Transcript:

Line	Time	Speaker	Transcription
1783	0:30	R2	Jerel and Chris, how are you guys doing?
1784		C&J	Good.
1785		R2	Yeah, well thank you for coming down here. ‘Cause I told you
1786			there are some things, uh, that I heard you talk about, some ideas
1787			that you have that I’m really interested in hearing more about.
1788			And since it’s so noisy down at the other end of the room, and the
1789			hall, I thought we would, uh, chat here. Okay? So last week
1790			Thursday we started working on some dice games.
1791		C&J	Um humh. [in unison]
1792		R2	And do you remember the very first game that we worked on?
1793		C&J	Yeah. [in unison]
1794		Jerel	The one that was unfair.
1795		R2	The one that was unfair. Could you tell me about that first game?
1796			What was the rules of that first game?
1797		Jerel	The rules was that Player A got, uh, numbers 2 . . . [scratches his
1798			neck, then reaches for paper]. Ah, I can look at this one, it’ll tell.
1799			Player A got 2, 3,...
1800		Chris	No, that’s the one we did that today.
1801		R4	That’s the second game. Do you want to see the rules of the first
1802			one? [To Chris]: Do you remember anything about the first one?
1803		Chris	[Shakes his head no.] Nope.
1804		R2	Okay. [Gives paper to Jerel.]
1805		Jerel	I remember that Player A had, uh, [pause – looking at and pointing
1806			on the paper], I remember that Player A had 1, 2, 3, or 4. And
1807			Player, if it landed on one of them A gets one point and Player B
1808			gets zero. And if the die had landed on 5 or 6, Player B gets one
1809			point. And then from there we knew it was unfair because Player
1810			A had more choices than Player B can. And Player B only had
1811			two.
1812	2:02	R2	So you think that your, you think that that game is unfair because
1813			Player A has more choices than Player B?
1814		Chris	Yep.
1815		R2	Uh huh. And, um, would it matter, you’re saying more choices or
1816			because of the numbers that they?
1817		Chris	They got more choices.
1818		R2	They had more choices, okay.
1819	2:20	Jerel	It’s a higher percentage of, it 1,2, it landed on 1, 2, 3, or 4 than 5
1820			or 6.
1821		R2	Uh huh. When you say it’s a higher percentage, you know what
1822			percentage, or do you have any idea?
1823		Chris	[Shakes head no.]
1824		Jerel	Chance.

1825		R2	Chance, uh? Do you have any idea how likely it is for Player A to
1826			get a point than Player B?
1827		C&J	[Nod their heads to indicate yes.]
1828		Jerel	Uh huh.
1829		R2	Yeah? What can you say about that?
1830		C&J	[In unison] That ... [Jerel indicates that Chris should speak.]
1831		Chris	The probability of getting is 4 out of 6, ‘cause there’s 6 numbers
1832			on the dice and he has 4 chances of getting it.
1833		R2	Um humh. And did you guys play the game?
1834		C&J	Yeah.
1835		R2	Uh huh. And what happened? Tell me about what happened when
1836			you played the game.
1837		Jerel	[grabs paper] All right this was the first game. I beat Chris 10 to 2.
1838		R2	And you were ...
1839		C&J	Player A.
1840		R2	Player A. You were Player A. On the first game you received 10
1841			points and Chris received 2.
1842		C&J	[Nod in agreement]
1843		R2	Okay. Did you play the game anymore?
1844		Jerel	Yeah. We played it one more time to see if it, we changed, we
1845			changed ...
1846		Chris	sides rules.
1847		Jerel	Chris became Player B and I became, I mean Chris became Player
1848			A and I became Player B. And he beat me 5 to 6. I mean 10 to 6.
1849		R2	10 to 6.
1850		Chris	Um humh, ‘cause we had to change the rules. We put that Player
1851			A gets 3 choices 1, 2, and 3, and Player B got 4, 5, and 6.
1852		R2	Oh, I see. So that’s when, when you decided to change the rules of
1853			the game to make it, why did you change the rules?
1854	3:45	C&J	[In unison] So it could be fair.
1855		R2	So you changed it so it could be fair.
1856		C&J	Uh huh.
1857		Chris	‘Cause, uh, the first game, since it was 10 to 2, that was a kill by 8
1858			points, but in the second game it was only a kill by 4 points.
1859		R2	Okay. Well, let’s go back to the first game for a minute. Um, do
1860			you think that if you played the first game, right, where Player A
1861			receives a point if it receives, if it rolls 1, 2, 3, or 4, and Player B
1862			receives a point if the dice rolls, if the die rolls 5 or 6, do you think
1863			that that game, if you played it 6 times, would it be ... who, who
1864			do you think might win?
1865		Chris	Player A.
1866		Jerel	Player B. Player A
1867		R2	You still think Player A might win.
1868		Jerel	[Nods in agreement.]
1869		R2	All 6 times? Or just once?

1870		Jerel	All 6 times.
1871		Chris	Almost all 6 times.
1872		R2	Yeah? Suppose you were to play the game 60 times.
1873		Jerel	Player A would still win.
1874		R2	Yeah? Do you have ...
1875		Chris	Most of the games.
1876		R2	Most of the games? When you say most ...
1877		Jerel	59 out of 60, yeah.
1878		R2	59 out of the 60 games Player A? What about 100 times?
1879		C&J	[smile]
1880		Jerel	99 out of 100
1881		R2	Yes. 99 out of 100. So it seems like Player B's chances goes
1882			down the longer, the more that you play the game. Is that right? Is
1883			that what you're saying?
1884		C&J	Um humh. Yep.
1885		R2	What about your fair game? Tell me about your fair game. What
1886			were the rules?
1887	5:12	Jerel	Uh, that ...
1888		Chris	The rules were that um Player A, if Player A rolled a 1, 2, or 3, it
1889			would got a point, it would get a point, and Player B woulda got
1890			zero. But if Player B rolled a 4, 5, or 6, it woulda got a point.
1891		R2	I see. So why is that fair?
1892		Jerel	Because, they, it's a 50-50, it's a 50-50 chance of Player A or
1893			Player B winning.
1894		R2	What do ya mean 50, you mean if you played a hundred times,
1895			what would you expect to happen?
1896		Chris	Probably 50 each.
1897		R2	They would each win 50 times?
1898		Jerel	Or 40, or 40-50. Or 40 or 50 or 40 se-..., no [laughs] 40-60.
1899			Somethin' like that.
1900		R2	Uh huh. 40-60. So you think, and 40-60, is that sort of close
1901			enough to be fair?
1902		C&J	Uh huh. Um humh.
1903		R2	Okay. Um, does it matter which numbers ...
1904		Jerel	If you playin'
1905		R2	they can roll?
1906		Jerel	If you playin' with one dice, yeah. But if you was playin' with
1907			two, it would matter 'cause you can't get 1, you can't get 1 when
1908			you playin' with two dice 'cause 1 is the first number, you can't
1909			roll [rolls two dice] you can't get number 1 like that.
1910		R2	But like if you're only playing with one die, okay, would it matter
1911			whether you said Player A receives a point if, for example, Player
1912			A instead of getting 1, 2, or 3, got 2, 3, 4, and Player B had 1, 5,
1913			and 6?
1914	6:42	Chris	Yeah, that would've been fair, too. Of if he got odd and even

1915			numbers.
1916		R2	That would, yeah? So what is it that's making it fair?
1917		Chris	The number of chances that you have to get the number.
1918		R2	Oh, and in this case it'd have to be, what do you think it would
1919			have to be?
1920		Jerel	3 and 3 people get 3 numbers and the other person gets 3 numbers.
1921	7:05	R2	What about the second game? Do you remember the rules of the
1922			second game that you played?
1923		Chris	Yeah.
1924		Jerel	That we made up?
1925		R2	Not the uh second game that you made up. You made up more
1926			than one fair game for the first game?
1927		Chris	[Nods.] We made up two games. We made up two games.
1928		R2	Okay. What was the second one?
1929		Jerel	Oh no, not for this one [pointing at paper on the table], not for this
1930			one.
1931		Chris	We made up our own.
1932		R2	Oh, okay. What about for the game with two dice?
1933		Jerel	Oh, two dice ...
1934		R2	Tell me, tell me about that game. Tell me what, as it was stated,
1935			what were the rules of that game?
1936		Chris	It was, it was, the rules were um ... [turns over paper].
1937		Jerel	If the, if the dice...
1938		Chris	landed on 2, 3, 4, 10, 11, or 12, Player A woulda got a point and
1939			Player B woulda got zero. And if the dice land on 5, 6, 7, 8, or 9,
1940			Player B woulda got a point.
1941		R2	And what did you think before you started playing it? Was, did ya
1942			think that this game was fair or not?
1943		Chris	Unfair.
1944		Jerel	It was unfair.
1945		R2	Unfair.
1946		Chris	'Cause Player A it had like, it had 3 small numbers, which are 2, 3,
1947			and 4, and you really can't get 'em. 'Cause right here we made a
1948			chart after ...
1949		Jerel	[Nudges Chris and points to his paper.]
1950			[The paper says: "The reason why the game isn't fair is because
1951			player B has a better chance has big numbers and Player A has
1952			small numbers." It then lists the numbers for Player A, labeling 2,
1953			3, and 4 as "3 small" numbers and 10, 11, 12 as "3 big" numbers.
1954			Player B"s numbers, 5, 6, 7, 8, and 9, are labeled as "all big".]
1955		Chris	that 3 got one chance to get it, 2 got one chance, and, oh I didn't do
1956			4.
1957		R2	What? Let me see. Put you paper here just so I can see it. And
1958			explain to me what you're, what the idea is.
1959		Chris	Right here [pointing at paper], we put like how many times, how

1960			many ways can you get um each number.
1961			[The paper shows:
1962			7 = 4+3, 5+2, 6+1
1963			6 = 3+3, 2+4, 1+5
1964			5 = 1+4, 3+2
1965			3 = 1+2,
1966			2 = 1+1
1967			8 = 4+4, 2+6, 5+3,
1968			9 = 3+6, 4+5
1969			10 = 5+5, 4+6,
1970			11 = 5+6,
1971			12 = 6+6]
1972		Jerel	Like for this ...
1973		R2	How many ways there are to roll each number?
1974		C&J	Um humh. Yeah.
1975		Jerel	Like for 7 it was 4, 4 + 3 equals 7, 5 +2, and 6+1. For 6 it was
1976			3+3, 2+4, and 1+5. For 5 it was 1+ 4, 3+2. For 3 it was 1+2, 1+1
1977			for 2. Eight for, was 4+4, 2+6, and 5+3.
1978		R2	Um humh.
1979		Jerel	Nine was 3+6 and 4 + 5. Ten was 5+5, 4+6. Eleven was 5+6.
1980			Twelve was 6+6. And 4 was 2+2 and 3+1.
1981	9:12	R2	And so why did you, why did you make this calculation? Why did
1982			you figure this out?
1983		Chris	Because after we played the game we realized that um Player B
1984			had, since it had larger numbers it had more chance of getting ‘em.
1985		Jerel	And 7 ...
1986		R2	Since the numbers were larger.
1987		Chris	Um humh.
1988		R2	So what were the numbers that Player B on, would receive a point?
1989		Chris	5, 6, 7, 8, and 9.
1990		R2	5, 6, ,7 , 8, and 9.
1991		Chris	Uh huh. ‘Cause if you add up how many ways you can get ‘em ...
1992		Jerel	[Interrupts.] Seven kept popping up.
1993		Chris	You got, for 5 you got 2, then you got, for 6 you had 3, then for 7
1994			you had 3, for 8 you had 3, and for 9 you had 2 [writing these
1995			counts on the paper]. So if you add these up, you had 13 different
1996			ways to get your numbers.
1997		R2	So Player B had 13 different ways of winning on a roll.
1998		Chris	Yeah. And Player A had, for 2 you only had 1 chance, for 3 you
1999			had 1 chance of getting it. Four you had 2 chances, 10 you had 2
2000			chances, 11 you have 1 chance and 12 you have 1 chance [writing
2001			the counts on the paper]. So you got 8.
2002		R2	So, and is that what you thought at first, when you first read the
2003			game?
2004	10:29	Chris	I thought, when we first read the game, I thought ...

2005		Jerel	I thought it was fair.
2006		Chris	We thought it was fair because Player A had, well, it was still
2007			unfair but Player A woulda got more, woulda won. But after you
2008			played the game we saw that Player B started winning, so we just,
2009			um, thought that it was unfair and we figured it out.
2010		R2	Uh huh. So, so let me see if I understand. When you first read the
2011			game, you thought that that Player A ...
2012		Jerel	Was gonna win.
2013		R2	was more likely to win.
2014		Chris	Um humh.
2015		R2	Um humh. Then you played the game and you found out that B
2016			was winning.
2017	11:00	C&J	Um humh.
2018		R2	Let's see. Where are the games you played where ...
2019		Chris	Right here. [C&J point at the paper.] For the first game, Player B
2020			won, won 10 to 3. And right here we put the rolls of each one.
2021		Jerel	Seven kept coming up.
2022		Chris	Uh huh. Seven came up. For Player B it came out 5 times and for
2023			Player A it came out 3 times.
2024		R2	So you're saying when Player B rolled, 7 came up 3 times?
2025		Chris	Five times.
2026		R2	Five times. And when Player A rolled, 7 came up ...
2027		Chris	Three times.
2028		R2	Three times.
2029		Chris	So 7 kept on popping up most of the games.
2030		R2	Why did 7 come up so much?
2031		Chris	'Cause it ...
2032	11:38	Jerel	Oh because it had a better chance, because it had 3 ways to get it.
2033			And that's why, if you can't, if you added them together, that's
2034			what kept coming.
2035		Chris	Um humh. So it's 5, 6, no, I mean, 7, 6, 7, 8 had 3 different ways
2036			of getting the numbers.
2037		R2	I see, so that's what you're, you're saying here. So that's why you
2038			did this analysis is because you saw 7 came up so often?
2039		Chris	Um humh.
2040		R2	And you wanted, so you did this to try to understand why 7 came
2041			up that often?
2042		Chris	Yep.
2043		R2	And here you're saying you can roll a 7 if you have a 4 or 3.
2044		Chris	Um humh
2045		R2	And, or a 5 and a 2, and a 6 and a 1.
2046		Chris	Um humh.
2047		R2	And those are the different ways that it's po-, that you can obtain a
2048			7 on a roll of two dice.
2049		Chris	Um humh.

2050		R2	Now, I see here [pointing at paper where Chris had just written the
2051			number of ways to get each sum] you're saying that this 2 refers to
2052			the number of times, which number?
2053		Chris	5.
2054		R2	Five appears. And this 3?
2055		Chris	6.
2056		R2	And this one? [pointing at 3]
2057		Chris	7.
2058		R2	Ah hah. But you're saying 6 is a, has 3 possibilities, and there are
2059			3 possibilities of rolling a 7. Now, did you, did that come out for
2060			you experimentally when you played the game? That 6 also
2061			appeared...
2062		C&J	[Nod in agreement.]
2063		Jerel	Yeah.
2064		R2	More often? Did it appear as often as 7?
2065		Chris	No. [shakes head]
2066		R2	How often did 6 appear?
2067		Jerel	Uh not uh ...
2068		Chris	Not as much as 7. „Cause when ...
2069		Jerel	The first game it appeared twice on my side and once on his side.
2070	13:12	Chris	And the second game it came out 1, 2, 2 times on his side and 1, 2,
2071			3, 3 times on my side, uh on my side.
2072		R2	Uh huh.
2073	13:21	Jerel	It wasn't as consistent as 7 was. It didn't come, it kept coming out
2074			like this [tosses dice, apparently rolling a 7]. See? [waving his
2075			hand over the dice and smiling]
2076		Chris	'Cause 7 in the second game, it came out 1, 2, 3, 4, 5, 6, 7 times.
2077		R2	Um humh.
2078		Chris	And then, last time it came out 1, 2, 3 times.
2079		R2	The 6?
2080		Chris	Um humh.
2081		R2	Okay.
2082		Chris	No, the 7.
2083		R2	The 7. So you're saying the 6 doesn't come up quite as often as
2084			the 7.
2085		Chris	No.
2086		Jerel	Even though it has 3, uh, ways to get it.
2087		R2	Um humh.
2088		Jerel	Eight comes up a lot, though.
2089	13:53	R2	If you were to play the game more often, say you played it 10
2090			times, what do you think might happen in terms of the number of
2091			times 6 and 7 would come up?
2092	14:01	Jerel	It'd, it'd be a lot more.
2093		Chris	Um humh.
2094		Jerel	15 to 20.

2095		R2	Would they, would it be about the same or would 7 still come up
2096			more often?
2097		C&J	Seven would still come up more often.
2098		R2	Seven still come up more often. So, Chris and Jerel, there's
2099			something I don't understand. I'm a little confused here. You said
2100			here you have 7, there are 3 possibilities for 7. And Chris you said
2101			here there are 6 possibilities for 6, 3 possibilities for 6?
2102		Chris	Um humh.
2103		R2	So if you say that the number of possibil-, number of possible
2104			ways to obtain a 6 and a 7 are both 3, why do you say that 7, it's
2105			more likely for 7 to appear if you were to play the game often?
2106		Jerel	[very quietly] Never thought about that. [louder] Maybe because
2107			[rolls dice], wait, let me see that. That was 7, right? Maybe
2108			because it takes, [pause] I don't know.
2109		Chris	'Cause it takes more smaller numbers to make up, um the 6. And
2110			for 7 it takes like most, more large numbers to make up, make it
2111			up.
2112		R2	I don't know what you mean. Will you explain that a little further?
2113		Chris	Like here, like say 1, 2, and 3 on the dice are the smallest numbers,
2114			like the smallest numbers or have the smallest. So 3 came out
2115			twice, 2 came out once, and 1 came out once. So you had two
2116			large numbers left.
2117		R2	Um humh.
2118		Chris	So, but for 7 it had 3, 2, 1, three of 'em, and then 3 large numbers,
2119			so it had more possibilities again.
2120	15:42	R2	So you're, let me see if I understand. You're saying that the, for 7,
2121			you have a 1, a 2, and a 3, and you call those the small numbers.
2122		Chris	Um humh.
2123		R2	And they're more likely or less likely to appear over all?
2124		Chris	Less likely.
2125		R2	Less likely to appear. And the 4, 5, and 6 are larger numbers and
2126			they're more or less likely?
2127		Chris	More.
2128		Jerel	[Has had his head down during this exchange.] More.
2129		R2	More likely. Um, and so, tell me again about the 6 here.
2130		Chris	It had 3, 3, 2, and 1, which is four less likely to appear.
2131		R2	Oh, so those are four less likely to appear numbers because those
2132			are smaller.
2133		Chris	And then two, 4 and 5 were more likely to appear numbers.
2134	16:34	R2	Um humh. So the 7 has how many likely pairs, to appear numbers
2135			that come up when you ...
2136		Chris	Three.
2137		R2	Uh huh. And the 6?
2138		Chris	That's 2.
2139		R2	It's 2. That's interesting. So, and how do you know that the 4 and

2140			the 5, the 4, 5, and 6, are more likely to appear than the 1, 2, and 3?
2141			Or, is that on the roll of the die?
2142		Chris	[Nods]
2143		R2	You're saying that they're more likely to appear?
2144		Chris	See, 'cause if you roll [rolls one die], got a 5, a 5, 6, 3. See, that's
2145			only once. And if you keep rolling [rolls again] 4, 3, twice ...
2146		Jerel	6
2147		Chris	Second time ...
2148		Jerel	I can maybe 'cause...
2149		Chris	Third time, fourth time.
2150		Jerel	Seven got one even number...
2151	17:27	R2	Wait. Let's keep track of this, okay? Let's take a sheet of paper
2152			and keep track of how they're coming up. [Gives the boys a
2153			paper.] Who's gonna roll and who's going to keep record?
2154		Jerel	[points to Chris] Roll.
2155		C&J	[Chris rolls die] 1, 4
2156		R2	How many times do you intend to roll?
2157		Chris	Uh, 10.
2158		R2	Okay.
2159		Chris	6, 2, 4, 1, 3, 1, 2, 6. [To Jerel] How much is that?
2160		Jerel	One is consistent. [Taps his pen on the paper as if pointing to and
2161			counting the rolls.]
2162		Chris	We did it 12 times
2163		Jerel	I know.
2164		R2	Um humh. Okay. So what does this tell you? What does this
2165			experiment tell you?
2166		Jerel	That 1 came up a lot. One came up 1, 2, 3, 4, 5 times.
2167		R2	Um humh.
2168		Jerel	And the other numbers came up 1, 2, 3, 7 times.
2169		R2	Which other ones?
2170		Jerel	Like, 6 came up twice.
2171		R2	Um humh.
2172		Jerel	Four came up twice. Three came up once and 2 came up twice.
2173		R2	Now, does this experiment corroborate your original idea?
2174		Chris	No. [shakes head no]
2175		Jerel	[shakes head no]
2176		R2	No. So, is it because of the way you threw the die, or ...
2177		Jerel	Yeah, wait a minute . . .
2178		R2	Or maybe you have to throw it more times?
2179		Jerel	When it landed on here [lifts mat from the table] it kept rolling to
2180			7. Look. Well it kept rolling to 6 or something like that. [Places
2181			die on the mat.] 5
2182		R2	Was that, do you call that a roll, what Jerel just did?
2183		Chris	No [laughs].
2184		R2	That seemed like placing it down to me.

2185		Jerel	[rolls die] 1
2186		Chris	[rolls die] 1
2187		R2	Are you keeping track?
2188		Chris	[rolls 1 off the mat and doesn't count it] 2, 6, 1
2189		Jerel	[whispers to Chris] It's still low numbers.
2190	20:00	Chris	5, 5, 4, 6, 1, 5. [The 5 was rolled off the mat, but counted.] How
2191			many times is that?
2192		Jerel	[counting silently] 10
2193		Chris	It's fine [?]. Okay.
2194		Jerel	Well, all the numbers you can get 7 by. [Looks at R2 and smiles.]
2195			'Cause 1+6, 2+ ...
2196		Chris	Four.
2197		Jerel	Yeah, 2+4. No, wait. [Turns and looks at Chris.]
2198		Chris	Oh, 4+3
2199		Jerel	[To Chris] No, 5 + 2. There's 6+1, 5+2, 5+2, 4+3, 6+1, and 5+2.
2200			[taps paper with his pen]
2201		R2	Oh, but I thought we were, you were talking about whether or not
2202			the 1, 2, or 3 is less likely to appear than 4, 5, 6.
2203		Chris	[Reaches for paper] The 1 appears...
2204		R2	So what about this idea?
2205		Chris	[Circles the 1's and 2's on the paper. There were no 3's.] The 1,
2206			2, or 3 appears 4 times, and the large numbers appear 6 times.
2207		R2	So you have, you rolled the dice now, you rolled the die how many
2208			times so far altogether?
2209		Chris	Ten. Oh. [Writes "large numbers = 6", later changes this to 10.]
2210		Jerel	Oh, all 22.
2211		R2	Okay, so what happened in this, these 22 trials?
2212		Jerel	Ummm, [pointing at paper] the first time little numbers kept
2213			coming up.
2214		Chris	Um humh. [Writes "small numbers = 10", later changes this to 12]
2215		Jerel	The second time all the big numbers came, like ...
2216		R2	So if you combined this, if you combined the two trials?
2217		Jerel	The little numbers showed up more.
2218		R2	Is that true?
2219		Chris	[writing on the paper] Let me check.
2220		R2	And by little numbers you mean 1, 2, and 3?
2221		Jerel	[speaking at the same time] 1, 2, or 3. [Nods in agreement.]
2222		R2	So how many times did a 1, 2, or 3 show up?
2223		Jerel	All together, the 1, 2, [inaudible] ...
2224		Chris	Ten, [inaudible] wait, counted wrong.
2225		Jerel	[counting while tapping the paper] Twelve times. And the large
2226			numbers showed up 10 times.
2227		Chris	Um humh.
2228		R2	So what about your theory? The idea that you have.
2229		Jerel	Well, what about when you roll with two dice?

2230		R2	Before we go into the two dice situ-, two dice , what about this one
2231			die? Because you guys originally said that the lower numbers, 1, 2,
2232			and 3, were less likely to appear than the 4, 5, 6.
2233		Jerel	Yeah, but that was ...
2234		R2	Do you still hold to that?
2235		Jerel	No.
2236		R2	Chris? You don't look like you're sure.
2237		Chris	[Shakes head no]
2238		R2	You're shaking your head meaning what?
2239		Chris	Don't know [smiling].
2240		R2	You don't know whether you want to revise your idea or whether
2241			you're going to stick with it?
2242		Chris	[shrugs his shoulders and makes a small giggle]
2243		R2	You're not sure?
2244		Chris	[shakes head]
2245		R2	So, what did this experiment tell you?
2246		Jerel	That the big numbers don't always show up. Like, when we
2247			played, it don't always show up.
2248		R2	Um humh. So in the one, remember in the one die game? How
2249			did you make that game fair?
2250		Jerel	Um [laughs twice]
2251		R2	Do you remember, Chris, what you told me?
2252		Jerel	Oh yeah, we, we gave each person 3, 3 numbers.
2253		R2	Um humh. And which numbers did you give to Player A?
2254		Chris	Player A, 1, 2, and 3.
2255		R2	And to Player B?
2256		Chris	Player B, 4, 5, 6.
2257		Jerel	But that...
2258		R2	And you call that a fair game. But I thought, but by your theory,
2259			that 1, 2, and 3 are less likely to appear, then it's not a fair game.
2260		Jerel	What?
2261		Chris	[shakes head]
2262		R2	So I'm confused about what you're trying to tell me.
2263	24:00	Jerel	Now [sighing and smiling]. All right. I can make that a fair game.
2264			We give somebody 1, 4, and 5, and give the other person 2, 3, and
2265			6. That'd be fair. You got two low numbers and one high number.
2266		R2	Yep. That's fair. So it seems to me that this experiment somehow
2267			is causing you both to doubt your idea. Is that right?
2268		C&J	Yep.
2269	24:30	R2	Uh huh. Is there something you want to say about that?
2270		Jerel	Uh, nah.
2271		Chris	[shakes head]
2272		Jerel	I don't want to say nothin'.
2273		R2	Well, you know maybe it would be interesting to think again about
2274			this problem involving both the one die and the two dice games so

2275			that you could come back maybe some other time to give me a
2276			better idea of what you're thinking about?
2277		Chris	[nods in agreement]
2278		R2	To see whether or not things have changed or whether or not
2279			you're still holding on to the same set of ideas that you now have.
2280		Chris	[nods]
2281		R2	Yeah?
2282		Chris	Um humh.
2283		Jerel	[nods]
2284		R2	Okay.