How to play the odds as declarer

(Making probabilities work for you)

Ron Karr
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Bridge is a game of *hidden information.*

As declarer, you can see dummy's hand, so you can tell how many cards the opponents have in each suit... but you don't necessarily know how the suits are divided or the location of specific honors.

Example: You are declaring 3NT. LHO leads the ♠Q and you win the ♠A.

Dummy:	♠432	♥KQ7	♦832	♣AJ109
Declarer:	♠AK	♥A43	♦AQ654	♣543

You have 7 top tricks and need 2 more, from diamonds or clubs. If you lose the lead, they will knock out your ♠K, so if you lose the lead again, they may have enough tricks to set you. Which suit should you attack? We will see how to answer this.

There are ***basic probabilities*** *(odds)* that can tell you (assuming no other information):

- What are the chances of a suit dividing a certain way?
- How likely are one or more finesses to work?

Then you can go ***beyond the basics****:*

- How do clues from the bidding and play affect the odds?
- When should you ignore the odds in a suit to make your contract?

The ***probability*** of an event is an estimate of how likely it is to occur. For example, if we have a 9-card suit, what are the chances that the opponents' cards are splitting 2-2? This can be expressed as:

Percentage: 40%
Decimal: .4

Fraction: 2/5
Odds: 2 to 3, or 3 to 2 *against* (odds)

Finesses

A basic finesse is a play that allows you to make an extra trick...*if* one of the opponents has a particular card. Normally we assume the chances of this are 50%... but as we'll see, this could change.

543 **AQ2**	Lead low toward the Q in hopes that second hand has the K.
QJ10 **A43**	Lead the Q (or J or 10): you win 3 tricks 50% of the time.
Q32 **A76**	Lead toward the Q. Also a 50% chance. (If you lead the Q, your chances of winning 2 tricks are approximately zero.)

If you take **two** finesses, the chances that both will succeed (or fail) is around 25%. (To compute the chances of two independent events *both* happening, *multiply* their probabilities.) The chances that *at least 1* of 2 finesses will succeed is 75%.

432
AQ10
Lead a low card and finesse the 10 if the next player plays low. Next time finesse the Q. You win 3 tricks if both K and J are on side (25%). You will win only 1 trick if both K and J are off side (25%). The rest of the time the honors are split, so you get 1 trick (50%).

432
AJ10
Also two finesses. There is no way to win 3 tricks, but you win 2 tricks as long as both K and Q are *not* off side; therefore 75% of the time.

Q42 **A103**	Lead toward the Q *first*. If it loses, next lead toward 10. There is a 75% chance to win 2 tricks. Any other play is only 50%.

The distribution table

We have	They have	Split	Probability (%)
11	2	1-1	52
		2-0	48
10	3	2-1	78
		3-0	22
9	4	3-1	50
		2-2	40
		4-0	10
8	5	3-2	68
		4-1	28
		5-0	4
7	6	4-2	48
		3-3	36
		5-1	15
6	7	4-3	62
		5-2	31
		6-1	7

"Eight ever, nine never?"

You've probably heard this saying, which refers to whether you should finesse for a Queen or to drop it. It's cute, but has some drawbacks:

- You have to remember what "ever" and "never" mean.
- It doesn't deal with other numbers of cards, e.g. 11, 10, 7, 6
- "Never" is somewhat misleading, in that the decision is *close* and can easily be overridden by other factors

K876
A9543
From the table, we see that the chances of an even split are 40%. So the odds are against an even split. But suppose you have the Jack too:

K876
AJ543
Play the K first, hoping to find a stiff Q (12% chance). If both follow low, do you finesse or play for the drop? This is "nine never", which means: never finesse—but that's an exaggeration. It's *slightly* better to play the A.

A53
KJ762
This is "eight ever". After cashing the A, finessing is much better than playing for the drop. Why? Assume the suit splits 3-2. The Q is more likely to be in the hand with 3 cards. If it is LHO, you are helpless. If it is RHO, the finesse will win.

KJ109
A876
You can finesse either way with 50% chances. But there are often clues to make it more likely that the Q is in one hand or the other.

86432
AQJ1098
From the table, a 1-1 split is 52%, so cashing the Ace is *slightly better* than finessing.

98765
AQJ32
With 10 cards (or less), finessing is clearly best. Cashing the A wins only if there was a singleton K (26%).

Q52
AK107
Play A, then Q. It's *slightly* better to play for the drop.

52
AKQ10
Finessing is much better than trying to drop the J. This is "six ever" (analogous to "eight ever").

Do you see the pattern?

- **11, 9, 7:** Play for drop with an *odd* number of cards and they can split evenly. (A close decision)
- **10, 8, 6:** Finesse with an even number of cards. The missing honor is less likely to drop.

Therefore, my updated slogan is: ***"EVEN ever, ODD optional"***
(where *optional* means: the odds slightly favor the drop, but other considerations could easily override it)

Back to the play problem from the first page: In 3NT, to get 2 extra tricks, should you attack clubs or diamonds?

Dummy:	♠432	♥KQ7	♦832	♣AJ109
Declarer:	♠AK	♥A43	♦AQ654	♣543

In clubs, you can finesse twice, which gains two tricks if LHO has at least 1 honor (75% of the time). In diamonds, you can finesse the Q, potentially getting *three* extra tricks. But for that to happen, RHO must have the K *and* the suit must split 3-2. (If the finesse wins but the suit breaks 4-1, you may not have time to set up another diamond, since they will run spades.)

A 3-2 split is 68%, and the finesse wins only half the time, so the overall probability is 1/2 x 68% = 34%. So clubs are *much* better.

If the diamonds were AQJxx instead, then you need a finesse *or* a 3-2 split. The exact calculation is trickier—but it must be *better* than either individually. (The answer is 84%).

Another example: you need 4 tricks and you can afford to lose the lead once.

A:	**KQJ10x**	vs.	B:	**KJ109x**
	xx			**xxxx**

Even though B has 9 cards to A's 7, A is better, because it gives 4 tricks whenever the suit breaks 4-2 *or* 3-3, plus when LHO has a stiff A: which works out to 85%. B works only when the Q is with LHO (50%).

Using clues from the bidding

♠K103
♠AJ2
You have a 2-way finesse for the ♠Q. On average, your chances are 50% either way. What information can affect your chances?

1. The hand with more cards in a suit is more likely to have any honor in that suit

Suppose LHO had overcalled 1♠. If LHO has 5 spades and RHO has 2, the odds of the Q being with LHO are 5 to 2, or a 5/7 probability, or about 71%. (In practice, they will be even higher because LHO might have 6 cards and would be less likely to bid a 5-card suit without the Q.)

2. The hand with more HCP is more likely to have any honor

Suppose RHO opened 1NT (15-17 HCP) and you landed in a partscore with 20 HCP between declarer and dummy. LHO is marked with 3-5 HCP, so the odds of finding any honor with RHO are around 4 to 1 (80%).

3. The hand with more cards in the *other* suits is less likely to have any card in *this* suit

Contract: 4♠. Lead: ♦Q.
Dummy: ♠K1032 ♥A87 ♦K54 ♣QJ10
Declarer: ♠AJ954 ♥K43 ♦A3 ♣542

You are in 4♠ and LHO leads the ♦Q. You can play to drop the ♠Q or finesse either opponent for it. Suppose LHO had opened 3♦, showing probably 7 diamonds, so RHO has 1. This means LHO has 6 *unknown cards* and RHO has 12. So the chances of finding any missing card with RHO are about 12 to 6, or 2 to 1, or 67%. In essence, there is less room in LHO's hand for any other card.
If RHO instead had opened 3♦, the odds swing the other way. It is correct to finesse against the partner of the preempter.

Nerd alert!

Law of vacant spaces

The previous example illustrates something called the *law of vacant spaces (*or *places*)*.* Think of each of the opponents' cards as a space, or slot or location where a card could go. The law says:

Any missing card is equally likely to be in any vacant space.

When the cards are dealt, both opponents have 13 vacant spaces. Therefore any hidden card is equally likely to be in either hand.

As we get information from the bidding or play, the number of vacant spaces is reduced. Often there is a difference of 1 or more cards in the number of vacant spaces in the opponents' hands. That affects the odds. For example, if RHO has 6 vacant spaces and LHO has 12, the odds are 2 to 1 that LHO has any missing card.

Principle of restricted choice

This type of combination often confuses people, but it comes up frequently.

Kxxx
A10xxx

You hope for a 2-2 split. But if you play the K and LHO drops the Q (or J), you now have the option to finesse, playing RHO for Jxx (or Qxx). You might think the chances about equal, since there's only one card missing and it could be in either hand. Yet the finesse is clearly better! Why?

Look at it from the defender's point of view. Holding the stiff Q or stiff J, you must to play it. But with QJ doubleton, you can play either one; neither is better. So when you are declarer and see the Q, it's more likely the defender's play was was forced (a singleton) rather than a random choice from QJ*.*

Play considerations

Sometimes you need to *ignore* the odds in a given suit to improve your chances for a hand.

Dummy: ♠72 ♥952 ♦AK4 ♣A10863
Declarer: ♠KJ6 ♥AK8 ♦653 ♣KJ97

LHO leads ♠4 vs 3NT and RHO plays ♠Q. You win the K and count 9 tricks, even if you lose one in clubs. The percentage play in clubs is to play the A and K ("nine never"). But if RHO has ♣Qxx, a spade return could defeat you if LHO has 5 spades. It's OK to lose a club to LHO, because your ♠J is protected. So play the ♣A and finesse the ♣J, guaranteeing your contract.

Dummy: ♠732 ♥KJ95 ♦A54 ♣A98
Declarer: ♠KQ6 ♥A876 ♦K432 ♣K3

RHO opened 1♠ and you got to 4♥. LHO leads ♠5 to RHO's A and RHO returns a spade. Fortunately LHO follows with the ♠4. You cash ♥A and play ♥6 and LHO follows. The percentage play in hearts is "eight ever" (finessing) but here you have *two* reasons to play the ♥K:

1. On the bidding, RHO is favored to have the ♥Q.
2. You know that LHO has a doubleton spade. Losing the finesse to a doubleton ♥Q is fatal because RHO will return a spade for his partner to ruff, so you will lose *two* trump tricks (as well as a spade and diamond) and go down. You don't mind losing *one* trump trick to the Q.

More examples

Dummy: ♠743 ♥42 ♦AK532 ♣642
Declarer: ♠AK2 ♥AK7 ♦987 ♣AQ75

LHO leads ♥Q against your 3NT contract. You have 7 top tricks. Your best play is to hope for a 3-2 diamond split (68%). Finessing in clubs is only 50%, and even if it wins you need to find a 3-3 split too.

Be careful to *duck* the first (or second) round of diamonds so that you maintain an entry to run the long diamonds.

Dummy: ♠743 ♥A42 ♦AQ1032 ♣64
Declarer: ♠AJ ♥KJ9 ♦987 ♣AQ752

LHO leads ♠K against your 3NT contract. You have 5 top tricks so you need 4 more, and you can't afford to lose the lead. There is no point in finessing in hearts or clubs, because those suits won't give you enough tricks. You have to hope for all 5 tricks in diamonds, and your best play is to finesse the *10*, hoping for KJ on your left. You have about a 25% chance of success, but it's the best you can do.

Dummy: ♠K432 ♥AQJ72 ♦832 ♣6
Declarer: ♠AJ984 ♥K109 ♦K75 ♣A2

LHO leads ♣K against your 4♠ contract. You win and lead a spade to the K. Should you finesse or play to drop the Q? The drop is the percentage play for the suit itself, but not for the hand. You need to keep RHO off lead so he can't lead a diamond through. LHO can't attack diamonds without setting up your K. If the trump finesse loses, your contract is safe because you can pitch diamonds on hearts once trumps are drawn.

Dummy: ♠KJ104 ♥432 ♦A2 ♣QJ32
Declarer: ♠A32 ♥AQJ5 ♦75 ♣AK54

LHO leads ♦4 against your 3NT contract. You can count 8 top tricks. For your 9th trick, you can finesse spades either way; or you can finesse diamonds. If you lose the lead, the opponents are likely to win at least 4 diamond tricks. How do you play?

The answer is to *combine* your chances in two suits. If you take either finesse and it loses, you are down, so your chances are 50%. The way to increase that is to cash the A and K of spades *first.* The chances of the Q dropping is only about 18%, but if it works you don't need the diamond finesse, and if it doesn't work, you are still alive to try the diamond finesse. The total chances are about 59%.