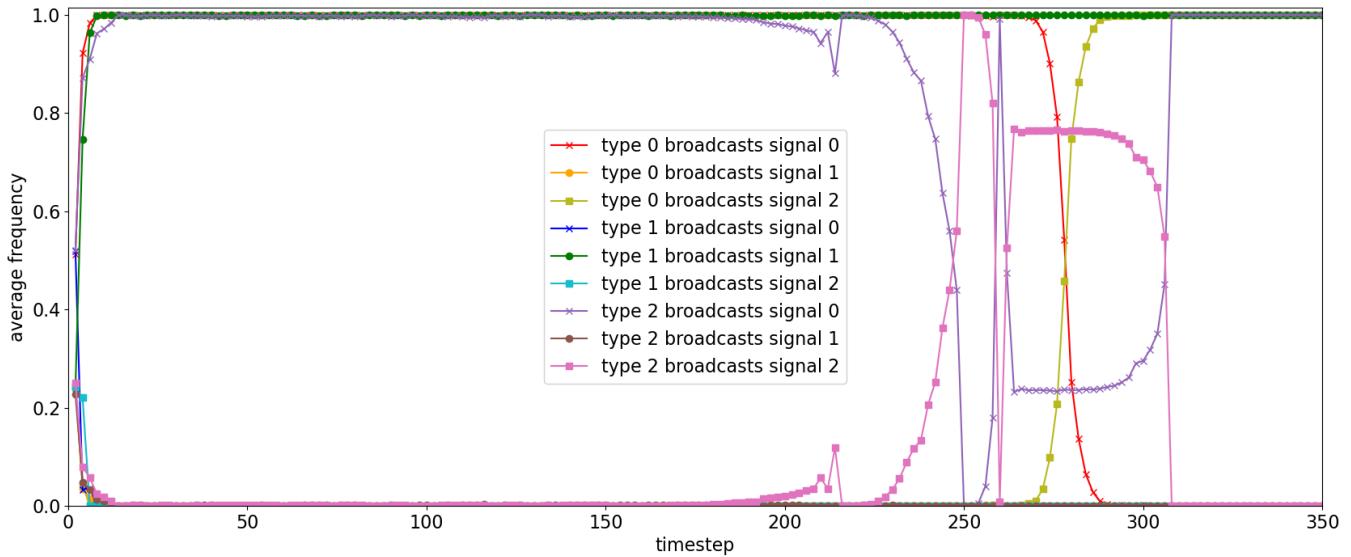
alpha = 0.4 and beta = 0.08 run # 264



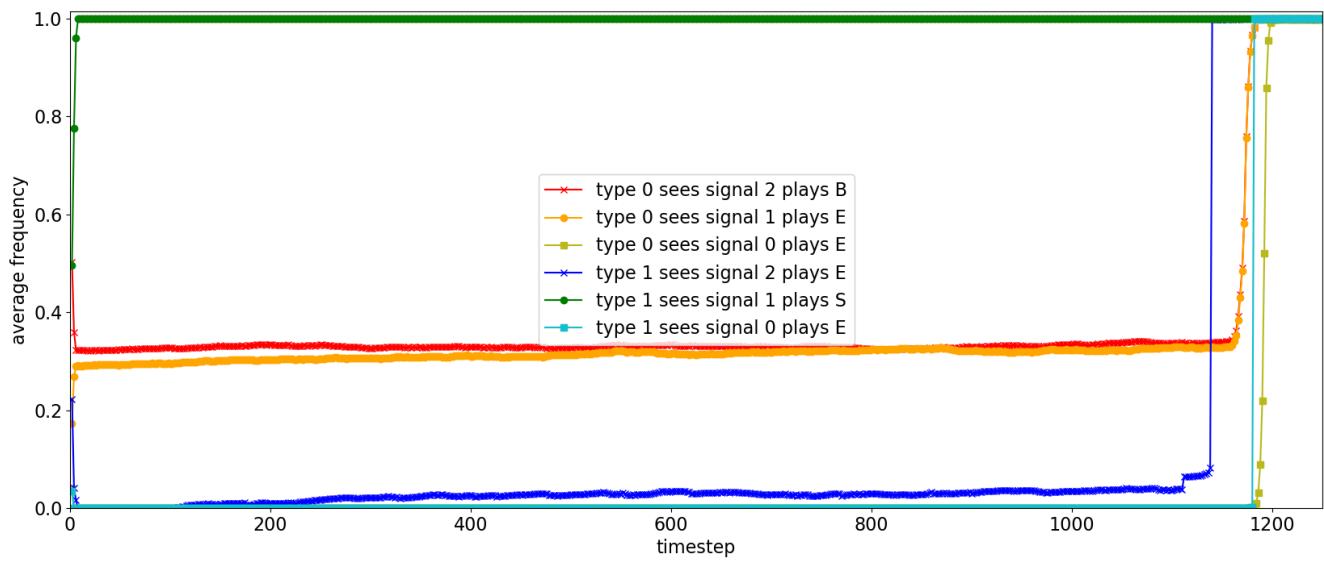
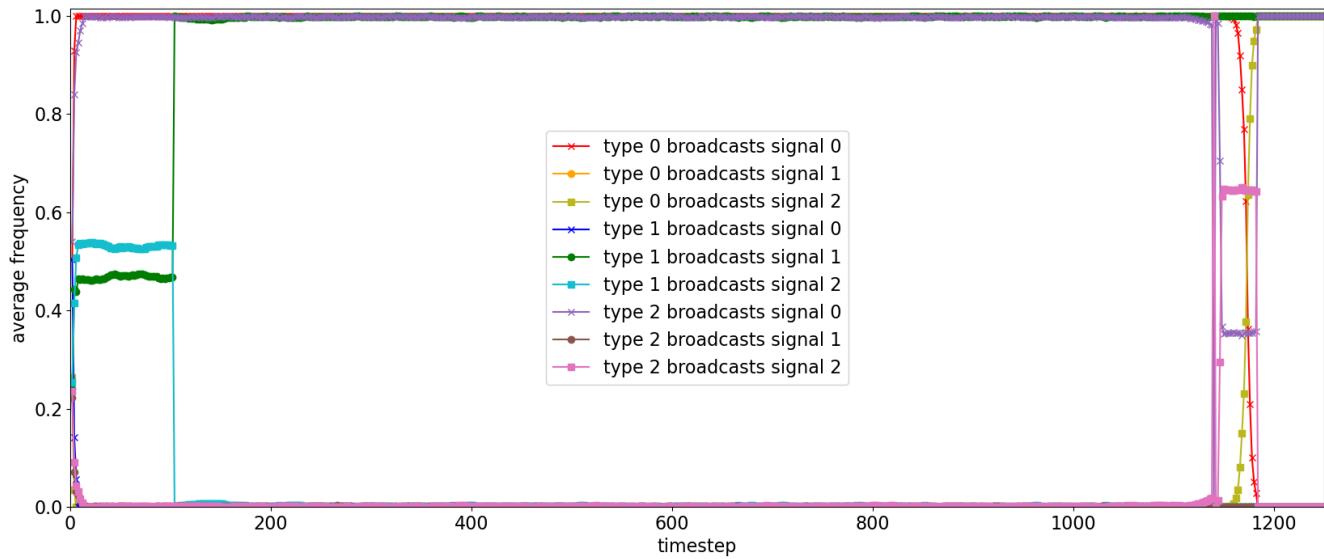
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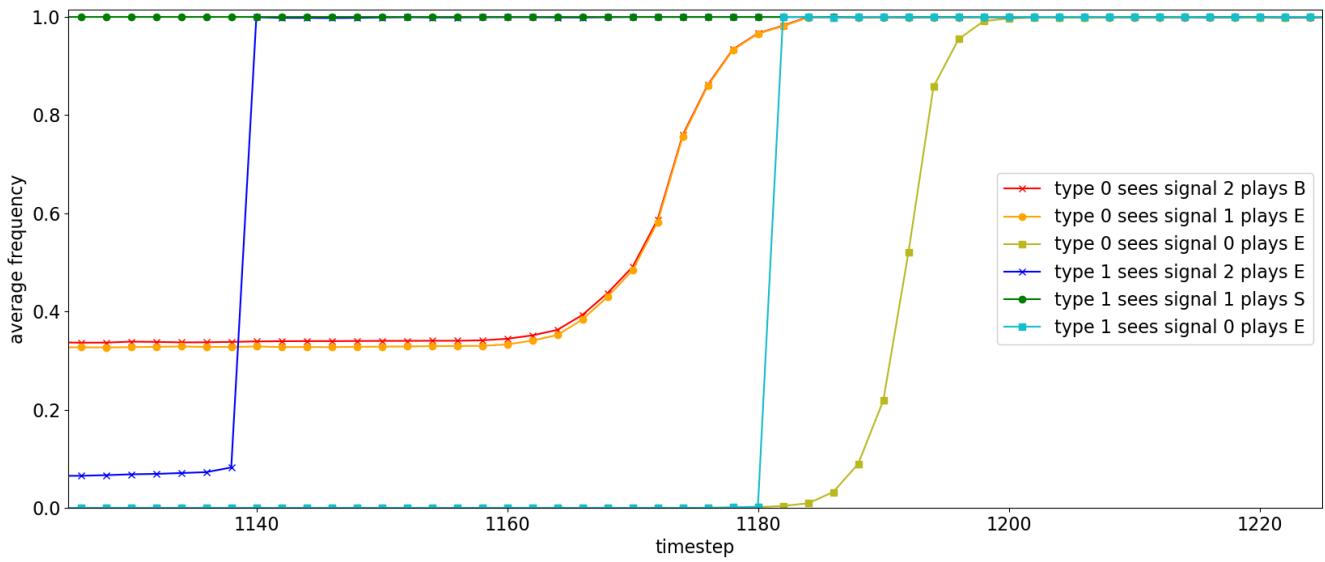
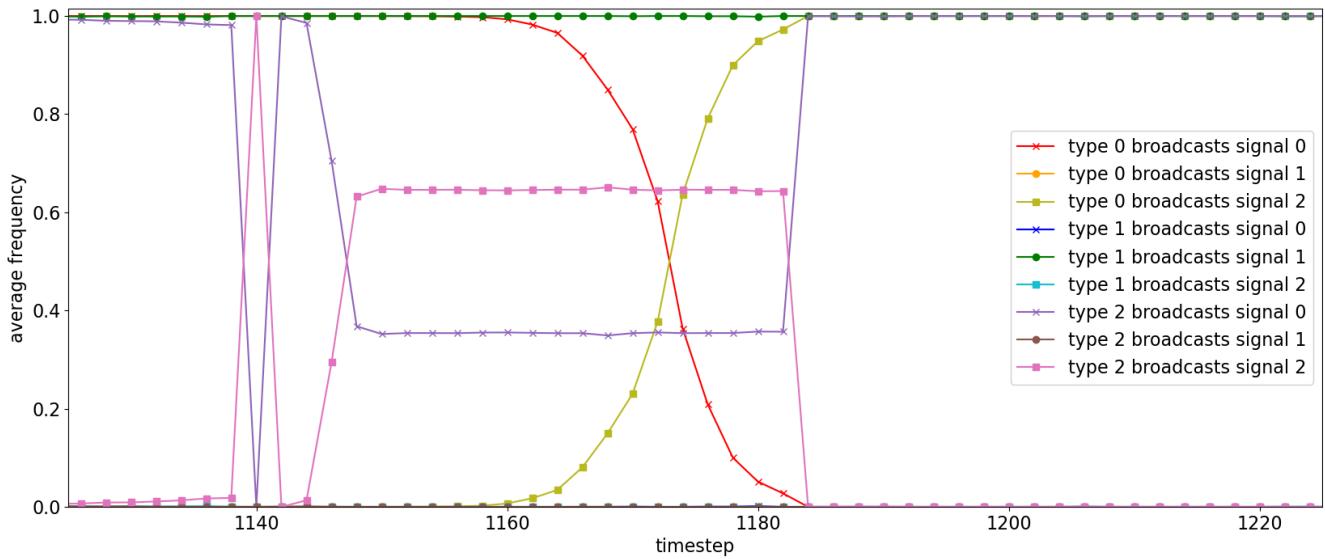
alpha = 0.5 and beta = 0.06 run # 876



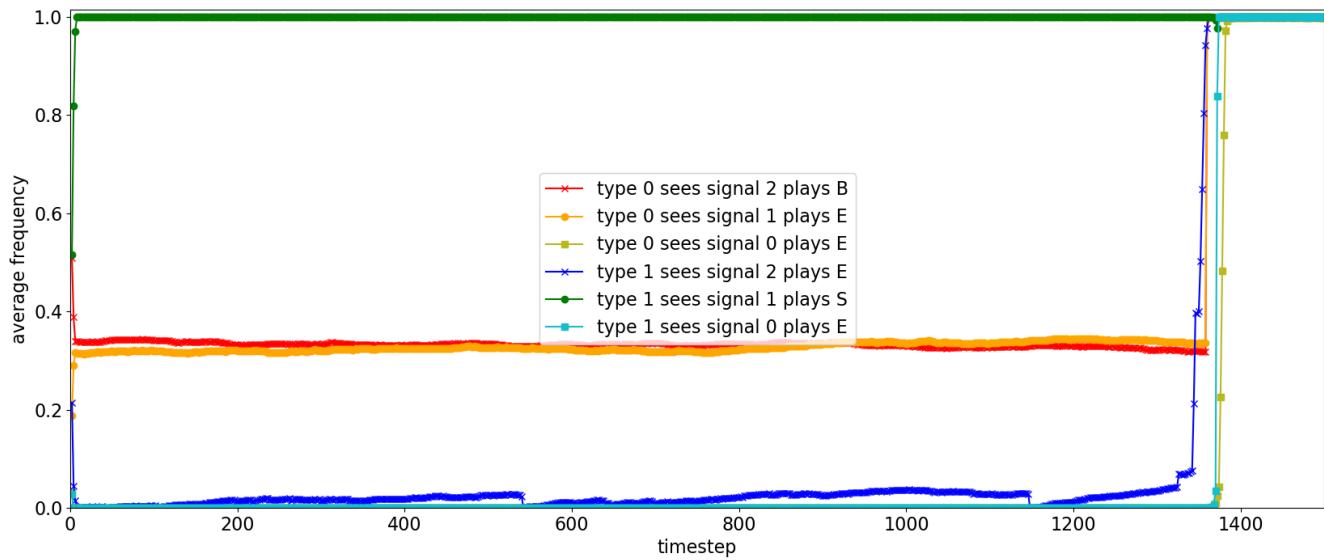
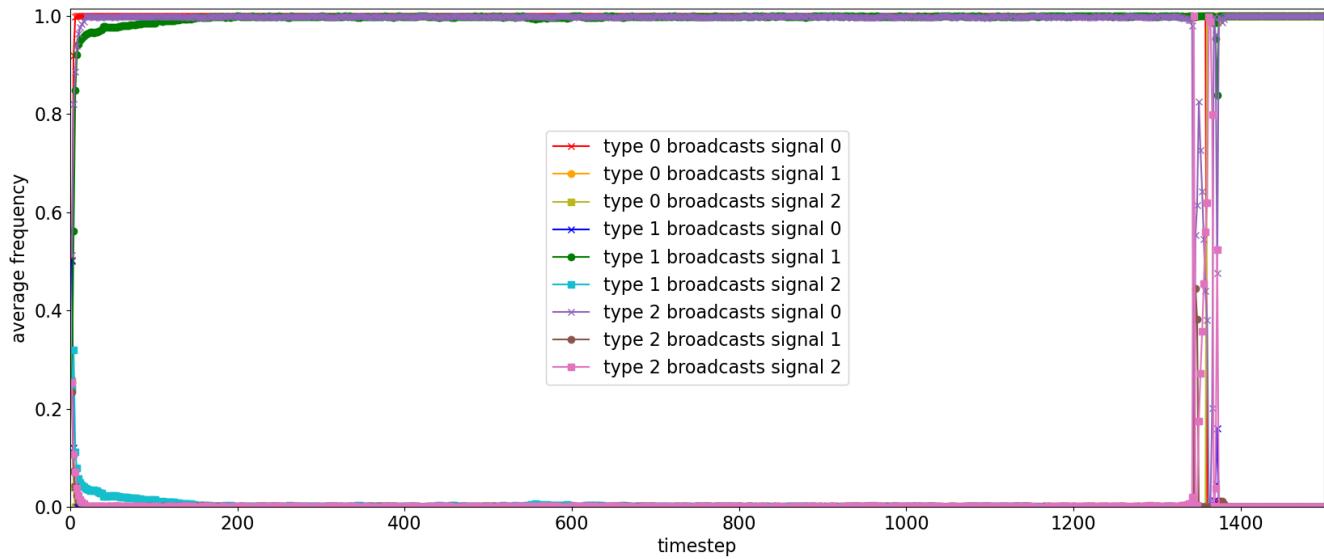
alpha = 0.5 and beta = 0.1 run # 196



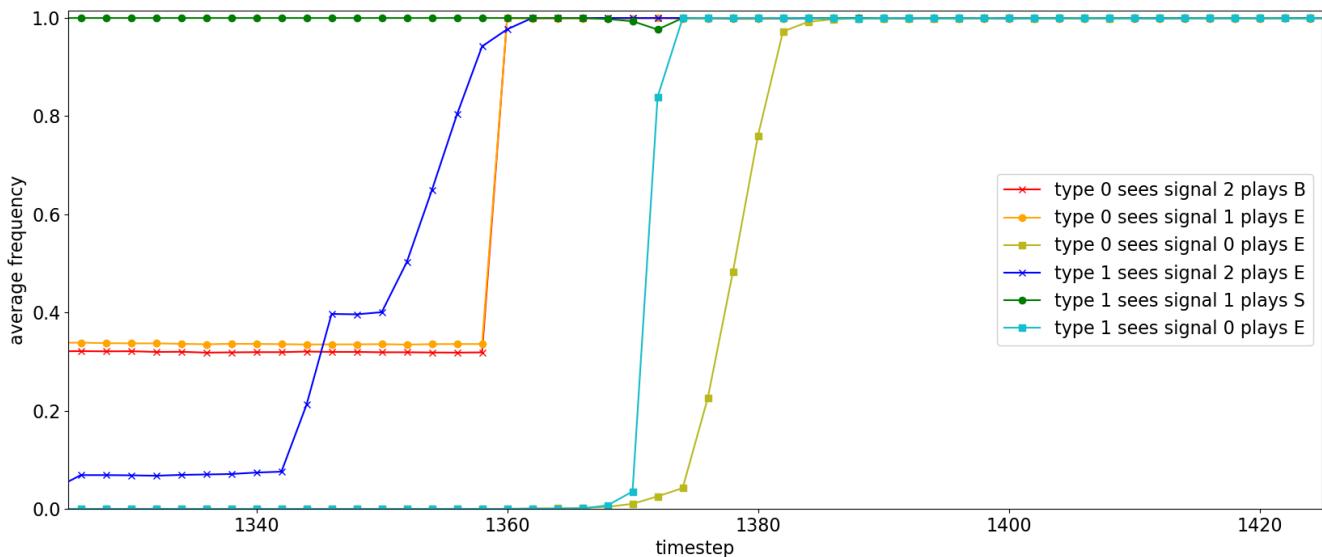
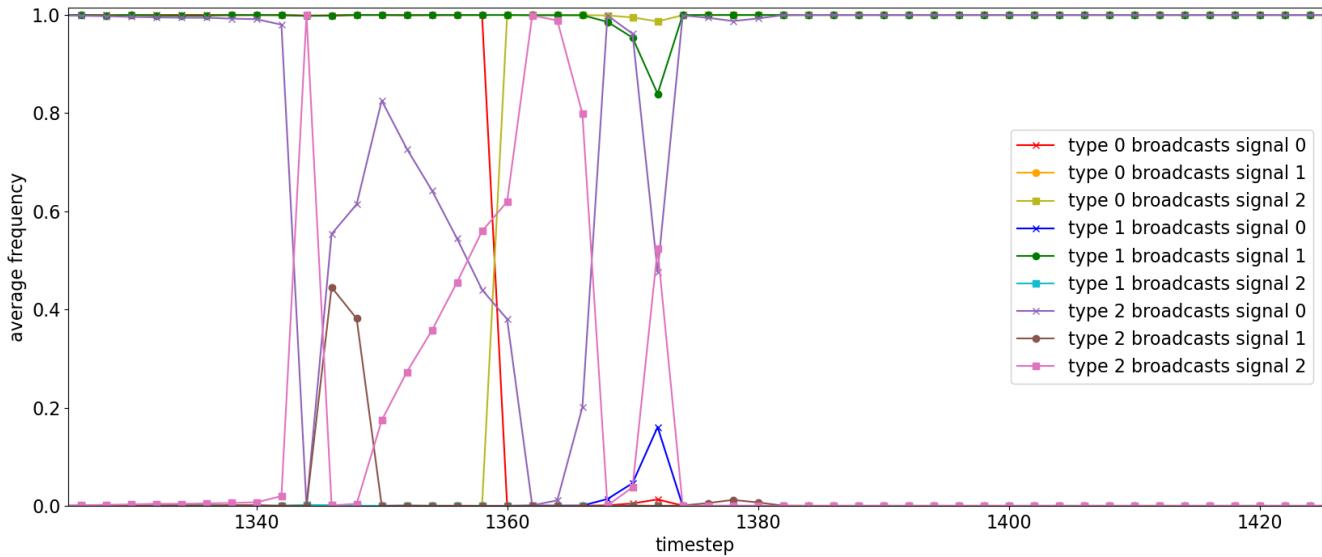
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alpha = 0.5 and beta = 0.1 run # 222



Continued



Finally done!