

How To Play
Scrabble Like
Matthew O'Connor

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Introduction

There have been a lot of questions, and a lot of comments related to the way I play Scrabble, especially as I upload annotated games to cross-tables and appear in stream games at events that my dad runs. Many comments are about my “unique playing style.” While I believe that this statement is true in some sense, I believe that describing Scrabble players as having a style is fallacious in its implementation, as it implies that having a style is a good thing, when it is in fact a bad thing.

When I sat down to play Austin Shin at the recent 2024-25 New Years tournament in Albany, Will Anderson commented that it was a true “stylistic faceoff”. Austin is well known for rigidly sticking to equity principles and basic board control principles, and I am more known as a “defensive player” (a term I also think is somewhat fallacious) when in fact I try to control variance in more extreme ways than most top players.

It remains a fact, and effectively, a mathematical axiom, that if two different players have wildly different playing styles and are rated approximately the same (effectively me and Austin, though I concede that Austin is a slightly better player than me), that in fact, both players could do a lot to improve. This is due to the fact that, at each turn where we would make different plays, one of us has to be right, and if we are similar in our abilities, there is an approximately equal chance of each of us being right. The further we deviate in playing style, the more times we would disagree, and therefore, the more times each of us has to be wrong. We would both improve drastically by attempting to incorporate the other person’s strengths into our own play.

In this book I will attempt to show you that A: it is fallacious to call me a “defensive player” even though I probably am more so than other top players, B: different things I do that I believe all top players should be doing a lot of, and C: how you can incorporate the things in B into a real time game situation, even with the clock ticking. I will stick rigidly to the principles of mathematics and logic in an attempt to form a cohesive argument as to how these principles are correct.

Information about Scrabble

Scrabble is what’s known as an incomplete information game. In Scrabble you do not know what letters are on your opponent’s rack. This is a similar concept to poker, where you do not know what cards your opponent is holding, and it is dissimilar to

chess, where you do know where your opponent's pieces are. In an incomplete information game, one must not only calculate the equity of your own plays, but one must do so with respect to your opponent's "range" (the possibilities for what your opponent could be holding). Any legitimate attempt to solve Scrabble must take ranges into account, which makes the task much more daunting than in a game like chess.

Scrabble is, however, a special kind of incomplete information game, because it approaches a complete information slowly throughout the game, and by the endgame, it is a complete information game. Scrabble endgames can be solved simply with brute force, there is no need to consider your opponents range, because, if you tracked correctly, you know exactly what your opponent has. One in the bag endgames are close to this, you can solve them perfectly by iterating out all 8 possible combinations, and, if two moves are tied for the number of endgames they win, you can attempt to figure out which tiles are more likely to be in the bag using range analysis, and make the play that wins with the tiles are more likely to be in the bag. 8 is of course much greater than 1, however, and this quickly becomes a daunting task that is too complicated for a human.

Still, the idea is there, and Scrabble is theoretically a game that can be solved. A hypothetically solved version of Scrabble would involve both players playing against each other and developing ranges at each possible game state, and probably mixed strategies in a lot of places. This is the algorithm that is used in making poker solvers.

Another fact that is inherent about Scrabble is that it naturally encourages paranoia. This is because when you open a lane, you do so by using your turn, and it is now your opponent's turn, and your opponent gets first crack at the lane. This is a large part of why I am seen as a "defensive" player, when I simply respect this fact.

Concepts I Incorporate

Ranges

In this section I will show off the different plays I made that use the concept of ranges guide my decision making

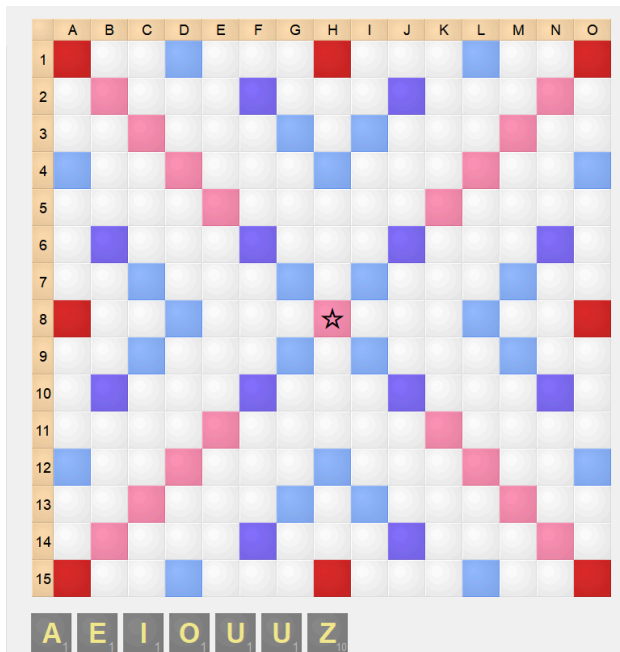


Diagram 1

Diagram 1 is a position I faced at the 2023 Word Cup against Ben Schoenbrun. In Diagram 1, I am going first to start the game. The first thing to keep in mind is that the best plays that are not exchanges (EUOI or ZOEA) are too low in equity to consider playing. Once you take that into account, you can start to consider the different exchanges and the merits and drawbacks to each of them.

The “standard” play here is probably to exchange OUU and keep AEIZ. This is certainly worth consideration, but one must consider the likely opponent responses. After an exchange 4, the likely opponent responses are a short word or an exchange back. After a short word, your Z is not gonna be very useful, and after an exchange back, you are not as likely as you think to hit a 48 point play.

There is a common principle in effect in Scrabble that if you exchange 1 or 2 on your opening play, your opponent is supposed to exchange back a large percentage of the time. This is because, after an exchange 1 or an exchange 2, you are very likely to draw a rack that is one letter away from a bingo, and any word your opponent plays is very likely to set up floaters.

If you want to seriously consider setting up a balanced range in this spot, you need to come up with a way to make your opponent wish they played a word. To do this, you need to find marginal places to sacrifice equity. I did this by choosing to **Exchange UU, keeping AEIOZ**. AEIOZ appears to be a significantly worse leave, but in fact, it is only a little bit worse than AEIZ. According to the most recent leave values, AEIOZ is

worth 13.8, and AEIZ is worth 15.0. In effect, I am sacrificing 1.2 points of equity for a drastically increased likelihood of Ben exchanging back.

If Ben exchanges back, then any of AELNORSW, as well as numerous two tile draws, gives me a 48+ point Z play on the double. In addition, many draws like B and C give me good 38 point plays. This play has yet another positive attribute, which is that if Ben knows I am capable of doing this sometimes, he will be more likely to make a play in situations where I exchange 2 with bingo tiles, thus increasing my bingo chances in those situations.

In effect, I am sacrificing a measly 1.2 equity points for a plethora of benefits. A play like this should be standard and almost automatic among everyone at the highest level of Scrabble, yet when I made this play on stream, one commentator stated “I don’t think I would’ve done this” and another commentator stated “I don’t think this play has ever been done in the history of Scrabble.” It is likely given the vowel consonant ratio that this leave is somewhat counterintuitively good, but it still remains true that a top level Scrabble player should be able to realize what a good leave AEIOZ is in a real time game situation, as it contains the word ZOEAL, and is one letter away from numerous Z bombs, as well as a not insignificant number of bingos that play for 100+ sometimes since they contain the Z.

The reality of the situation is that, given the way ranges work in Scrabble, a range of exchange 2s should include lots of bingo tile leaves, as well as the occasional leave that is likely to hit a Z bomb if opponent exchanges back. The opponent responding to the exchange 2 should exchange back in situations where the best play that is a play and not an exchange is somewhat marginal. If Z leaves are in opponent’s range, you should make plays slightly more often, and if they are not, you should exchange slightly more often.

If I were to only exchange 2 with bingo tiles, Ben would be more likely to exchange back, and I wouldn’t bingo as often. If I were to only exchange 2 with AEIOZ type racks, Ben would always cover the star and I wouldn’t get full value from my Z. When I mix the two, I create what is called a balanced range, and Ben is in a significantly tougher spot. This is the lifeblood of a game like Scrabble that is based on ranges and incomplete information

But we also must keep in mind the types of Z racks I can exchange 2 with. I need to find racks where I don’t have a lot of other options. So that I don’t end up passing up 30 point plays just to add something to my range. For this reason, my rack is the perfect candidate. AEIOZ is an excellent leave, and, in addition, only LL, UU, and IU in addition to AEIOZ leave it with no good options, making all of those racks great candidates to exchange with AEIOZ, without having AEIOZ too often.



Player	Rack	Score
Joshua Castellano		58
Matthew O'Connor	ACEFILT	76

Last move: H7 FOIN +7 58
from rack of: FILNNOS

Tiles on rack:
A C E F I L T

Unseen tiles:
A A A A A A B C D D D D E
E E E E E E E E G G G H I
I I I I I J L L L M M N N
N N N O O O O O P P Q R
R R R R R S S S T T T T
U U U U V W X Y ? ?

Here is another example of a position on livestream that caught the commentators off guard. In this example, I am considering my opponent's range rather than trying to set up my range in a particular way. Setting up your own range in a specific way and considering your opponent's range are both important ways to consider ranges and how they interact with Scrabble.

In this situation I have a solid, but not amazing rack. I do not have a playable bingo, and there are no floaters to play my eights, even though I am agonizingly close to FACELIFT. I can make many different types of plays here. CLIFF is the best way to clean out both the C and the F and focus on a leave full of one pointers. CAZ scores 15 and does its best to not open up the board too much by slotting a C near the triple, requiring Josh to have the one remaining H in order to use the triple. I could even play something like IFF if I wanted to be super aggressive and keep a good leave, setting up my T in the double double lane.

Despite all of these options, I almost immediately played 10H (N)ET, a play that only scores 18 points and gets rid of the two best tiles on my rack. Despite how counterintuitive this play seems, it simmed best, and I think this should be the type of play that goes down immediately at the highest levels of Scrabble.

Josh's play of FOIN suggests a strong leave. If he did not have a strong leave, he would've exchanged and kept the best possible combination of bingo tiles. His willingness to score only 7 points suggests he has a pretty good combination of letters here. In addition, my play of NET is basically the only play that doesn't open up a good chunk of the board. It also limits the FOIN lane to a lane where a bingo must end in S, as opposed to a lane where a bingo can have the S anywhere in the word. Obviously many bingos that contain an S end in it, but this is still a significant change. If Josh has a rack like ADHMINS, he suddenly has very few options.

It is not only Josh's bingos that are a threat here. There is a good chance that Josh has a word such as TO that plays in the same place that I played NET. TO scores 23 points and can very easily be the highest scoring play and the play keeping the best leave if that's what Josh has. Turning TO 10J into TO G5 for 9 is a huge difference when considering the possible outcomes.

The only other option worth considering here is (KAY)LE for 24 points. It is not as defensive, and keeps a slightly worse leave (although L is worse than T, ACIFL is better than ACIFT). KAYLE still blocks bingos that start with S or have the S second in the word, and does not open up much more. KAYLE and NET sim neck and neck above all other options in a sim.

Move	Score	Leave	Win %	Valuation
10H (N)ET	18	ACFIL	63.12	27.7
K7 (KAY)LE	24	ACFIT	62.97	27.7
7F EF(F)	13	ACILT	59.01	19.8
N4 FI(Z)	15	ACELT	58.96	19.6
7E TIF(F)	14	ACEL	57.68	16.8
G6 FE	12	ACILT	57.64	16.8
Exch. F	0	ACEILT	56.89	15.2
Exch. FC	0	AEILT	52.46	6.3

Here is the result of 1000 sims. NET and KAYLE are neck and neck and are far and away better than other candidate plays. I even included some plays with poor equity that bingo as often as I can on this board, such as Exch FC.

Oppo next turn

Candidate	Score	Std. Dev.	Bingo %
N4 FI(Z)	35.8735	20.6731	12.8486
K7 (KAY)LE	29.1574	20.4421	12.3506
7F EF(F)	40.3914	23.4285	19.3227
G6 FE	32.99	22.5878	15.8367
7E TIF(F)	43.6424	24.0317	18.3267
10H (N)ET	22.509	19.8468	10.9562
Exch. F	28.7161	21.4992	12.9482
Exch. FC	28.7161	21.4992	12.9482

The true genius behind NET is revealed. I end up lowering my opponent's average score by 7 compared to KAYLE, and up to 18 compared to other candidate plays!

Relative Leave Value

Leave values exist, and there are solid reasons to study them for cases such as, “Should I play JOT keeping ERNS or JOR keeping ENST” (You should play JOR). It is important to remember, however, that leave values are simply averages of all possible outcomes, and in fact, the game that you are playing is one very specific example, where oftentimes the leave values you learn by writing a program that runs a Monte Carlo simulation are very far off from the truth. In this section of the book I will show several examples of me making a play where, the difference between my (correct) play and the standard play is the fact that my leave is relatively much stronger than the leave values you can learn by studying.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		I	O												S
2		D	A	D										F	E
3			T	O	P						A			E	X
4				C	O	B					L	U	T	Z	
5				E	R						L				
6				M	A	G				R	E				Q
7					G	A	B			O	Y	S			I
8							W	O	O	S		L	I	M	N
9							G	I	E		E			Y	
10									K	A	I	D		C	
11										T	O	D			
12										E	N	E	W		V
13											R				E
14										V	I	S	T	a	S
15															T

Player	Rack	Score
Terry Kang		281
Matthew O'Connor	FHJNPRR	326

Last move: **O6 QJN** +12 281
from rack of: **IQ**

Tiles on rack:

F	H	J	N	P	R	R
---	---	---	---	---	---	---

Unseen tiles:

A	A	A	A	E	E	E	H	I	I	I	L	N
N	N	O	R	T	U	U	U					

In this situation, my legal moves are so bad that I must exchange. The best leave with leave values is HR, and the best leave to increase my chance of bingoing is NR. Instead, I chose to **exchange FHNRR, keeping JP**. Why did I do this? Let's take a deep dive at the state of the board and the score.

This board is very shut down. Terry's best and only realistic chance at winning is to play RENEW, and then eventually draw a bingo ending in E. If she does this and then draws the J, she could very realistically outrun me. In addition, The R on K13 and the E on O13 create a place to play RAPE/RIPE/ROPE for me if I draw any of the 8 remaining AIO that is left in the bag. The J for me can easily turn into 2J JA, but if it does not, it can become all kinds of things after Terry's next play. JA and R?PE K13 will be enough to outrun Terry even if she pulls off RENEW/a bingo.

Closed boards have the effect of drastically reducing the value of certain bingo tiles (AEINORT), and increasing the value of whichever tiles happen to be possible to play in a big way. The S generally ends up being a good tile on closed board too, because, even though it is a bingo tile, it can be used for setups on the triple, or perpendicular plays using a DWS, which are often the best scoring options on a closed board. The E in particular gets a lot worse on a closed board. It is in so many bingos because of suffixes like ED, ER, IES, and IER. However, it is in relatively few short words given how many long words it is in, and thus it is not nearly as good of a tile as it is on an open board. It is still pretty good, however plays that are best solely because of the value of a leave like ER should not be played.

Player	Rack	Score
Terry Kang		129
Matthew O'Connor	?ISTTVZ	145

Last move: **8L LIMN** +18 129
from rack of: IMN

Tiles on rack:
? I S T T V Z

Unseen tiles:
A A A A A A B C C D D E E
E E E E E F F G H H I I I
I I J L M N N N N O O O O
P P Q R R R R S S T T T U
U U U V W X Y

This position occurs earlier in the same game. In this position I play **14J VISTa**, instead of a play like MIZ. There are several reasons for this. First, let's consider the state of the board and the state of the score and its effect on my decision making process. I am up 16 and on turn. This is a good spot to be in, because even if Terry bingos, I am likely to still be able to keep the score close. Let's also consider the board state. The board is pretty open right now. There is a lane for an S with SLEDDER as well as another lane for 7s in the F column, and 4 different floaters to make 8s with. VISTa shuts down the most volatile bingo lane on the board, and partially obstructs two of the lanes for 8s. It is also very likely that my next play will be in the top right of the board, creating a situation where the board is suddenly a lot more closed than it was a few turns ago.

The most important thing about this position, however, is the fact that I am keeping the Z. Closed boards drastically increase the value of the Z. The Z is a very

good tile. You can make lots of 40-60 point plays by taking advantage of the fact that ZA, ZE, and ZO are all words, as well as the many 3 and 4 letter words with the Z. Given the fact that the Z is in relatively few bingos, a closed board has the effect of making the Z even better. Once bingos are far less likely, the Z plays are mostly still there, and they become some of the best scoring options on a board without bingo lanes. Therefore, much of the equity lost by using my blank is made up for by the fact that I am closing the board and increasing the value of my Z, and another large chunk of my lost equity is made up for by the fact that the lane with SLEDDERS can never be opened again.

It must be pointed out, however, that VISTA is not the correct play. VISTO is also a word and does not take the L hook that VISTA does, so therefore, VISTO is a better version of VISTA.

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 final Printabl

Player	Rack	Score
Matthew O'Connor	AEIJJPR	189
Chris Guilbert		162

Last move: G9 UNOILED +10 162
from rack of: DEILOU

Tiles on rack:
A E I I J P R

Unseen tiles:
A A A B C D E E F F G G I
I I K L L M N O O O O O Q
R R R S S S T T T U U U V
W Y Y Z ?

In this position, JEDI is the clear equity play. It also scores 3 more points than PARDI. PARDI, however, is a much better play. On this board, the J is relatively a much better tile due to the fact that this board is very difficult to bingo on. In fact, I am already leaving the tiles necessary to play JIVE for 30 next turn, a play that is unlikely to get blocked. In addition, JEDI sets up a spot for Chris to play ZE for a minimum of 62 points, which would be the easiest way for him to come back on this dead board. Chris having the Z is fairly likely, and after a 6 tile play it might be even more likely than a bingo post JEDI. For these reasons, PARDI is a much better play than JEDI. Note that PARDIE, which is a play along similar lines as pardi, is a much weaker play than PARDI because it opens up a good bingo lane when none currently exist and I will be taking a comfortable lead.

Move	Score	Leave	Win %	Valuation
8F AVO	12	OTTY	47.49	13.3
8G TOYO	14	ATV	46.93	12.0
Exch. AVOTY 0	0	OT	45.37	7.8
8G OATY	14	OTV	44.37	6.1

In this position, TOYO is the best equity play by far. The best simming play, and the play I made is **8F AVO**. This is a very ephemeral version of defense. The board will soon be opened, and in fact, it is likely to be even more open than other boards, because you cannot parallel a play like AVO. However, this ephemeral version of defense works in our favor here. Karl must make a play that opens up the board. If he exchanges, I am now in the same spot as him, but I have succeeded in making him score 0 instead of more than 0. Both of these options work out great for me, making AVO the clear favorite over TOYO, a play that sets up both N and S in the double double lane and allows for numerous parallel plays.



Player	Rack	Score
Matthew O'Connor	ADIORWY	30
Karl Higby		23

Last move: **9H OE +9 23**
from rack of: **EO**

Tiles on rack:

A D I O R W Y

Unseen tiles:

A A A A A A A B B C C D D
D E E E E E E E E E E F
F G G G H H I I I I I I
I J K L L L L M N N N N N
N O O O O O P Q R R R R R
S S S S T T T U U U V W X
Z ? ?

Later in the same game, we reach this position. Karl has just played TAMP and OE, both plays that signal a strong bingo leave. In this position, I make a mistake. I make the play **11J AYWORD**. This play is the equity play by far, and I couldn't fathom anything else being better even though it is a very open play against a very strong leave. In fact, the best simming play if you add bingo leaves for Karl into the sim, is **G6 DI(V)**, a play that blows up my rack and only scores 11 points. This holds true even when you add the 5 points I got for getting AYWORD challenged.

While this may seem spectacular to some, and it included me when I first simmed it, this should be a normal play at the highest level of Scrabble. DIV drastically cuts Karl's bingo chances by shutting down 3 different bingo lanes. It is very likely that after DIV, Karl will make a play like 11J AE for 9 points (11 is greater than 9). I can then make a play like 12J YAW, and open the board in a much safer way that is similar on aggregate score than the immediate AYWORD.

This is another example of ephemeral defense. The board will be opened soon, and Karl will bingo soon. If I can hold him off for one more turn, I can open the board in a much safer manner that gets more 65 point bingos onto the board and less 80-90 point bingos on the triple or even some triple triples.

Move	Score	Leave	Win %	Value
G6 DI(V)	11	AORWY	49.10	10.4
11J AYWORD [and +5]	36	I	46.96	0.9
7H WAY	17	DIOR	44.77	1.6
11J AYWORD	31	I	44.58	0.3

Oppo next turn

Candidate	Score	Std. Dev.	Bingo %
11J AYWORD	70.6419	31.2905	74.3348
7H WAY	49.2156	29.1529	52.8825
G6 DI(V)	24.7932	24.1168	17.5721
11J AYWORD [and +5]	71.6195	31.8038	75.2373

These sim results put Karl on a leave of ENOST. This might be too good of a leave for Karl, because he does not always have an S. Nevertheless, it shows the true power of a play like DIV. DIV is best by a huge margin even if I am 100% sure he will challenge AYWORD. DIV manages to cut Karl to a 17% chance of bingoing even if he kept ENOST! Plays like DIV need to be automatic for any serious Scrabble player, which I was clearly not in 2019.

G6 DI(V)	11	AORWY	53.29	19.3
7H WAY	17	DIOR	52.76	18.1
11J AYWORD [and +5]	36	I	51.71	10.3
11J AYWORD	31	I	49.00	9.6

Oppo next turn

Candidate	Score	Std. Dev.	Bingo %
7H WAY	37.537	25.3419	31.6184
G6 DI(V)	23.8042	19.9069	13.8362
11J AYWORLD	64.6264	29.3439	63.5864
11J AYWORLD [and +5]	64.6264	29.3439	63.5864

This sim puts Karl on ENORT. DIV is still simming best albeit by a much smaller margin. Note that this time, AYWORLD with the nickel is the worst option, worse than WAY. Given that Karl may or may not have an S, but he does have a rack somewhat like the racks I simmed, it is safe to say that the margin by which DIV is the best play over WAY is somewhere in between the .53 percentage points we see from ENORT and the 4.33 percentage points we saw from ENOST

The image shows a 15x15 Scrabble board simulation. The board is color-coded with various colored squares (red, blue, pink, purple, grey). The word "PAV" is placed horizontally in row 8, columns 6-8. A double arrow points to the empty space at row 13, column 11. Below the board is a rack of letters: A, A, A, E, E, L, T.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Red			Blue				Red				Blue			Red
2		Pink				Purple				Purple				Pink	
3			Pink				Blue		Blue				Pink		
4	Blue			Pink				Blue				Pink			Blue
5					Pink						Pink				
6		Purple				Purple				Purple				Purple	
7			Blue				Blue		Blue				Blue		
8	Red			Blue			P ₃	A ₁	V ₄			Blue			Red
9			Blue				Blue		Blue				Blue		
10		Purple				Purple				Purple				Purple	
11					Pink						Pink				
12	Blue			Pink				Blue				Pink			Blue
13			Pink				Blue		Blue			↓	Pink		
14		Pink				Purple				Purple				Pink	
15	Red			Blue				Red				Blue			Red

Rack: A₁ A₁ A₁ E₁ E₁ L₁ T₁

Move	Score	Leave	Win %	Valuation
9G AA	10	AEELT	43.77	20.4
J5 TALEAE	19	A	43.76	20.9
J5 ALAE	15	AET	42.38	17.4

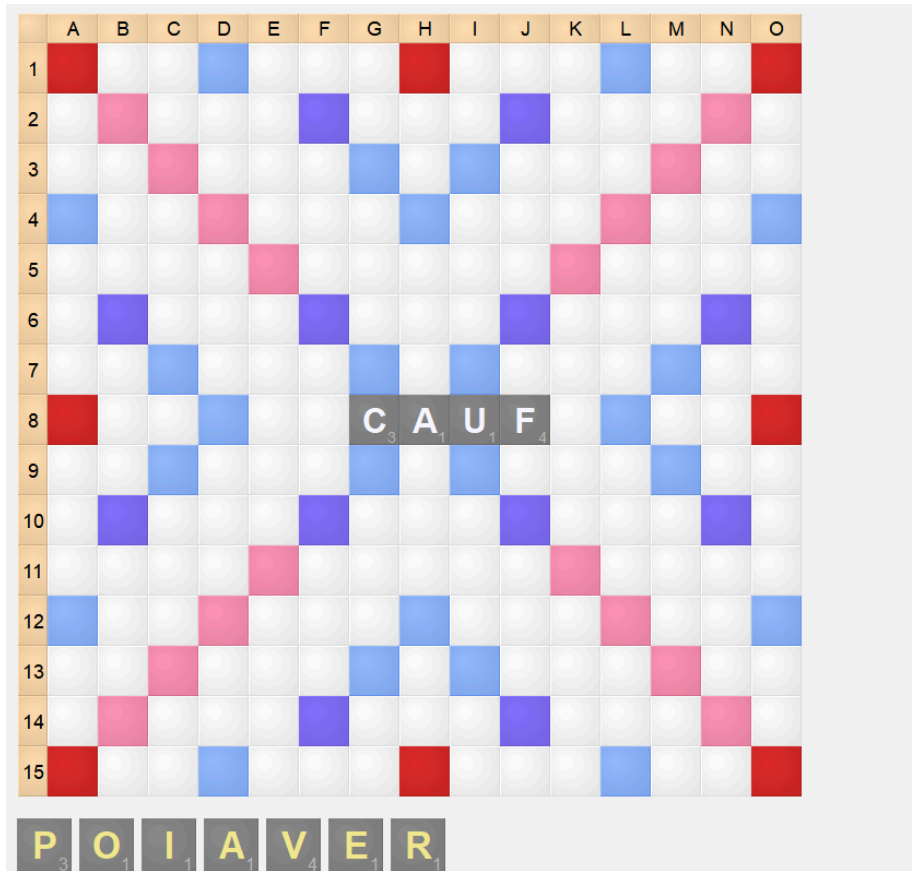
Simulation: 2797 iterations

4 plies oppos pass

Details

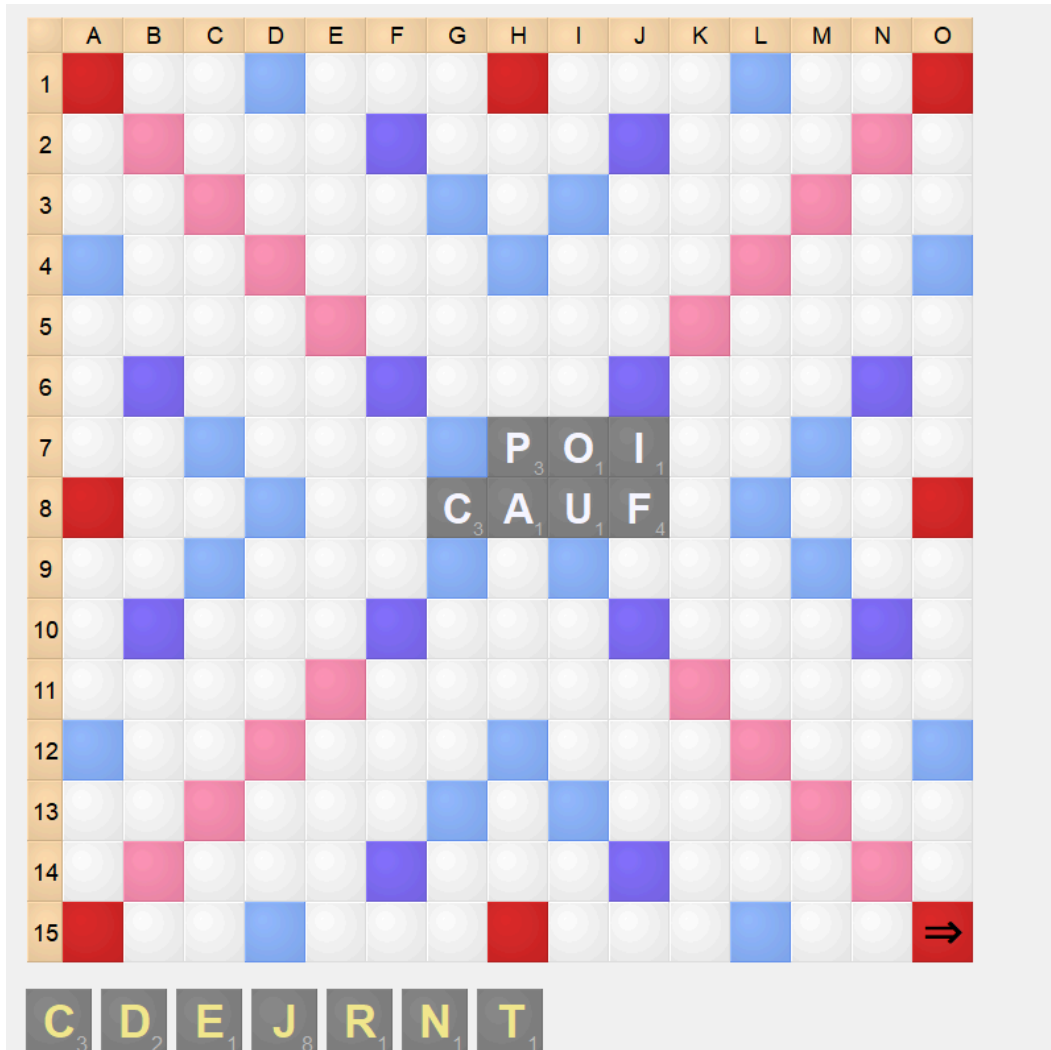
This position was reached against Ben Schoenbrun in the fourth of July tournament in 2024, in the penultimate round. In this position, AA sims nearly identically to TALEAE, and far ahead of ALAE. This is another position that is emblematic of ephemeral defense. My leave of AEELT is not great for the point sacrifice I was making and it is possible that I will end up in vowel trouble after scoring only 10 points. Despite this, it sims neck and neck with TALEAE and ahead of ALAE. Why is this? This is another example of ephemeral defense. Ben's options are severely restricted after AA, especially if he lacks an E or a good play with the S such as SUQ/PAVS. If he cannot get a good score down, I have succeeded in lowering his score, and it is also likely that he will at least somewhat reopen the board for my letters. It is also possible that I draw a bingo hooking PAV, as the board as it is set up is friendlier for my rack (which contains an E and is somewhat bingo prone) than his range after playing PAV.

Ben is not very likely to have kept an E when he played PAV. Any double E leave would almost certainly have become PAVE or VAPE, and many combos he could've kept such as ER, ED, or EN turn into much higher scoring words (VAPER, VAPED and PAVEN). This is important to keep in mind when making a play like this. Ben's options are on average that much more limited since he is not likely to have kept an E, and he is only drawing 3 tiles in a pool of 10 Es since I have two of them myself.



Move	Score	Leave	Win %	Valuation
7H POI	18	AERV	45.46	26.8
9I PAVIOR	27	E	43.33	21.8

This position was reached at the 2023 Word Cup against Adam Logan. It is available on Youtube [here](#). In this position, POI is a much better play than PAVIOR, despite a large equity sacrifice. This is because of the defensive value and the fact that AERV is probably a better leave than one's gut says.



Move	Score	Leave	Win %	Valuation
I6 J(OU)R	12	CDENT	52.93	25.7
6J DRENT	23	CJ	52.91	25.4
Exch. JC	0	DENRT	49.65	18.0
Exch. JD	0	CENRT	48.82	16.2
I6 J(OU)NCED	18	RT	48.81	16.5

On Adam's next turn, he is perfectly justified in only scoring 12 points due to the same principle. Note that DRENT sims better than all other options due to the fact that it does not take an S and takes out all scoring options despite the poor CJ leave. Note also that J(OU)NCED, the equity play, sims 4 percentage points behind JOUR and even sims behind exchanging.



Move	Score	Leave	Win %	Valuation
8A BLEN(T)	24	ADN	53.24	30.6
J5 NA(IF)	20	BDELN	52.54	29.2

Several turns later against Adam, we see this position. NAIF is an interesting option despite the consonant heavy leave and the fact that it scores less than BLENT. I chose BLENT in game because I did not see NAIF. It is possible that NAIF is correct.

One thing to note in this position is that Adam is not super likely to have a strong leave despite his recent two tile play of WO. This is because CENTRED means that Adam did not keep an S, due to the fact that SCENTED/JOURS would've been available. WO can be the best play with a wide variety of leaves, due to the lack of scoring options on the board. For these reasons, I still believe that BLENT is the best play, but NAIF is an interesting option that must be considered.



Player	Rack	Score
Richard Buck		55
Matthew O'Connor	?CDFRTW	44

Last move: K9 NOX +33 55
from rack of: NOX

Tiles on rack:
? C D F R T W

Unseen tiles:

A	A	A	A	A	A	A	A	B	B	C	D	D
D	E	E	E	E	E	E	E	E	E	E	E	E
F	G	G	H	H	I	I	I	I	I	I	I	I
K	L	L	L	L	M	M	N	N	N	N	N	O
O	O	O	O	O	O	P	P	Q	R	R	R	R
R	S	S	S	T	T	T	T	T	U	U	U	U
V	V	W	Y	Y	?							

In this position, DZO is the best play. It only scores 13, and keeps a horrendous leave relative to exchanging. However, it is correct. This is because the most dangerous place on the board is the L column, for good scoring parallel plays. DZO limits a square on the board that could be ALOS into one that can only be S. This drastically reduces Richard's options. In addition, a floating A, E, O, or R for me leads to WARCRAFT, CROWFEET, or CROWFOOT.

Move	Score	Leave	Win %	Valuation
10I D(ZO)	13	CFRTW?	52.94	36.2
Exch. DFTW	0	CR?	51.65	33.5
I10 DoWF	27	CRT	51.30	32.7
H6 DR(I)FT	9	CW?	50.81	31.8

Note also that DoWF is a lot better than it looks. DoWF is an ok play because of the poor synergistic value of the blank and the CRT leave of DoWF making it more reasonable to shed the blank for a low score in this situation.

Oppo next turn

Candidate	Score	Std. Dev.	Bingo %
Exch. DFTW	37.0991	21.2383	18.0283
H6 DR(I)FT	38.1879	22.0446	17.4837
I10 DoWF	34.1345	20.7745	15.2505
10I D(ZO)	29.6857	21.3285	14.3791

This sim illustrates why DZO is the best play

Absolute Defense

Absolute defense occurs when you shut down the board for good. This appears in many situations where there is only one bingo line left on the board and you shut it down. In these cases, it often does not matter what the equity is of the play. If the only way to lose is your opponent's bingo, you can expend your S and even your blank if it means making it impossible for your opponent to bingo. Since many of these cases are trivial, I will not be including them in this book. I will be including slightly less trivial cases instead.



Player	Rack	Score
Matthew O'Connor	?HOSSTV	336
Terry Kang		300

Last move: 13L EW +25 300
from rack of: EW

Tiles on rack:
? H O S S T V

Unseen tiles:
A A A B E E I I L N N N R
R T T ?

In this position, there is only one bingo lane on the board. However, I cannot make a low scoring play like O7 S(O)V for 6. This is because Terry can play something with COOMB for 32, and with some luck, she can make one more high scoring play and steal the game. I must attempt to block the O column and score enough to outrun Terry's high scoring bingos.

I ended up playing **N6 SO(V)S**. This play uses up both of my esses for the relatively paltry score of 21. In the end it does not matter. I have blocked the last available bingo lane on the board and scored enough to outscore plays making

COOMB. In addition I still have my blank and can therefore snuff any of Terry's setups. I will win this game, as there is no way for Terry to fork the board, and no way for her to hope to outrun me once I have a 57 point lead.

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1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	A	M										
2																R	E										
3																D	A	E									
4																P	O	I									
5																I	O	S									
6																D		E									
7																O	J	O	L	T	E	F	S				
8																D	U	C	A	T	B	O	O	A	Y		
9																U	R	N	E	C	K	W	I	L	E	D	
10																I	R	E	S	H	O	N	E	A	I	F	
11																T				T	I	N	Y	Q	X	I	
12																				R	M	A	W	S	I	T	A
13																				P						E	V
14																										N	E
15																										A	L

Player	Rack	Score
Noah Slatkoff		304
Matthew O'Connor	?ELRUV	344

Last move: F9 CHIRP +12 304
from rack of: ?GNOPRT

Notes:

- missed ODOUR

Tiles on rack:

? E L R U V

Unseen tiles, including 1 unknown tile from current player's rack:

A B E G G G H I N N O R T
U Z ?

In this position, sLURVE is a perfectly reasonable option, even though it uses the blank for 28 points. I am building up a big enough lead that it will be difficult for Noah to come back without a bingo or a large Z play, which is fairly unlikely after a play like CHIRP. In addition, Noah cannot make an easy setup, as all setups on this board can be sniffed out by me. I also don't have a way to block CHIRP without expending the blank or opening something else up, making blank burning plays relatively better options. In the real game, I played LURVEs, a much weaker play because it keeps the AL line open

Potential Defense



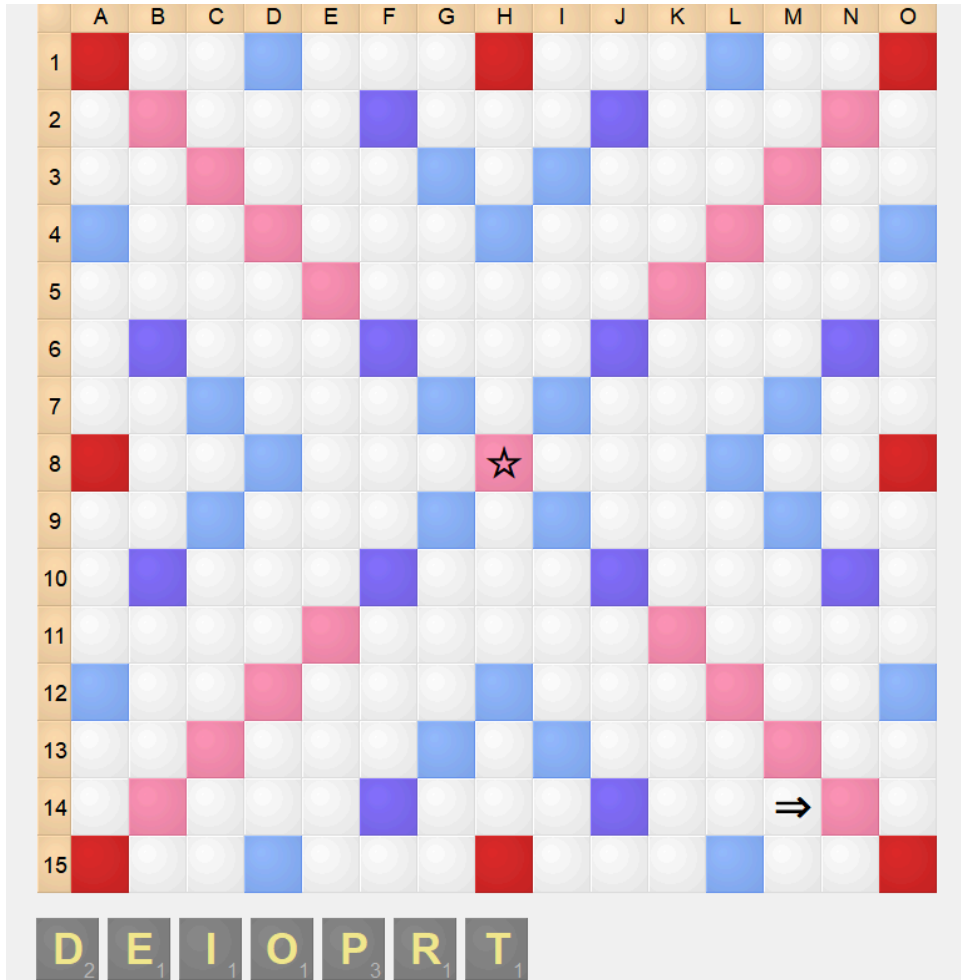
Player	Rack	Score
Adam Logan		180
Matthew O'Connor	AELoSST	194

Last move: **8M OYE** +20 180
 from rack of: EOY

Tiles on rack:
 A E L O S S T

Unseen tiles:
 A A A A A A B B D D E E E
 E E E E F G G I I I I I J
 K L M M N N N O O O P R R
 S T T T U U U V V W X Z ?

In this position, there are no bingos. The best equity plays are all one tile fishes. Instead, I play **13L OLEA**. This play somewhat blows up the rack, and it in fact opens a bingo lane instead of closing one. It is still the best play, however, and it is a defensive play if you consider the medium and long term. Adam is very likely to play something parallel to OLEA. While he is likely to get a good score, it is somewhat hard to score 50 there, and I am likely to get a good play back on the triple. This creates a board that is much harder for Adam to work with at his deficit than the one that exists right now.



This final position illustrates how you can consider making sacrifices on your opening rack in the name of defense, even when you are about to open with a bingo. This position was reached against Dave Wiegand in New Orleans in 2024. I have 4 choices of bingos, two of which (PERIDOT and PROTEID) make it possible to double the P and score the maximum possible score of 76. Both of these plays have drawbacks. PERIDOT is very easy to make parallel plays off of and takes an E hook in the double double lane. PROTEID is also somewhat easy to make parallel plays with and sets up the E next to the double letter score for ZE plays. It also takes a back E hook for PROTEIDE in the double double lane. Ultimately, I played DIOPTRE, a play that sacrificed 2 points but in exchange was much harder to hook and make parallel play off of. A sim finds PROTEID and DIOPTRE nearly identical.

Recursion

Recursion is an important concept in Scrabble. For the purposes of this book, I will be describing recursion as something that you must consider the effects of for multiple turns down the road, as opposed to just the current turn. The first position we will consider will take place later in the same game against Adam.



Player	Rack	Score
Adam Logan		369
Matthew O'Connor	FILNORS	337

Last move: **Exchange AAEEUU +0 369**
from rack of: AAEEUU

Tiles on rack:

F	I	L	N	O	R	S
---	---	---	---	---	---	---

Unseen tiles:

A	A	D	E	E	E	E	J	O	P	R	U	U
X												

In this position, the equity play, as well as the first play that comes to most people's minds in this situation, is 3I FLO(G)S. This play scores a lot of points, and according to Quackle, is roughly 60% to win. This play would be the best except for the fact that there is a recursive fish available.

I end up playing **16 L(OWE)** for 7 points. This play works because I am fishing for FORENSIC. The C is very difficult for Adam to block without opening something else, and if he does play something like PEC for 7, he opens up other bingo lanes but also gives me the ability to play FRO(G)S and take the lead. Therefore, Adam must make a scoring play elsewhere on the board. Because of the difficulty in blocking the C in an effective way, I will likely have multiple attempts at fishing for an E. Adam has just exchanged 6, meaning he likely exchanged a lot of vowels, because there are places to score decently with consonants that are better than exchanging. After an immediate FLOGS, I am likely to have a rack riddled with vowels against Adam's J and X. Adam is unlikely to have exchanged the J or X because there are good places for them on this board.

In the actual game, I ended up drawing the J after LOWE, playing JIRD, and then going on to win the game. This illustrates another benefit of a play like LOWE. If I induce a low enough scoring play, I still have several other outs to win the game. A simple mathematical exercise that is left to the reader shows that LOWE is a much better play than FLOGS.

There is an interesting wrinkle to this position. Adam has just exchanged 6 with 7 in the bag, meaning he knows I have 7 out of a pool of 8 tiles. Adam can most likely correctly put me on fishing for FORENSIC because of this. However, this does not matter as much as it appears. Low scoring blocks lead to me playing FROGS and being in a similar position to where I would be if I played FROGS immediately. EXEC sets up INSOFAR, and also is not bulletproof against FROGS. Some blocks even set up FRIPONS.

Setups

A setup is, of course, a play that sets up another tile. It is important to note that this tile being set up does not have to be one that is on your rack. Sometimes, in a desperate situation, your best play can be to set up a tile that you do not currently have while simultaneously fishing for that tile, in the hopes to get an unblockable play, or just one that is too expensive for your opponent to block. Most of the time, however, a setup is a play that sets up a tile that is on your rack.

In reality, most plays have some elements of a setup to them. Some of them are direct, like setting up a hook on your rack, and some are more subtle, like setting up a spot for your opponent that will later open up something for you. The most direct setups are often quite flashy, and in fact, Scrabble's GOAT, Nigel Richards, is most well known for making plays like these.

Setups must be evaluated by calculating the relative value they bring against the sacrifice you need to make to make it. An equity play that is also a setup is (obviously) the best play without some other factor in play like needing to block the only remaining bingo lane or worrying that your opponent has the same tile. One mistake a lot of people make when calculating the value of a setup is they simply calculate the score of their next play. You should actually be calculating the amount your next play scores minus what your next play would score if you made the non setup play. This is the potential benefit that the setup can bring. Another mistake people make is forgetting to account for the sacrifice your opponent has to make to block the setup if they choose to block it. Denying your opponent points is just as important as scoring them, so factoring in the sacrifice your opponent will have to make to block a setup is part of the value of a setup.

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															Z
2												D		S	O
3										P		O		E	R
4										O		U		X	I
5								B	L	O	T	C	H	Y	
6										J		I			
7								G		A	I	N			
8								V	A	W		N	E		
9								W	O	O		D		H	
10										F	R	I	G	O	T
11										A		I		P	
12												A	D		L
13												R	E		I
14												I	N		N
15												A			T

Player	Rack	Score
Matthew O'Connor	EFGILNT	227
Matthew Tunnicliffe		191

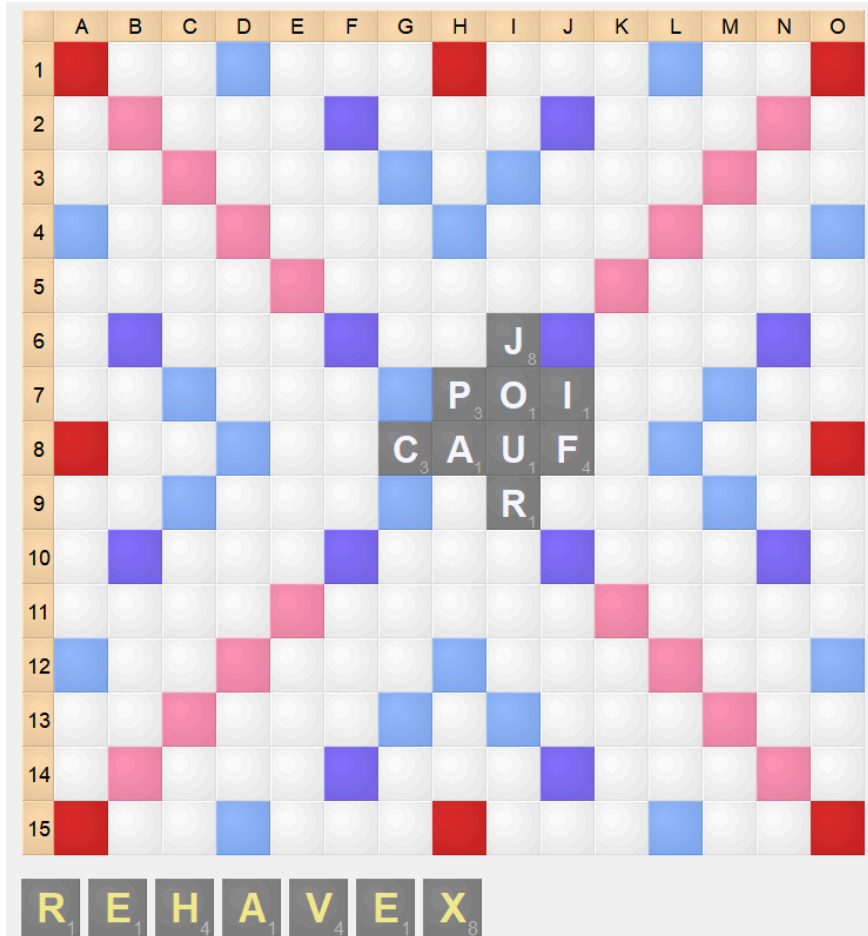
Last move: Exchange UUU +0 191
 from rack of: UUU

Tiles on rack:
 E F G I L N T

Unseen tiles:
 A A A A B C D E E E E E E
 E E I K L M M N O Q R R R
 S S T T U U U V Y ? ?

In this position, given the score, you might be wondering why I would open up another bingo lane. The key here is that Matthew Tunnicliffe has just exchanged 6 (the annotation is wrong). In this situation, my actual rack is much stronger than his leave, and if I play ORF, I can bingo in that spot more than half the time (I bingo with AEIRS?). This would nearly put the game away and is a worthwhile risk to take because of the drastically higher likelihood of me bingoing there than him given his exchange. In addition, Matthew Tunnicliffe will find another way to open the board if I do not do so myself, making it that much better of an idea that I do so “on my own terms”

There is no way to get an accurate sim due to the nature of Matthew Tunnicliffe’s not so random rack and the true % chance of ORF getting blocked/used. Trust me that you will win more tournaments if you make plays like ORF.



Move	Score	Leave	Win %	Valuation
9E REH	21	AEVX	49.68	30.4
9F EH	20	AERVX	47.68	26.1
9F AH	20	EERVX	46.50	23.7
G8 (C)HAVE	17	ERX	45.88	22.0
G8 (C)HEVRE	19	AX	44.88	20.0

There is a wrinkle in this position here, taken from the same game against Adam Logan from word cup 2023. The best plays (AH, EH, and REH) are all setups for my X. Which is the best one? REH is by far the best play. The reason for this is, somewhat counterintuitively, that REH opens up even more stuff. REH opens up the triple, and allowed for some 7 letter non bingo double doubles that are easier to have than the bingo double doubles that AH and EH open up. This ends up being good for me. The triple is not too dangerous even though the Z is unseen, but if Adam uses the triple, he is not going to obstruct my X spot, as he must hook with AR, ER, OR, or UR, all of which take a back E. In addition, it is harder to play on row 10 after REH due to the R

only taking E as a hook. This causes REH to be by far the best play despite a moderate equity sacrifice.

Synergy

Synergy is the way that tiles interact with each other. In the strictest sense, it is a measure of how much you would rather have two tiles together rather than apart. The most obvious example of tiles with good synergy are the Q and the U. Since the vast majority of Q words contain a U, the U takes the Q from a bad tile to a combination that can score a lot of points. The most well known example of tiles with bad synergy are the U and W. There are not a lot of words with both of those letters, so it can be hard to work with. There are many counterintuitive examples of bad synergy, however. ?? and ?S both have horrible synergy. This is because it is impossible to bingo 120% of the time, and so both of those combinations act as overkill. What this means is that if you have ?? and no playable bingos, it is ok to play off your second blank for as little as 13 extra points, and if you have ?S, it is ok to play your S off for as little as 6 or 7 extra points, when the normal value of these tiles are 24 and 8, respectively.



Player	Rack	Score
Matthew O'Connor	EFFGHJQ	26
Paula Catanese		20

Last move: **G5 MUD +20 20**
from rack of: **DMU**

Tiles on rack:

E	F	F	G	H	J	Q
---	---	---	---	---	---	---

Unseen tiles:

A	A	A	A	A	A	A	A	A	B	B	C	C	
D	D	D	E	E	E	E	E	E	E	E	E	E	
E	G	H	I	I	I	I	I	I	I	I	K	L	
L	L	L	M	N	N	N	N	N	N	N	O	O	O
O	O	O	O	P	P	R	R	R	R	R	R	S	S
S	S	T	T	T	T	T	T	T	U	U	U	V	W
W	X	Y	Y	Z	?	?							

In this position, FEG is the standout play. It might be a little scary to keep FHJQ, but FHQ actually has good synergy. This might be counterintuitive, but FHQ is 3 of the 4 tiles necessary to play FIQH, with the fourth tile required being the most common one. In addition, After I play FEG, I am setting up a spot to play FIQH for 48. This causes FEG to be a much better play than FEH.

Move	Score	Leave	Win %	Valuation
I7 FEG	26	FHJQ	52.63	18.8
I7 FEH	30	FGJQ	48.02	8.8
Exch. FEGFQH	0	J	45.76	3.7
Exch. FFGJQ	0	EH	44.92	1.6
6F J(UG)	27	EFFGHQ	44.43	0.8
Exch. FFGHJQ	0	E	43.02	-2.6

Sim results. FEG is significantly better than all other options because it leaves 3 out of the 4 tiles for FIQH. Note that exchanging is a very poor choice here, because the board is not conducive to the bingos you would be looking to draw by exchanging. This makes the bingo unfriendly leaves that FEG and FEH keep relatively less of a big deal, and makes FEG and FEH much better choices than all other options, especially FEG.

Note also that exchange keeping J is the best of the exchanges that I simmed and exchange keeping E is the worst of the exchanges that I simmed. This is because of the existence of UG on the board taking a front J on the triple letter score, and the fact that this board is bad for bingos makes E the worst choice.



Player	Rack	Score
Matthew O'Connor	FHIIKQ	79
Paula Catanese		62

Last move: 10J HE +28 62
from rack of: EH

Tiles on rack:
F H I I I K Q

Unseen tiles:

A	A	A	A	A	A	A	A	A	B	B	C	C
D	D	D	E	E	E	E	E	E	E	E	G	I
I	I	I	I	L	L	L	L	M	N	N	N	N
N	N	O	O	O	O	O	O	O	P	P	R	R
R	R	R	S	S	S	S	T	T	T	T	T	T
U	U	U	V	W	W	X	Y	Y	?	?		

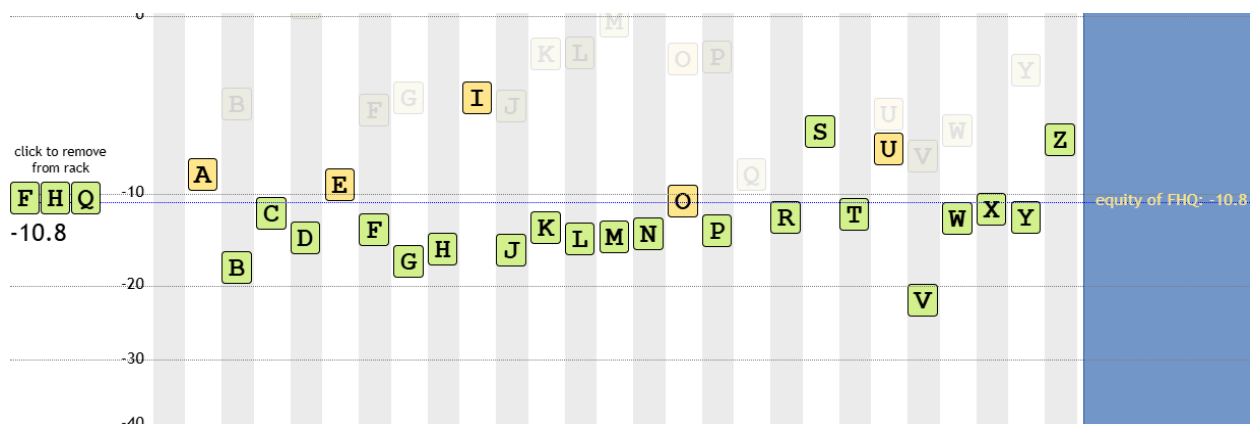
This position is taken from the same game two turns later. I still have FIQH on my rack, because my attempts to set it up have been blocked. In this position, I made the equity play of KIF. In reality, KI is a better play. KI leaves FIQH on my rack in case Paula plays through the F I am slotting myself. In addition, KI is harder for Paula to bingo after. There are no words on the board that take an S in a way that sets up a bingo lane if I play KI. For those reasons, KI is a better play, partially due to the defensive merits and partially due to keeping FIQH on my rack

Move	Score	Leave	Win %	Valuation
11K KI	26	FHIIQ	63.37	29.8
11K KIF	34	HIIQ	62.11	27.5
11K KHI	34	FIIQ	61.38	25.4
Exch. FIIIQ	0	HK	53.62	9.3
Exch. FHIIKQ	0	H	52.80	7.8
Exch. FHIIKQ	0		51.97	6.3
Exch. KII	0	FHIQ	51.08	4.5
Exch. FHIIKQ	0	I	50.45	3.2

Oppo next turn

Candidate	Score	Std. Dev.	Bingo %
11K KIF	29.1605	20.5273	13.5406
11K KHI	30.4664	20.0564	13.6409
11K KI	23.8626	13.4796	4.71414

Sim results. My choice of KIF is inferior to KI because KI keeps the word FIQH on my rack and doesn't set up bingos.



This diagram is a good example of synergy at work. If you are already keeping FQH, it is better to draw an I than an S or even a U, the tile that generally works best with the Q. The existence of the word FIQH is more important here than the general benefits of drawing an S.

Closed Boards

Closed boards present a unique challenge in Scrabble. On a closed board, leave values are drastically different. Letters that are more suited towards bingos such as the E are drastically reduced in value (in fact the E is also in relatively less short words than long words, making it even worse). The value of high point letters such as JXZ (the Q's value depends on availability of QI) and letters such as FHWY, go up immensely. If the board is not immediately openable, a leave like EFHWY is preferable to a leave like EINRT, due to the fact that there will still be available scoring spots for 3 letter words such as FEH and WHY, which benefits the holder of EFHWY much more than it benefits the holder of EINRT. The value of the S depends strongly on the availability of S hooks on the board and the ability for the S holder to make a setup with it in a triple lane. If the S is the case S, its value goes up immensely due to the ability to make a setup that can't be used by the opponent

One major principle of closed boards is trying to prepare for the eventual opening of the board. If you are ahead, you will most likely be preparing for your opponent to open the board, as the status quo of a closed board with few opportunities benefits you. Keeping bingo tiles becomes more important if the board can be opened in a way where not every bingo lane can be shut down. This is because the game will once again be about binging.

On the other hand, if you are behind, you are more likely to be the one opening the board yourself. This is because the status quo of a closed board benefits your

opponent. The extreme example of this involves the board running out of plays that don't open the board. In this case, if you and your opponent both repeatedly pass, you will lose a 6 pass game. Therefore, it is imperative that you open the board at the right moment. It is often best to attempt to groom your rack a little bit before opening, so that you can attempt to bingo right away once you open the board, in order to prevent the possibility that several moves by your opponent can return the board to being closed without you getting the chance to bingo.

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Player: Dennis Ikekeregor (246), Matthew O'Connor (263). Rack: BCKNOOS. Last move: 13E RHO +26 246 from rack of: HOR. Tiles on rack: B C K N O O S. Unseen tiles: A A A D E E G G I I I I I L M N O O P Q R R T T T U V W X Y ? ?

On this board, 14B NO is a perfectly good play. This is due to the fact that without any place to bingo, the fact that BCKOS doesn't often bingo matters a bit less. In addition, the K can be used for KOI, a play that, if I am sufficiently in the lead, makes it much harder for Dennis to open the board in any way. I also keep the CO combination to play COY, blocking the last available bingo lane and forcing Dennis to open the board in a much more volatile play such as a 2 letter word using the O in COY, which would set up my S on the triple. For all of these reasons, BCKOS is actually a very good letter combo to keep on this board.

Move	Score	Leave	Win %	Valuation
B14 NO	15	BCKOS	65.54	24.5
M7 COOK(Y)	18	BNS	64.75	23.1
10M KOB	20	CNOS	64.50	22.4
M7 CONK(Y)	18	BOS	64.05	22.4
M7 BOOK(Y)	18	CNS	63.98	23.8

Sim results. NO ends up simming best. Sim results can be especially wonky on closed boards, because it is relatively unlikely on a closed board that the equity play is the best play. For instance, if Dennis decided to immediately open the board after NO with something like ELUTED (Dennis is behind and must open the board relatively soon), it would end up being quite a bit worse than the sim suggests, because I would not have the bingo tiles to hit that spot. Despite this, I still believe NO is correct here.

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 final Printable

The screenshot shows a Scrabble board with the following words: K H O R (row 1, L-M-N-O), L (row 2, J), A P E (row 2, N-O), Q I (row 3, I-J), I D (row 3, L-M), M U G (row 4, G-H-I), W E (row 4, L-M), E A (row 5, G-H), O I S (row 5, I-J-K), T I F F S (row 6, G-H-I-J-K), A T (row 7, I-J), V I G A (row 8, G-H-I-J). The rack contains D, E, I, L, N, T, Z. Unseen tiles include A, B, C, D, E, G, H, I, J, L, M, N, O, P, R, S, T, U, V, W, X, Y, and two question marks.

Player	Rack	Score
Dean Saldanha		126
Matthew O'Connor	DEILNTZ	136

Last move: 2M APE +20 126
from rack of: EP

Tiles on rack:
D E I L N T Z

Unseen tiles:
A A A A A B B C C D D E E
E E E E E E G H I I I J L
L M N N N N N O O O O O
P R R R R R S S T T T U U
U V W X Y Y ? ?

In this position, I have the Z. The Z is normally a very good tile on a closed board, but here there are very few options for the Z. In addition, the 6 tiles that I have that are not the Z are very good letters for bingos, and, with my small but meaningful lead, Dean will soon be forced to open the board. Many of the board opening plays here open up bingos in a way that my rack is suited for, because they either open up a lane for me to play 8s, or they set up something that I can hook. In addition, I have a small chance of drawing TINGLED or INDWELT on row 9 immediately, or INTITLED to the I in VIGA. For these reasons, it is ok to shed the Z for 12 points here. Note that REZ is better than ZEA because it blocks bingos and 8 letter triple words that play through RE.

Move	Score	Leave	Win %	Valuation
O1 (RE)Z	12	DEILNT	54.28	17.1
4L (WE)LD	10	EINTZ	53.79	15.7
9H DINT	20	ELZ	52.48	14.1
9H TIND	19	ELZ	52.11	13.3
5G Z(EA)	12	DEILNT	50.49	9.9

This sim was made with Dean's rack being EINST half the time and ENORT half the time. This is the best approximation I can make here for an accurate sim. It is incredibly difficult to make a good sim on a closed board. REZ could be worse than the actual sim because these leaves underestimate Dean's chance of hitting the triple with an 8 letter word starting with REZ.

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 final Printable

Player	Rack	Score
Dean Saldanha		126
Matthew O'Connor	DEILNRT	148

Last move: **Exchange III** +0 126
from rack of: III

Tiles on rack:
D E I L N R T

Unseen tiles:
A A A A A B B C C D D E E
E E E E E G H I I I J L
L M N N N N N O O O O O
P R R R R S S T T T U U U
V W X Y Y ? ?

One turn later in the same game. Dean has just exchanged, and I have a rack that has unplayable bingos. In this case, it is now better to fish off the D. If I fish off the D, I can draw bingos with almost half of the bag. (AEGIU?). If Dean chooses now as the time to open the board, I am even likelier to bingo

Move	Score	Leave	Win %	Valuation
9H TIN	17	DELR	63.85	24.6
9H DIN	19	ELRT	63.62	23.1
9H TIND	19	ELR	62.77	22.4
9H DINT	20	ELR	62.52	20.7
4L (WE)N	6	DEILRT	59.79	14.4
J6 (FAA)N	7	DEILRT	59.32	13.2
4L (WE)D	7	EILNRT	59.27	14.0
9H TINDER	22	L	56.95	10.4

This sim was done with Dean having half ENRT and half ENST. I still do not recommend TIN. This is because Bogowin is inaccurate here and the smaller lead is more meaningful after the more closed board after WED or WEN.

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 final Printable

Player	Rack	Score
Dean Saldanha		132
Matthew O'Connor	EILNRT	155

Last move: **5F PLEA** +6 132
from rack of: LP

Tiles on rack:
E I L N N R T

Unseen tiles:
A A A A A B B C C D D E E
E E E E E E G H I I I J L
M N N N N O O O O O O R R
R R S S T T T U U U V W X
Y Y ? ?

One turn later in the same game. In this position, it is important to note that while FAAN opens up the board, it does not open up the board that much. It does not take an S, and so the only way to play off of FAAN would involve a parallel play. Many of these parallel plays do not score very much and set up a bingo for me. It is not super likely that Dean bingos there because it would have to start with a vowel, but if he does, there is a good chance I get a triple triple back, putting the game nearly out of reach, and a very high chance I at least get a bingo there. This is a good example of the fact that opening plays have different degrees of opening the board. In this case, I am ahead and I am the one opening the board, but it is OK because it does not open up the board drastically, and it fishes off the tile that gives me the best 6 tile leave. In addition, Dean has given himself a scoring spot with PLEA that could nearly tie the game if I don't attempt to do something, so it is best to do something like FAAN here.

Move	Score	Leave	Win %	Valuation
9I INN	15	ELRT	62.63	17.3
J6 (FAA)N	7	EILNRT	62.55	17.8
9H TIN	17	ELNR	61.12	15.1

This sim gave dean half ENRST and half DENRT. Trust me, FAAN is a better play.



In this position, I am down 51-57 against Adam Logan. This might not seem like much, but it is enough that I am nearly certain to lose in a 6 pass game. It is harder than it looks to open the board, or even to make a legal play at all. I would need an S or a blank. I can stave off a 6 pass by drawing an A or an O to play ANNO or ANNA, but I would still need to do something after that to get back into the game. In this position, it is better to exchange 5 keeping RT here than it is to exchange 4 keeping NRT, this is because none of the tiles on my rack make legal moves, and therefore, I have to

exchange an extra tile to be conscious of the looming 6 pass. In fact, although I chose to exchange 5 keeping RT, it might be better to exchange 5 keeping DR, because DR is one E away from me having FAYED as a potential way to avoid losing a 6 pass. It is important to note that even if there is only a 2% chance of this game going to 6 pass, that is a huge amount because I am virtually guaranteed to lose a 6 pass, and 2% is a big difference in general when comparing two Scrabble moves to each other.

There is no way to get an accurate sim here, so I will not bother.

Miscellany

These positions are either good for several different reasons, or are things I found interesting enough to include here that didn't fit cleanly into a category.

Back Forward start 1 2 3 4 5 6 7 8 **9** 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 final Printable

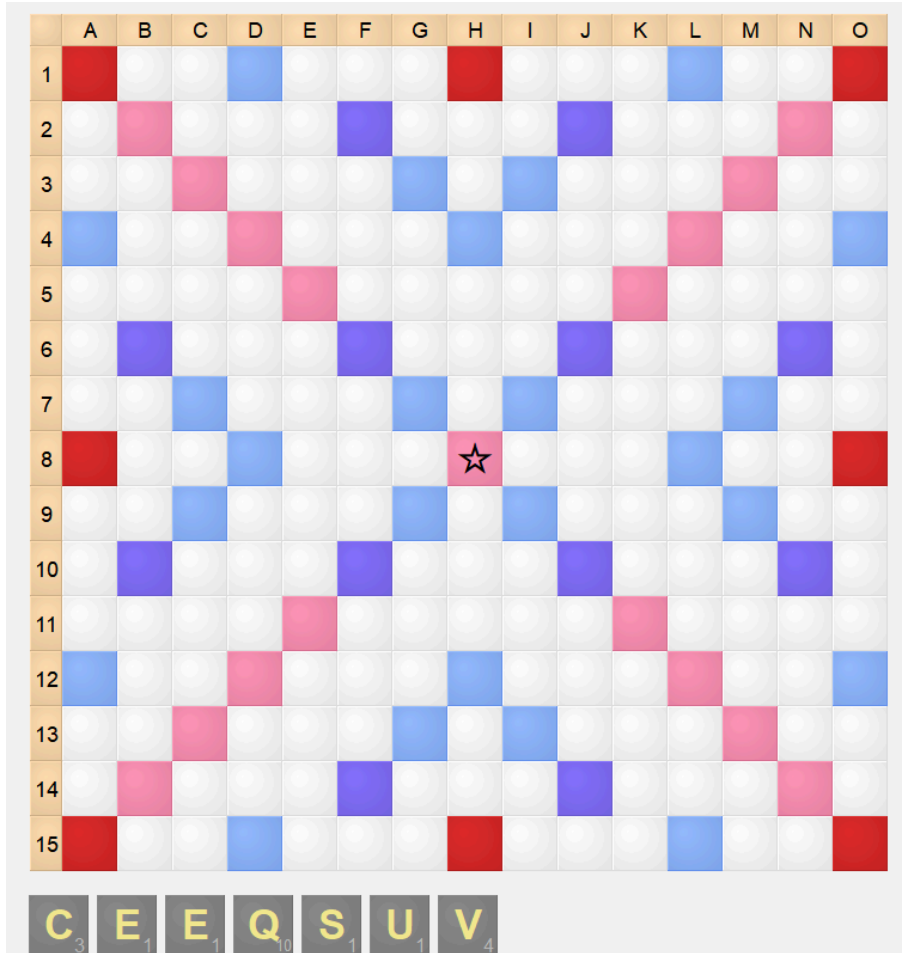
Player	Rack	Score
Dennis Ikekeregogor		156
Matthew O'Connor	EEEEOSU	168

Last move: **15D TEACH** +48 156
from rack of: **ACEHT**

Tiles on rack:
E E E O O S U

Unseen tiles:
A A A A B B C D D D E E E
G G G H I I I I I K L L
L M M N N N O O O O P P Q
R R R R S T T T U U V V W
X Y Y ? ?

OUTSEE is simply the equity play here, despite using up my only S. It also closes more than it opens. It only scores 14, but that is 14 more than the 0 I would score by exchanging, and the leave after EURO isn't good enough to make up for scoring only 8 points, which makes OUTSEE the clear favorite, despite shedding my only S, keeping two vowels, scoring 14, and opening up a triple triple. Don't be scared to make plays like this. They can be correct.



EVE, SUQ, exchange keeping CES, and CUVEE all sim close, despite being drastically different plays. CUVEE uses up my only U and keeps my Q, and SUQ uses up the S but scores less than the best possible play that keeps it. The fact that both of those exist together and other plays are also similar in value is astounding to me.

Move	Score	Leave	Win %	Valuation
8G SUQ	24	CEEV	53.56	27.6
8D CUVEE	26	QS	53.35	27.0
8H EQUES	30	CV	52.41	24.9
8H EVE	12	CQSU	51.85	23.5
Exch. EQUV	0	CES	51.77	23.1

Ultimately I chose CUVEE under the logic that, with the U sandwiched with the C and Q, it was actually relatively difficult to obstruct, and I would get to play the Q more often than I initially thought

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 final Printable

Player	Rack	Score
Joshua Castellano		157
Matthew O'Connor	AAEJRTT	133

Last move: E11 DUI +19 157
from rack of: DIIOSUU

Tiles on rack:
A A E J R T T

Unseen tiles:
A A A A B C D D E E E E E
E E E G G H I I I I L L M
M N N N O O O O P P Q R R
R R R S T T T U U U V W X
Y ? ?

JA and JET sim about one percentage point apart here. JA keeps a much better leave, and JET scores an extra 5 points and is much more defensive.

Move	Score	Leave	Win %	Valuation
C9 JET	41	AART	48.34	40.5
C9 JA	36	AERTT	47.28	38.6

Usually when I can't decide what to do, I make the highest scoring candidate play. I try to prioritize playing quickly, so these heuristics help me put my opponents in time pressure.

Back Forward start 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 final Printable

Player	Rack	Score
Dean Saldanha		74
Matthew O'Connor	EILRSTZ	65

Last move: L3 IWJ +14 74
from rack of: IIW

Tiles on rack:
E I L R S T Z

Unseen tiles:
A A A A A A B B C C D D D
D E E E E E E E E E G H
H I I I J K L L M N N N N
N N O O O O O O P P R R
R R R S S S T T T T U U U
V W X Y Y ? ?

I have several choices here, but the best option is T(IFF)S. This play accomplishes several things that each give it a small amount of equity making it a better play than Z(EA) or LEZ. (This game took place in 2019, LEZ was a word back then)

- Fishes for bingos such as IDOLIZER, VELARIZE, and GLITZIER (obviously it bingos less often than ZEA, but the bingos still add value to it)
- Shuts down a ton of bingo lanes which is good after Dean just played IWI
- Does not run into the issue where I play ZEA and Dean plays something like TIFFS. This is possible and would drastically cut my bingo chances after ZEA, making ZEA weaker than it appears.
- Does not gain a substantial portion of it's EV from fishing for bingos that open triple lines.
- Closes the board thus increasing the value of the Z
- Masks my leave, making plays that open the triple appear safer, when in fact, they allow me to use my Z on the triple
- Prepare for using the Z on the triple if Dean bingos immediately down the V or the G, and prepares to use the Z for 60 point plays if Dean believes my play signals one pointers and is more comfortable playing a word like VIA (AVI was not a word back then) or VIE. In fact, after a play like IWI these plays are a relatively large percentage of his possible comeback play, due to the fact that TIFFS shuts down so many other options

Move	Score	Leave	Win %	Valuation
5G Z(EA)	12	EILRST	51.21	30.2
6H T(IFF)S	23	EILRZ	50.61	29.4
M5 LEZ	25	IRST	49.51	27.3
M1 ZIT	28	ELRS	45.55	19.6

Here are the sim results putting Dean on EINS. TIFFS is likely to underperform in the sim for 3 reasons

- Dean is likely to make plays similar to TIFFS if I make a fishing play like ZEA
- Bogowin fails to account for the fact that the smaller lead on a closed board after is better
- I am using the old leave values, and I am keeping the Z for several turns after TIFFS a lot. This adds equity to TIFFS overall that the sim does not account for

Move	Score	Leave	Win %	Valuation
5G Z(EA)	12	EILRST	58.05	43.7
M5 LEZ	25	IRST	55.62	39.1
6H T(IFS)	23	EILRZ	55.07	38.3

Here are the sim results putting Dean on E1NR. It does worse, mostly because TIFFS blocks several S hooks. The same issues with the sim are present, however.



Move	Score	Leave	Win %	Valuation
6H D(IFS)	25	AEHNR	53.34	28.8
6F HA	24	DENRS	48.20	18.9

Oppo next turn

Candidate Score Std. Dev. Bingo %

6F HA	62.5558	27.7402	81.6193
6H D(IFS)	32.1805	28.0583	46.7177

This is a hypothetical situation that results from me playing ZEA and Dean having what I believe him to have had. The sim was running on my rack of EILRST, to illustrate what can happen to me if I keep EILRST. In this situation, DIFFS is a much better play than HA. If Dean makes plays like this, the value of EILRST goes down drastically. I am only bingoing 46% with one of the best possible leaves in the game! The sim failed to calculate this, however, because it only sims with equity plays. Therefore, the sim from the previous turn simply has Dean making plays like HA and me bingoing 81% of the time

This is why plays like TIFFS are so powerful. After TIFFS, Dean is practically forced to do something that sets up my Z in a nice way, and I am holding flexible tiles that can hit the Z in many different ways. It should also be mentioned that TIFFS is not a total dead weight when it comes to bingo %, and it needs to not be, as this position is very close, and a 12% bingo chance after TIFFS makes the difference here.

Alluding to previous positions in the book, we see the true power of my relatively small lead on a closed board. I can groom my rack making 6-7 point plays that are actually meaningful on the dead board, and Dean is eventually forced to open the board which I am in a prime position to pounce on. These reasons are why TIFFS is the best play.

Underrated Leave Values

A lot of leave values at least line up with our “gut instinct.” This is because we’ve been playing Scrabble for long enough, and we can see patterns in words. For instance, common suffixes like ING, ERS, and IER are good leaves because of how many words contain them. Clunky feeling, inflexible leaves like BGT and CGP often end up both feeling bad and actually being bad. Given that none of those tiles form a common diphthong with another tile listed, your gut will tell you (correctly) that the leave is bad. Memorizing the underrated ones is important because your gut will be much more wrong on these than it will be with other leave values.

Many underrated leave values are leaves that have a word in them. I will not be featuring leaves such as HHPYY. Some of these listed will have a word in them, but it will be a small part of their equity.

Underrated 5 tile leaves

AAEMN

ABERT

AEIOZ
AEIQU
CHORT
CNORT
COPRT
EIKNT

A common theme with underrated 5 tile leaves is that they hit more bingos than you would expect. This is especially prevalent with something like CNORT, which hits a lot of two vowel draws. Two vowel draws involving two of AEIO are important when considering leave values, because each individual combination is so likely.

AAEMN hits more bingos than you expect, but the only two vowel draw it hits is AI. This is still better than average for a 3 vowel, two consonant leave, so part of its EV comes from that. AAEMN also hits common two consonant combos like NT, RT, ST, and LT. Finally you are very likely to get a decent bailout such as MAA, AMIA, or AMIE if you have a bad draw, making the disaster scenarios less of a disaster. All of these combined make AAEMN not a bad leave at all, and in fact a significantly positive one (+5.4)

With AEIOZ, it is similar but slightly different. Here we are not looking for bingos, although there are certainly some possible. We are instead excited about the possibility of drawing A, E, or O because those letters give us ZOAEA, ZOEA, and ZOOEA. The main weakness with 4 vowel leaves is the lack of words with lots of vowels. Given that we have lots of options with ZOEAE related words, that weakness is barely present in AEIOZ, making it a very strong leave

AEIQU is another example of surrounding a power tile with all of its best friends. This leave actually hits with 19 different two tile draw combinations, as well as basically every consonant in the pool leading to some sort of good Q word to work with. Its leave value of +11.6 is much higher than many people's gut instinct would tell them for a 4 vowel one consonant leave containing the Q

Underrated 4 tile leaves

It is more difficult for a 4 tile leave to be significantly different from your gut instinct. This is because drawing 3 tiles to it instead of two introduces a significant degree of smoothness, meaning that things are more likely to be average because there are far more combinations of what can happen. It is harder for a 4 tile leave to randomly hit a lot more bingos than you would expect due to this. Still, there are some leaves that are much stronger than you would imagine, and there are principles at hand that can help you determine if similar leaves are good

AACH

ABEI
AEIV
CHYZ

There are a couple of themes here. ABEI is more likely than it might appear to form a 5. In addition, if you draw an O or a U, you have bailouts, and it is probably slightly more likely to bingo than you think. AEI is also an underrated combination. AEI plus one more letter has a positive leave value with 18 different letters. The exceptions are the vowels and QWY. AACH forms a lot of 5 letter words that are likely to form good scores. This is a common theme with 4 letter leaves. It is harder to be significantly more likely to bingo than you expect when you are drawing to 3 tiles instead of 2. It is also harder to iterate it in real time as a human. However, what you can do is realize that AACH forms a lot more 5s than your gut might tell you, as 5s only require one additional letter, which allows for more leaves that randomly hit a lot of them.

Lastly, we have CHYZ. This leave works well because even if you are unlikely to bingo with it, you are very likely to be able to play something like YEZ keeping the synergistic CH, CHIZ for a high score, or HAZY, keeping the bingo prone C. Even if you draw all consonants, there is a high chance of a bailout due to the fact that CHY all work well with consonant dumps and CH is already a word.

Miscellaneous Ideas

- Playing a word that takes an S one from the double word score is not as scary as it looks. This is because your opponents plays using that spot will use up their S, which means that marginally, even though you gave them a good score, you also used up their S. It should be thought of as -4 for you if your opponents play was the best equity play by 4 compared to something else they could've played that you didn't set up
- For the same reason, setting up a hook to the triple and having your opponent burn the blank for 40-50 to block/use the triple is not ideal for you, but not as big of a deal as if they used it natural, because you drew out their blank
- It is possible for a setup that is going to be blocked 100% of the time to be the best play. Your opponent's sacrifice in blocking your setup must always be part of the calculations for the "value" of the setup. In fact, some endgames exploit this to the maximum, by making a threat knowing the threat will be blocked and then leaving an outplay elsewhere.

- Oftentimes in the endgame you want to empty the bag. If there are multiple bingo lines on the board and you can't block them all, and you are up a bingo, it is often best to empty the bag while blocking the most likely lane and deny your opponent an additional chance to fish
- You can often simplify your thought process on closed boards by simply refusing to open the board if you're ahead. This might not always work but oftentimes it's a good enough heuristic during a timed game that it's worth considering.
- Denying your opponent one point is just as valuable as scoring one point, since scrabble is a two player, zero sum game.
- One of the fastest ways that an intermediate player can improve is by not fishing for bingos they won't see anyways. This means that leaves like CINPS are much worse for a 1500 player, because they won't see the (mostly low prob) bingos that are possible.
- On average, a short open (a play that does not touch a DLS) increases opponent average next score by 2-3 relative to an exchange, and a long open (a play that does touch a DLS) increases opponent average next score by 4-5 points relative to an exchange.
- Very few words exist that lower average opponent score as an opening play. Even QI leaves your opponents scores nearly identical due to QIN and QIS and the I being a good floater for bingos. It's really only the VAV and the VAC of the world that can actually lower your opponents average score. An exchange is the best way to play defense on the opening play.
- Plays that are not fishes still have a nonzero chance of binging. Many of these plays need that nonzero chance in order to be the best play, and in fact, many of Nigel's "Nigelliest" plays take advantage of this fact. Take his play of ZIN against Trip Payne. It bingos 10% of the time afterwards, and it is only the best play by a small margin.
- One big failure of simulations is failing to account for the fact that a smaller lead on a closed board can be just as good as a bigger lead on an open board. Quackle's bogowin function calculates a win % at the end of a sim based on whose turn it is, the racks of the players, and the score. Due to less bingos and therefore less variance, a lot of board closing plays end up under simming and are often better than the sim suggests. This is why I am comfortable making plays like TIFFS and NET.

Afterword

I hope this book appeals to the reader not only to dispel rumors that I “waste blanks” or am strictly a “defensive player” but instead teaches the reader that Scrabble is a complicated game with many different facets to it, and I attempt to use each of them in harmony when I play Scrabble. A lot of times when I use the blank for a 30-40 point play, it is a 10 point equity sacrifice that is similar to a lot of other 10 point equity sacrifices that are justified when you are closing off parts of the board. This makes it equally worth it than the other ones, but because most people have a mental block around using a blank for non bingos, these plays don't get played very often by people other than me.

In addition, a lot of my defensive plays are simply the best plays when accounting for certain factors. Ephemeral defense is a tricky one, because people forget that it is a good idea, even though it does not accomplish something big like blocking off a section of the board for good. Often plays that limit your opponent's options severely for one turn can be best even at a pretty significant equity sacrifice. I make a lot of these plays, which is why I have a reputation as a defensive player, but, if these plays are correct (and my examples are), then I am actually a good player and not a defensive player.

I decided to only use my own games, both so that I did not have to criticize people that made plays that I deemed incorrect, and because I wanted to prove how often these positions come up. If these positions all occurred in the span of only a few hundred games in my corpus, they will occur fairly often for you! This doesn't even include the games that I came up with even better examples of that I did not put on cross-tables. For instance, last summer, I exchanged keeping NQ from a rack where I could've kept things like NR, NT, RT, and NRT! This ended up simming best by far, because it was a razor thin game on a closed board with no hope of me bingoing and there were two spots to play QIN for 30 points! In the end, I hit QIN and ended up winning by 4, proving once again that relative leave value is an incredibly important thing.

Lastly, I would like to make it clear that I am not an all seeing God. It is possible some of these positions I have misanalyzed. It is also possible that as AI improves, some of the things I find important in these positions will be less important than I thought, and other plays will be better than the ones I thought were best. If this is the case, I will edit this book to remove reference to the plays I claim are correct that have been proven wrong

Thanks for reading and good luck in your games!

Matthew O'Connor

