

"What Does *Empirical Bridge Research* Say About Bidding 3NT vs 4H/4S When Opener Bids 1NT and Responder Can Support Both 4H/4S and 3NT Contracts?"

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On occasion one Partner holds a "flat" Hand with (1) no void, (2) no singleton, (3) no more than one doubleton, (4) possibly a 4- or 5-card Major, and (5) **15-17** HCPs. On such occasions Partner should always open **1NT**. To not bid **1NT** "lies" to Responder about Partner's holdings, and once the "lie" is told the bidding train thereafter can *never* be restored to the bidding tracks!

On some of these occasions Responder will hold a 4-card Major plus 8/9-10+ HCPs. Because by his bid Opener "limited" his Hand, Responder is thereby anointed "The Captain" who must eventually decide where to set the final contract. "The Captain" may then have to decide whether to set the final contract at **4H/4S** as against **3NT**. The Responder knows that:

1. A **3NT** contract making exactly **3** will yield a **lower** Bridge Score than a **3H/4S** contract making exactly 4, and
2. A **3NT** contract making **4** will yield a higher Bridge Score than a **3H/4S** contract making exactly 4.

Many bridge players seem to believe that when there are reasonable arguments for bidding either **3NT** or **4H/4S** it is generally *better* to bid **4H/4S**. However, best practice in such situations is certainly worth *empirical research* of some sort! In the July, 2024 issue of the ACBL Bridge Bulletin Bob Rasmussen reported research on this issue in an article (p. 28) titled, "Notrump or Major-Suit Fit?: What the Numbers Say on

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¹ As noted in an article in the Winter/Spring, 2024 article in The American Bridge Teachers' Association (ABTA) Journal, https://esther-bridge.com/pdf/ABTA_1_24.pdf, Esther Klinktoast-Houstonhousen in fact is a hypothetical, and not a real person! So this article was really, really written by Bruce Thompson.

Bypassing a 4-4 Fit for Notrump." Here Esther, using charts she created, summarizes her *close, personal friend* Bob's research on this noteworthy question.

Some readers may not realize that various forms of *empirical research* can and have been used to *empirically* determine what may be best bridge practices. Some bridge research studies involve *computer simulation* research that models various bridge situations and therein variations in bidding or play. For example, in her lesson, "(1) Does the 'Law of Total Tricks' ('LOTT') Really Work, and (2) Is the 'LOTT' Magic?",² Esther summarizes a computer bridge simulation study by Matthew Ginsberg addressing exactly those questions. As another example, in "Esther Bridge 'Pop' Quiz" #67: "Responding to Partner's 1NT Opening Bid When You Hold an *Extremely Weak Hand*, Including the Importance of 'Playing the Room'"³ Esther summarizes a 2011 *computer simulation* by Ted Mueller on the importance of executing a Jacoby transfer to a Major when Partner opens 1NT and you as Responder hold few or even 0 HCPs.

But other bridge research uses *actual bridge results* from actual bridge competitions, rather than computer simulations. As a third example, in "Esther Bridge Convention Lesson #25: "What Does Research Say About Which Is the Best 1NT Point Range to Use?: 'Kamikaze' vs 'Mini' vs 'Strong' NT"⁴, Esther summarizes research by Pietro Campanile who studied bridge results for *actual players* using (1) 10-12, (2) 12-14, (3) 13-15, (4) 14-16, (5) 15-17, and (6) 16-18 HCP ranges to open 1NT. Pietro studied a population of 7,842 Boards involving all the Boards played in all 1988-1998 and 1992-2002 world and European championships Team competitions.

Bridge Situations Modelled by Rasmussen

Bob Rasmussen as a fourth example of empirical bridge research generated **50,000** Boards meeting certain simulation parameters which were then played by the computer to obtain final Bridge Score results on each Board. Rasmussen required the Boards to all meet the following requirements:

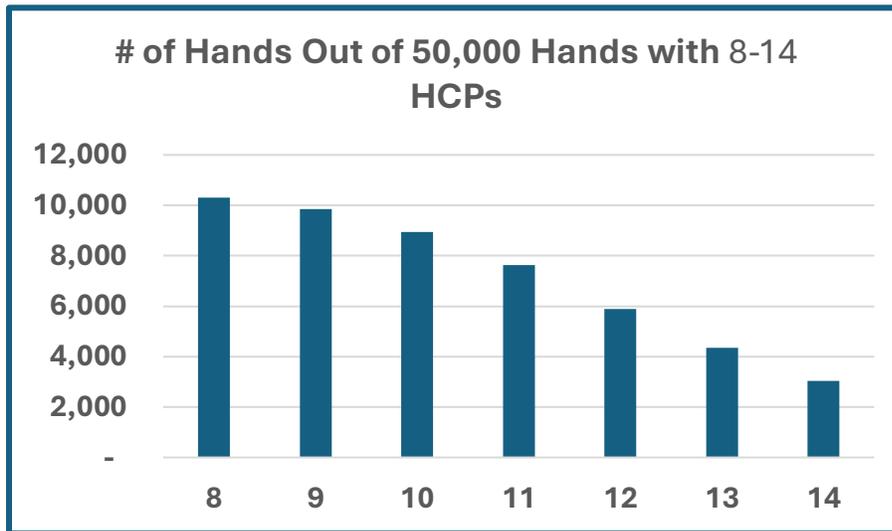
² Within the "Esther Bridge Lessons" go to: https://esther-bridge.com/pdf/LOTT_bad.pdf

³ Within the "Esther Bridge Lessons" go to: https://esther-bridge.com/quiz/q0067_q.pdf

⁴ Within the "Esther Bridge Lessons" go to: https://esther-bridge.com/pdf/NT_range.pdf

1. The Opener always held a natural 1NT opening with (1) **15-17** HCPs, (2) no voids, (3) no singletons, (4) no more than one doubleton, and (5) exactly **4** Spades.
2. The Responder always held (1) **4** Spades with (2) a 4-3-3-3 "flat" distribution and (3) invitational/game-forcing HCPs.

All but **10** of the 50,000 Hands held by Responder randomly held **8-14** HCPs. Here is the distribution of HCPs randomly held in the Responder's Hands:



Rasmussen then compared the Bridge Scores on Boards bid and played at **4S** versus **3NT**. As he noted, there are **7** possible outcomes for these comparisons:

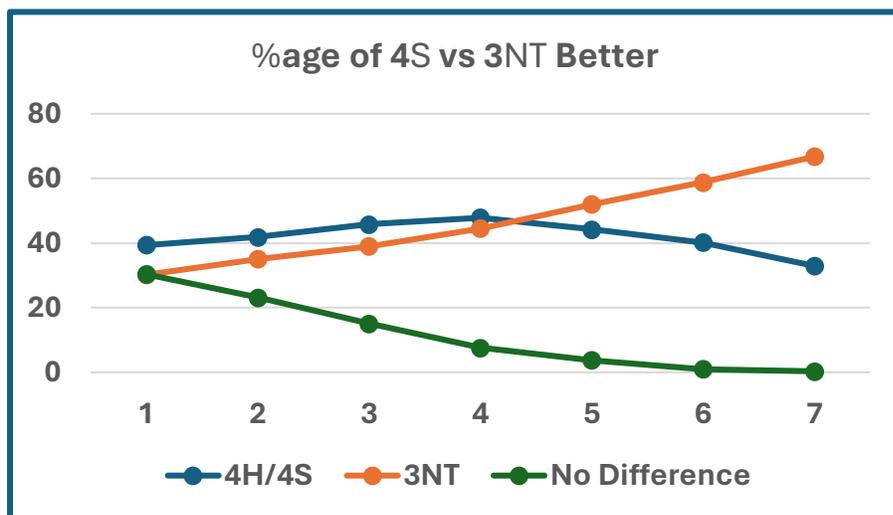
1. **4♠** goes down, but **3NT** makes;
2. **4♠** makes, but **3NT** goes down;
3. Both **4♠** and **3NT** go down, but **3NT** goes down *fewer* Tricks;
4. Both **4♠** and **3NT** go down, but **4♠** goes down *fewer* Tricks;
5. Both **4♠** and **3NT** go down the *same* number of Tricks;
6. Both **4♠** and **3NT** make, but **4♠** scores better than **3NT**; and
7. Both **4♠** and **3NT** make, but **3NT** scores better than **4♠**.

Here are the %ages of Game contracts making across the range of **8-14** HCPs held by Responder across the 50,000 Boards played in both **4S** and **3NT**.

HCPs	%age Making		3NT -
	4H/4S	3NT	4H/4S
8	27.63	26.53	-1.1
9	41.58	43.89	2.3
10	58.05	61.01	3.0
11	72.57	76.83	4.3
12	84.30	87.49	3.2
13	92.02	93.73	1.7
14	96.28	96.87	0.6

Clearly, to make either the 4S or the 3NT contracts the 1NT Responder needed to hold 10+ HCPs for the contracts to make a majority (> 50%) of the time. However, **the 3NT contract was slightly more likely than the 4S contract to make as long as the Responder held 9+ HCPs!** This advantage in favor of bidding 3NT as against 4♠ was *greatest* when the Responder held 10-12 HCPs.

Of course, especially for competitions scored in MatchPoints rather than in IMPs, where the rubber meets the road is which contract, 4♠ versus 3NT, yielded a *better* Bridge Score on given Boards. Here is Esther's chart showing these comparisons.



The following table presents in numerical form the same comparisons of %ages of Boards yielding *better* Bridge Scores (and thus MatchPoints) for 4S as against 3NT contracts.

HCPs	4S	3NT	No Dif.	4S-3NT
8	39.45	30.21	30.34	9.24
9	41.82	35.04	23.15	6.78
10	45.84	39.03	15.12	6.81
11	47.84	44.53	7.63	3.31
12	44.20	52.02	3.77	-7.82
13	40.16	58.83	1.01	-18.67
14	32.93	66.74	0.33	-33.81

As a **caveat** it must be remembered that these results generalize perfectly only to bridge Boards structured the same way the 50,000 Boards were constructed. Furthermore, these results were for computers playing these contracts, and therefore may generalize better to expert human players as against less experienced bridge players. Finally, while it may be true that computers *equally well* play both **4S** and **3NT** contracts, it is possible that human bridge players play **4S** contracts better than **3NT** contracts, or *vice versa*.

Conclusions

When **Opener** holds (1) a "flat" Hand, (2) no void, (3) no singleton, (4) no more than one doubleton, (5) **15-17** HCPs, and (5) **4** Spades, and also **Responder** holds (1) exactly **4** Spades and (2) **8-11** HCPs, the Partners tended to obtain a better Bridge Score and more MatchPoints by bidding **4S** as against **3NT**. The superiority of the **4S** contract was more pronounced as the Responder held *fewer and fewer* HCPs, and most pronounced when the Responder held **8** HCPs.

On the other hand, when **Opener** holds (1) a "flat" Hand, (2) no void, (3) no singleton, (4) no more than one doubleton, (5) **15-17** HCPs, and (5) **4** Spades, and also **Responder** holds (1) exactly **4** Spades and (2) **12-14** HCPs, the Partners tended to obtain a better Bridge Score and more MatchPoints by bidding **3NT** as against **4S**. The superiority of the **3NT** contract was more pronounced as the Responder held *greater* HCPs, and was dramatically pronounced when the Responder held **14** HCPs.

These conclusions generalize only to Boards on which Partners have exactly a **4-4** "fit" in a Major and one Partner opens **1NT**. These results do not generalize to situations in which one Partner opens **1NT** and where Partners hold **8** cards in the Major but something *other* than a 4-4 "fit" or situations in which Responder's Hand is not "flat."