How to Build a Bidding System

Attempt at a Theory

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Forward

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Larry C. Lande — I am a Computer Scientist and own my own software company. I learned about bridge in High School, but did not really play until the Thai's taught me while I was overseas in military service. I gave up tournament play while my youngest daughter was growing up. I started playing online again in 2000 and I met Sasha there.

In each of our partnerships we have struggled to further refine our bidding systems. It soon became obvious that we needed to first define some general principles when constructing a bidding system. In this article we will try to expose them.

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There are many other (too numerous to mention) professional bridge players who have been more than willing to explain their favorite conventions and theories.

Many of the professional bridge players practice and teach online and will gladly help anyone interested in learning more about bridge. Online bridge is truly a godsend to those who are interested in furthering their games by kibitzing the greats and having the tools available for practicing and developing new partnerships from around the world — OKBridge, Swangames, and BBO to name our favorites.

1. What are we bidding for?

Bidding is both an art and a science. How much art or science is highly dependent on the individual bidding system. The system should not be primitively natural as it is not optimal (bad use of space) nor should it be purely a relay system as this can give too much time and space for the opponents to intervene and frequently does not involve partner's opinion — old Russian saying: One head is good, two are better. Basically we want to make it as dangerous as possible for the opponents to enter the auction, to protect our information from their possible intervention and/or preempts, and when possible to disguise at least one of the hands (if possible, declarer's hand) from the opponents as they always want to beat our contracts.

Bidding systems and conventions are mainly to give information not to hide it. It would be nice to be able to inform only your partner and not the opponents but this can only be rarely achieved. The best that we can do is find some calls (and their meanings) that are more useful to us than for our opponents. Hiding information on purpose is never good. It is better to say that you give information if you think it statistically pays off and do not, otherwise.[1] Most of the time, it is a question of experience (frequently substituted by ideology based on nothing) of when to inform and when not to. What is wrong with the purely relay approach? Normally, it gives away a "bit" more information than our partnership really needs. What is more important and is not applicable to purely relay systems is that each bid should involve the aspect of (re)evaluating the hand, exactly what we see in standard methods. The largest problem in the primitively natural approach is that the use of space is too far from optimal.

Any system that is being constructed needs to be very good in arriving at the best part score contracts also. Hopefully in as few bids as possible so as to limit the opponents' time and space to act. Ideally a majority of openings bids should enable the partner to place the final part score contract(s). If it is possible, competition could become a dangerous business for opponents. When we cannot compete accurately for part score contracts, we are doomed.

There are many advocates of the blasting into game school. We do not think that it is always wrong but there are many hands in which it is best to seek partner's opinion on the matter. It does not mean that we should continue bidding if we already know the most reasonable final contract. However, in most cases, even if we know that we belong to game, we have to investigate which game to play. The flexibility principle of Sergei Kustarov is frequently applicable in such positions — the three-level should be the search for the best game contract and simultaneously the bids can later be converted into slam tries.

Example 1.1. Two-way Game Tries (Robert Ewen originally)**.** After 1♡-2♡, when the opener is sufficiently secure about the 3-level and has a singleton it really does work to tell partner about it as you can reach or stay out of game when it really pays off. As it can be dangerous to invite the opponents into the auction by bidding the specific singleton or void, you cannot just bid it willy-nilly. In this case it is advisable to use one of the idle bids to tell partner that you have one and partner relays when he has an interest in knowing your shortness. For example, you could bid 2♠ encouraging partner to bid **2nt** and then you bid the next suit above the singleton: 3♣ says ♠ singleton; 3♢ says ♣ singleton; and 3♡ says ♢ singleton. Instead of automatically replying **2nt**, responder can either bid the suit where

[1] We assume that we have a tool to estimate what we gain and what we lose by giving out this information. So if we have a positive value — we give it, otherwise we do not.

most of his points are concentrated, when in principle responder would accept the invitation, or sign-off in 3♡ without asking about shortness.

The general form of this convention is:

`Over 1♡-2♡`

- **2♠**: unspecified mini-splinter
  - **2nt**: asking about shortness
    - 3♣: ♠ shortness
    - 3♢: ♣ shortness
    - 3♡: ♢ shortness
  - 3♣: good ♣ suit, in principle the invitation is accepted
  - 3♢: good ♢ suit, in principle the invitation is accepted
  - 3♡: invitation rejected
- **2nt**: ♠ "long" suit game try (looking for help)
- 3♣: ♣ "long" suit game try (looking for help)
- 3♢: ♢ "long" suit game try (looking for help)

`Over 1♠-2♠`

- **2nt**: unspecified mini-splinter
  - 3♣: asking about shortness
    - 3♢: ♣ shortness
    - 3♡: ♢ shortness
    - 3♠: ♡ shortness
  - 3♢: good ♢ suit, in principle the invitation is accepted
  - 3♡: good ♡ suit, in principle the invitation is accepted
  - 3♠: invitation rejected
- 3♣: ♣ "long" suit game try (looking for help)
- 3♢: ♢ "long" suit game try (looking for help)
- 3♡: ♡ "long" suit game try (looking for help)

Over a short/long suit game try (after the long or short suit is indicated) you can bid a new suit below **3M** saying "I am in doubt but have some values in the new suit."[2]

While the above auctions are of lower frequency than those produced by some other methods, it is well worth remembering as the principle can be used in many other sequences such as the following:

1**nt**-2♢(transfer to ♡)/anything instead of 2♡[3]
(1♣)-1♡-(**Pass**)-2♡
Pass-1♡/2♣(reverse Drury)-2♡
1♢-1♡/2♡
1♡-anything above 2♡[4]

What we would like to stress is that in some situations bidding above 2**M**, we by default apply this convention, since there is no other reason to bid so unless we have a fit in the **M** (like in the sequence 1**nt**-2♢(transfer to ♡)/anything instead of 2♡).

When the opening bid can have a wide range it is very useful to play the re-bids of 2♠ and 2**nt**, respectively, as forcing for one round and to use mini-splinters that show either the range above the normal splinter bid or a minimum hand with shortness as many otherwise unreachable slams or games will not be missed. In this case, by agreement, the responder should not normally jump to game with a positive hand and instead re-bids something like 3**nt**, thereby saving space for the opener who might be looking for a slam.

Notice, that using these methods, you are still free to blast into game. For example, instead of the sequence 1♡(limited opening)-2♠(unspecified mini-splinter)/**2nt**-3♣ with ♡ fit, ♠ shortness, and ♣KJx, it is worth considering to simply blast into game, since the **Double** of 3♣ can produce a killing lead▽

[2]The rule "the next suit above the singleton" is the only way to show the singleton not bidding it naturally that leaves a natural bid below **3M** for showing such a new suit different from the suit of the singleton.
[3]Shortness means an empty doubleton.
[4]This is better suited to limited openings, where the opener cannot be looking for a slam.

Another case worth mentioning here is the auction **1m**-1**M**/2**M** (assuming some shortness in the case of 3-card raise — by necessity a singleton, when minimum): the relay suit (2**nt** in the case of spades) can be used to ask partner for what type of raise is made. The responses are five steps:

1**st** **step**: some hand (minimum or maximum) with shortness someplace
2**nd** **step**: 3-card raise with a minimum
3**rd** **step**: 3-card raise with a maximum
4**th** **step**: 4-card raise with a minimum and no singleton
5**th** **step**: 4-card raise with a maximum

This particular series of bids is used by Rich Reisig in his system. These uses, along with bidding a true second suit, give greater clarity to your auctions and pass the maximum amount of information between the partners. (See also Example 2.3 below.)

Preempts. There are several approaches to preemptive bidding: UNDISCIPLINED PREEMPTS assuming no (or rare) further auction — preempt and die; DISCIPLINED PREEMPTS letting the partner investigate a possible game or slam; INFORMATIONAL PREEMPTS giving a picture which can help in further cooperatively preempting[5] — notice that the most effective preempts are cooperative — here it is better to use Defensive/Offensive Ratio (DOR). Of course, in this case it will involve some artificial calls and sometimes we will lose by getting a **Double** of them. If the first partner has already **Passed**, then the other partner can preempt in a less disciplined manner — this can also be cooperative: when the first partner, being a passed hand, acts (if ever), it must be in moderation. Each approach has its positive features. We are more in favor of the last one$_\bigtriangledown$

In this article we will not deal too much with the problem of evaluating hands and estimating their strength. We will deal with it if this matter affects the system we are constructing.

During the text we will also describe the MAJOR DIAMOND SYSTEM based on the principles we are discussing.

We hope this article is both instructive and not too boring because of its length. As the father replied to his daughter about what style of dress she should wear, "Long enough to cover the subject, but not so long as to be uninteresting." We have no intention to cover everything.

The art and science of bidding consists of skills in assigning meanings to bids. Clearly, when we assign meanings to bids we need to keep in mind risk versus gain. We have no inclination to produce complicated, hard to memorize systems and conventions. For example, if using the primitive natural approach, you would like to bid 3♢ in the situation 1♠-(2♡), you bid it also applying the methods exposed herein — but in a slightly different manner so as to give greater clarity to the bid. These methods do not require remembering a lot of sequences: following general rules and schemes, you can distinguish many possible meanings of the 3♢ bid — such as competitive, invitational, forcing, with/without ♠ fit. However, the systems and conventions we will discuss are not KISS (Keep It Simple Stupid). They are better suited to regular partnerships of above average level.

Everybody knows that a typical situation in an auction is a lack of information and limited bidding space. If we use space poorly, we lose a lot. Our loss is probably much worse than we can initially imagine. Thus, we must understand how to measure the bidding space left in our auctions. In the next section we will deal with the problem of each bid's capacity (measuring the bidding space left) and leave the delicate problem of WHAT TO ASSIGN to the following sections. First we have to know HOW MANY we are able to assign.

[5] Al Roth's book "Picture Bidding" is a good read related to this subject.

2. Bidding Space. The 1/2-Rule

In this section we deal with the quantity of information not with its quality.

A known truism says that good bridge players are people who are able to count up to 13 by not removing their shoes. However, we will need a bit more complicated piece of elementary mathematics here.

If the reader has some time and milk according to the following short story:

— Has your daughter married?
Why do you think so?
— Because I saw her nursing a baby.
Why not? If a virgin has some time and milk?!

Then he/she can read the mathematical arguments below. Otherwise, he/she can skip them and pass to the conclusions that we deduce from them.

We will first assume that the opponents are silent.

We denote by B_k the k^{th} step bid. So, B_0 is **Pass**, B_1 is 1♣, B_2 is 1♢, etc. Let us find the number $U(m)$ of sequences that begin with the bid B_k and end with the bid B_{k+m+1}. Also, let us calculate the number $V(m)$ of sequences that begin with B_k by a predetermined partner and end with B_{k+m+1} by a predetermined partner (the same or another). Dealing with $U(m)$, each sequence can be described as a subset (possibly empty — it is the case of the sequence B_k-B_{k+m+1}) of the set of all bids strictly lying between B_k and B_{k+m+1}. There are exactly m such bids. Therefore, $U(m) = 2^m$ (it is a well-known formula for the number of subsets). It easily follows from the formulas $0 = (1-1)^m = \sum_i C_m^{2i} - \sum_i C_m^{2i+1}$ and $2^m = (1+1)^m = \sum_i C_m^{2i} + \sum_i C_m^{2i+1}$ that $V(m) = 2^{m-1}$. Now it is easy to see that the number of all sequences ending with the bid B_k is equal to $2^k - 1$ for $k > 1$, to 2 for $k = 1$, and to 1 for $k = 0$.

Let us take some very formal bidding system. Let B be some bid and let S_i, $i = 1, 2, \ldots, n$, be all the sequences that, according to the system, end with the bid B, not necessarily the final bid of the auction. After the sequence S_i, the partnership can hold n_i combined hands (= the number of possible hands of one partner times the number of possible hands of the other one). We denote by $p(n_i)$ the mathematical expectation of the score after the sequence S_i. Thus, we assume that this score is a function (obviously decreasing) of the number n_i. Sure, in reality it depends on the types of those n_i hands. That is, on the quality of the information we have at that moment. Since we agreed to consider only quantities of information, we can assume that, statistically, the system supplies us with the best possible quality of information. In other words, we can assume that $p(n_i)$ depends only on n_i. The mathematical expectation of the score in all described situations is $p = \sum_i \frac{n_i p(n_i)}{N}$, where $N = \sum_i n_i$ is the number of the combined hands involved.

Compared with linguistics, in an ideal bidding system, every sequence (every sequence of letters, if in a normal language) should make some sense: if some sequences are not allowed, we have more hands to deal with in the other sequences, which makes them less exact.

Let us change our system so that the number N is the same but the n_i's are different. Intuitively, we reach the best possible value for p when all the n_i's are the same,[6] $n_i = \frac{N}{n}$. In other words, in an optimal system, for any given bid B_k, the probability T_k that a particular sequence ends with the bid B_k (the auction can still continue) does not depend on the sequence.

This leads to the following model of an ideal system. We denote by C_k the probability of the contract corresponding to the bid B_k. By the above reasons, we can assume that the probability $Q_{k,m}$ of making the bid B_m by the second partner after the bid B_k by the first partner does not depend on the sequence which led to this position. In particular, $Q_{k,k}$ is the probability of **Pass** after the bid B_k. Similarly, we denote by $P_{k,m}$ the probability of making the bid B_m by the first partner after the bid B_k by the second partner. In these terms, the probabilities of the sequences **Pass**-**Pass**, **Pass**-1♣, 1♣, **Pass**-1♣/1♢, **Pass**-1♢, 1♢, ... are $P_{0,0}Q_{0,0}$, $P_{0,0}Q_{0,1}$, $P_{0,1}$, $P_{0,0}Q_{0,1}P_{1,2}$, $P_{0,0}Q_{0,2}$, $P_{0,2}$, ..., respectively. Since $T_0 = P_{0,0}Q_{0,0}$, $T_1 = P_{0,0}Q_{0,1} = P_{0,1}$, $T_2 = P_{0,0}Q_{0,1}P_{1,2} = P_{0,0}Q_{0,2} = P_{0,2}$, ..., from this group of equations, we obtain $P_{0,m} = PQ_{0,m}$ for any $m > 0$, $P_{k,m} = Q_{k,m}$ for $m > k > 0$, and $Q_{k,m} = Q_kQ_{k+1}Q_{k+2}\dots Q_{m-1}$ for $m > k \geq 0$, where we denote $P = P_{0,0}$ and $Q_k = Q_{k,k+1}$. From the equalities $\sum_{k\leq m} Q_{k,m} = 1$ and $\sum_{k\leq m} P_{k,m} = 1$ valid for any $k \geq 0$, we can derive that $P_{k,k} = P_k$ for any $k > 0$, where we denote $P_k = Q_{k,k}$ for $k \geq 0$. Hence, we have $P_k + Q_k + Q_kQ_{k+1} + Q_kQ_{k+1}Q_{k+2} + \dots = 1$ for $k \geq 0$ and $P + PQ_0 + PQ_0Q_1 + PQ_0Q_1Q_2 + \dots = 1$. This implies that $Q_k = \frac{1-P_k}{2-P_{k+1}}$ for $k \geq 0$ and $P = \frac{1}{2-P_0}$.

Each sequence that leads to the contract B_k has probability $PQ_0Q_1Q_2\dots Q_{k-1}P_k$. By the above formulas for the number of sequences, $C_k = (2^k-1)PQ_0Q_1Q_2\dots Q_{k-1}P_k$ for $k > 1$, $C_1 = 2PQ_0P_1$, and $C_0 = PP_0$. These formulas allow us to express P, P_k's, and Q_k's in terms of C_k's:

$$P = \frac{1+C_0}{2}, \qquad P_0 = \frac{2}{1+\dfrac{1}{C_0}}, \qquad P_1 = \frac{2}{1+2\cdot\dfrac{C_0}{C_1}\cdot\dfrac{1-P_0}{P_0}}, \qquad P_2 = \frac{2}{1+\dfrac{3}{2}\cdot\dfrac{C_1}{C_2}\cdot\dfrac{1-P_1}{P_1}},$$

$$P_k = \frac{2}{1+\dfrac{2^k-1}{2^{k-1}-1}\cdot\dfrac{C_{k-1}}{C_k}\cdot\dfrac{1-P_{k-1}}{P_{k-1}}} \quad \text{for } k \geq 3, \qquad Q_k = \frac{1-P_k}{2-P_{k+1}} \quad \text{for } k \geq 0.$$

Now we have some idea about how frequently should we **Pass** and how frequently should we make the 1[st] step when facing the last bid B_k from the partner. The formulas highly depend on the C_k's that, in their turn, depend on the particular way of scoring in bridge. For instance, if the contract 1♣ (made) would score as a grand slam and other contracts would score as a part score contract, then C_1 should be definitely greater than 3/4. (Do not forget that our opponents promised to be silent.) It looks difficult to explicitly find the C_k's, however, we can take them from practice. We took about 3000 hands played by Benito Garozzo, regularized the data obtained taking into account that the opponents are silent, and arrived at the following values for C_k's:

Pass	1♣	1♢	1♡	1♠	1**nt**	2♣	2♢	2♡	2♠	2**nt**	3♣	3♢
0.4	0.008	0.012	0.018	0.027	0.04	0.02	0.021	0.032	0.033	0.01	0.011	0.012

3♡	3♠	3**nt**	4♣	4♢	4♡	4♠	4**nt**	5♣	5♢	5♡	5♠
0.019	0.02	0.092	0.001	0.001	0.078	0.078	0.001	0.011	0.011	0.001	0.001

[6] In fact, this depends on the properties of the function $p(x)$ which, in turn, are some consequences of our way to calculate the score. For the above conclusion to be valid, it suffices to verify that the function $f(x) = p(x)x$ is convex, that is, $f(x) + f(x+2) \leq 2f(x+1)$ for any x. It would be too boring and bulky if we prove that this inequality is valid for the way of scoring used in bridge. Worth mentioning is that this is true for many types of scoring that do not look crazy.

Now, by the above formulas:

$P=0.7$	**Pass**	1♣	1♢	1♡	1♠	1**nt**	2♣	2♢	2♡	2♠	2**nt**	3♣	3♢
P_k	0.57	0.03	0.05	0.07	0.1	0.15	0.08	0.09	0.14	0.15	0.05	0.06	0.06
Q_k	0.22	0.5	0.49	0.49	0.49	0.45	0.48	0.49	0.47	0.44	0.49	0.49	0.49

	3♡	3♠	3**nt**	4♣	4♢	4♡	4♠	4**nt**	5♣	5♢	5♡	5♠	5**nt**
P_k	0.1	0.12	0.46	0.01	0.01	0.54	0.73	0.03	0.33	0.4	0.06	0.06	0.006
Q_k	0.48	0.58	0.27	0.5	0.68	0.37	0.14	0.58	0.42	0.31	0.49	0.47	0.63

We can see that, below 3**nt**, most of the Q_k's are close to 1/2 and the corresponding P_k's, are very small. For those Q_k's that are different from 1/2, the corresponding P_k's are relatively big and in this case Q_k is about 1/2 of $1-P_k$. This is what we call the 1/2-rule: When facing the last bid B_k from the partner, we either **Pass** (if **Pass** is worth considering) or make the 1[st] step bid with approximately 1/2 of the remaining hands, make the 2[nd] step bid with approximately 1/4 of the remaining hands, etc.

Notice that all of the above is applicable to any convention, that is, to a part of the system that deals with the bidding after a particular sequence.[7] In particular, in a forcing branch of a system, after a given bid, we should assign exactly one half of the remaining hands to each following step. We can also see that the system (until some level) tends to be forcing.

We can use the number of available sequences (say, up to the 9**nt** bid) as a good measure of the biding space left for an auction. In these terms, the 1/2-rule sounds as follows: the number of hands to be assigned to a step should be proportional to the number of available sequences left after the step.

Now we let our opponents intervene. With their bids, they can consume the bidding space left. In fact, they create an additional space, when they intervene with a **Double** or with the 1[st] step bid. If they intervene with the 2[nd] step bid, no space is consumed. When they intervene with higher bids, they really consume the bidding space: each following step divides by two the remaining space. This is really bad news. Should we ask the WBF and ACBL to totally prohibit any intervention with the 3[rd] or higher steps? Fortunately, the situation is not so sad. When our opponents intervene, they supply us with some amount of information. It may not be the information we really need, however, it can be useful. Even if they preempt thus consuming a lot of space, they exclude some suit(s) for our possible contracts, which makes our problems less heavy. All we need now is to slightly rectify the 1/2-rule:

1/2-**Rule.** The number of hands to be assigned to a bid should be proportional to the expected number of available sequences left after the bid$_\triangledown$

When dealing with possible interventions/preempts, we should simply emphasize the word "expected." We distribute the hands between the available steps following the 1/2-rule and putting the hands that make interventions/preempts less probable in lower steps proportionally to the expected number of available sequences. For other types of hands, we can foresee that the opponents can consume a lot of space. For instance, when we have a good fit or some suit (especially, one already bid by our opponents) that is very short in our hand(s), the expected number of available sequences does really change. We put those hands in higher steps and also with respect to expected space left. Clearly, if we exchange these two types of hands, we will lose some bidding space. In fact, this theme deals with the problem of WHAT TO ASSIGN, and we postpone it to consider in detail in the following sections. By now, we should notice that the 1/2-rule can be applied literally (i.e., without the word "expected") in many competitive auctions.

[7]Mathematically, there is no difference between a system and a convention.

An immediate consequence of the 1/2-rule is a well-known fact that the **Double**, being the second lowest bid, can barely carry a purely punitive meaning: you will rarely have a penalty hand and consume 1/4 of space for almost nothing if you assign a purely punitive meaning to the **Double**. However, if you **Double** with one-fourth of the hands (1/2 of those which contain some points), your partner can still convert it into penalty with a suitable hand.[8] It does mean that, in the situation when we really need information, many "incorrect" interventions by the opponents will remain unpunished. Besides, it suggests how to find which interventions/preempts are "safe." Assuming that our opponents' **Double** is not purely punitive (otherwise, they will lose anyway), we can estimate the probability of converting the **Double** into penalty and finally find a criterion for an intervention/preempt to be safe (that is, statistically to be a gain) in the following terms: the amount of information that our opponents have at the moment, the level of the intervention/preempt, vulnerability, the quality of suit, etc.[9] It turns out that the common "rule of 2 and 3" is not adequate when deciding if a preempt is safe. Moreover, if we use disciplined preempts, there are more safe preemptive hands than natural bids to be assigned. One way to solve the problem is to use some artificial calls for our preempts. However, this may make them much less effective (see ???). Another way of tackling the problem is the choice of suitable preemptive hands. Between the collections of hands carrying the same amount of information (our preempts are disciplined) — from the variety of safe preemptive hands — we can pick those which are more probable. The most probable are those having the approximate strength (whatever measure we use) expected from the auction (see ???).

In the above model of an ideal system with silent opponents, we obtained the value $P = 0.7$ of the probability of a **Pass** in the first or second position. We do think that in a real system we have to open more frequently than in the model — at least 45–50% of the time. The reasons for this are competition for a part score contract, possible help in defense (lead directors, information about distribution, etc), and making the life of our opponents more difficult or at least more interesting. Do not forget the ancient Chinese curse — May your life be made interesting! Most important is that an opening bid should carry information of better quality than an intervention whose information is normally fuzzy — when we open, we are far ahead in the information war.

When assigning meanings to bids, we have no need to distinguish which particular spot cards are involved between two hands when the spots cards are below the 8 (AKQ532 and AKQ642). Therefore it is more convenient to deal with some sensible units instead of the number of hands. From this point of view, we should be more careful with the most probable hands. Once in a century we can afford to lose with a hand pattern of 11-0-2-0. However, we cannot lose everyday when we have 4-3-3-3.

We have no intention of making very precise calculations (besides it is boring); we are not looking for an ideal system/convention (how nice if we found it), as it would most probably be too complicated. Nevertheless, the 1/2-rule when taken into account will help us to be close to a good system/convention that describes hands (when needed, of course) in a sufficiently exact way.

If we do not follow the 1/2-rule in the lowest step by 10%, it is a catastrophe: we will have 5% of all sequences that will cause us problems. If we do not follow the 1/2-rule in some high step, say in the 9$^{\text{th}}$ step, by 25%, we collect only problematic sequences of 1%. So, not following the 1/2-rule in lower steps makes a system so far from optimal that no further attempt to solve the created problems can bring us to a satisfactory position. This can be compared with simultaneously consuming thousands of dollars and economizing pennies when we do not follow the 1/2-rule and then try to optimize the system in some sequences, especially in those where the problems are becoming too difficult to solve.

[8] Surely, it is better to assign to the **Double** that half of the hands with some points that makes it more probable converting into penalty.

[9] We will deal with this theme in detail in the subsequent sections, see ???.

It is an illusion that using standard methods we have a satisfactory description — they are more likely to consume huge amounts of bidding space. We can even wonder why they often lead to reasonable contracts. The explanation is simple: a wide range (in any sense of the word) frequently covers the defects of the methods. The difference is visible only in some relatively rare hands, since most games are easy to reach with any system. True, the great players have very good results when using standard methods — we should note though, usually with a lot of artificial gadgets or agreements to plug those holes.

Most existing systems do not follow the 1/2-rule. For instance, the openings in SAYC are far from optimal. The probability of **Pass** is far different from 1/2 (about 63%). The opening bids 1♣ and 1♢ have almost the same probabilities (each about 10%). The opening bid 1♠ is a bit more probable than the opening bid 1♡ (each about 5%). The opening bid 1**nt** has probability about 7%.

If you have ever tried to construct a system over the standard 1♠ opening, you have noticed that there is no way to get a satisfactory one (compared, say, with the 1♡ opening). There are a number of unsolvable problems: Sometimes, it is better to play 1**nt**, therefore, the forcing 1**nt** is not a good idea. In order to find a ♡-fit (for a possible game in hearts), you need to check for both 4-4 and 5-3 ♡-fits and, even being forcing, 1**nt** does not help much in many very typical cases. Good play or bidding judgment can make up for some of these cases.

The 2♣ opening is another obvious problem in SAYC: "During at least 70 years of practice, no satisfactory improvement of it has been invented." — Sergei Kustarov. We have heard from advocates of the 2♣ opening that it is better defended from preempts than the Precision 1♣ opening, since it is more dangerous (true!) to intervene on the level 2. No comments!

Since it is difficult to collect a good set of statistics that compares different systems, it is not easy to prove that SAYC, just by its openings, should lose to almost any system balanced in the sense of the 1/2-rule ... and lose a lot.

Example 2.1. Major Diamond System. Openings bids on the first and second hands.

1♣: 1. 12^{+}–14, balanced
    2. 15+
1♢: 10–14, 5+**M**; if 10–12^{-}, then no two-suiter and no 7-card
1♡: 10^{+}–15^{-}, 4=♡, 4−♠, not balanced
1♠: 11–15^{-}, 3−♡, 4=♠, not balanced
1**nt**: 1. 8^{+}–12^{-}, 5+♡, 5+♠
    2. 12^{-}–15^{-}, 5+♢, 3−♡, 3−♠; if 5=♢, then 4+♣
2♣: 12^{-}–15^{-}, 5+♣, 4−♢, 3−♡, 3−♠; if 5=♣, then 4=♢
2♢: 6+**M**, weak (together with 2**nt**/3♡/3♠ includes 10–12^{-}, 7+**M**)
2♡/♠: 8^{+}–12^{-}, 5+♡/♠, 5+**m** (nonvulnerable can be 4=**m** with decent suits)
2**nt**: 1. (6)7+♣, good preempt
    2. (6)7+**M**, bad preempt (together with 2♢/3♡/3♠ includes 10–12^{-}, 7+**M**)
3♣: 8^{+}–12^{-}, 5+♣, 5+♢
3♢: (6)7+♢, good preempt
3♡/♠: (6)7+♡/♠, good preempt (together with 2♢/2**nt** includes 10–12^{-}, 7+**M**)
3**nt**: 7+**m**, broken suit, 4-level preempt
4♣/♢: 7+♡/♠, 6.5+ tricks, 2–3 controls, no void (better than opening 4♡/♠)
4♡/4♠/5♣/5♢: 7+♡/♠/♣/♢, preempt
4**nt**: 5+♣, 5+♢, preempt

The word “balanced” means 4-3-3-3 or 4-4-3-2 or 5**m**-3-3-2 pattern. The hcp’s indicated serve for typical hands of the distribution in question. Otherwise, the hand should be upgrated/downgrated. For instance, the hand ♠AQxxxxx-♡Qx-♢Kxx-♣J contains true 12 hcp with 7=♠, whereas the hand ♠Qxxxxxx-♡AQx-♢KJ-♣x contains 11 hcp and only 6^+♠.

In the subsequent sections we will discuss the choice of these openings$_\triangledown$

The known examples of following the 1/2-rule are relatively rare and appear mostly in situations where too little bidding space is left and the problems are very clear. In any example we can give in this section, we have to use as well some principles described in further sections. Therefore, we took mostly the situations where the bidding space left is so limited that we can “calculate” the “unique” possible convention (not considering conventions that are very far from optimal). The examples are intended to show how good can be used a very limited space left. We will be back to them when discussing the principles involved.

Example 2.2. Un-double or “Pass asks to Double.” A wonderful convention in the forcing pass situation (i.e., when we “own” the auction) was invented by Benito Garozzo and Dano DeFalco. The idea “**Pass** asks to **Double**” is most exciting. Once indicated it produces the rest of the convention with very little to memorize.

Pass: asks to **Double** either for penalty **Pass** or for showing a very strong (in the sense of offensive strength) hand if a bid follows. When the other partner thinks that it is better to play even opposite a weak or penalty orientated hand, he bids instead

Double: asks partner to bid but can accept a penalty **Pass**

Bid: assumes neither of the above, i.e., he does not seek for the partner’s opinion about penalty and his hand is offensively stronger than that for **Double** but not very strong

We would like to compare the Un-double convention with a couple of other conventions in the forcing pass position. To this end we will measure the strength of a hand as offensive strength “minus” defensive strength. For the first partner it varies from 0 to 3: 0 means either minimum or lack of controls or a penalty oriented hand; 1 and 3 likely express high card strength (3 is much stronger); and 2 is likely distributional strength. As we see, it is not exactly a one-dimensional measure of strength. Similarly, the strength for the second partner varies from 0 to 2: 0 corresponds to either minimum or to lack of controls or to a penalty oriented hand; 2 designates a strong hand; and 1, something in between. Thus, the first partner having strength 1 invites the second one to bid above the opponents’ bid if the latter has strength 1 or better. We can see that the Un-double convention allows us to distinguish four levels of strength for the first partner and three levels of strength for the second one. It can be described as above.

`Un-double convention`

Pass: 0 or 3, asks to **Double**
- **Double**: 0–1
  - **Pass**: 0
  - **Bid**: 3
- **Bid**: 2

Double: 1
- **Pass**: 0
- **Bid**: 1–2

Bid: 2

`First convention`

Pass: 1–2
- **Double**: 0
  - **Pass**: 1
  - **Bid**: 2
- **Bid**: 1–2

Double: 0
- **Pass**: 0–1
- **Bid**: 2

Bid: 3

`Second convention`

Pass: 1 or 3
- **Double**: 0
  - **Pass**: 1
  - **Bid**: 3
- **Bid**: 1–2

Double: 0
- **Pass**: 0–1
- **Bid**: 2

Bid: 2

Leaving aside the auctions in which the opponents get **Double**, we obtain four types of auction: **Pass-Double**/**Bid**, **Pass-Bid**, **Double-Bid**, **Bid**. In terms of strength for both partners they show (3, 0–1), (0 or 3, 2), (1, 1–2), (2, 0–2), respectively. Let us consider two other conventions. The above four types of auction provide strengths (2, 0), (1–2, 1–2), (0, 2), (3, 0–2) for the first convention and (3, 0–1), (1 or 3, 1–2), (0, 2), (2, 0–2) for the second one. We can see that in the sequence **Pass-Bid** neither partner knows the exact level of strength of the other partner. This creates a problem of determining an adequate level for the final contract.[10] In some of the other nontrivial sequences, both know the exact level of strength. Informatively, the last two conventions are equivalent to the Un-double convention. Nevertheless, for the sake of optimality, it is never good to break informational equilibrium between sequences leading to the same bids.

Of course, the convention can be applied several times if the opponents continue preempting. Also, it seems that the Un-double convention creates less ethical problems than most of the conventions in use.

An explicit example: Using the Un-double convention, after the auction 1♡-(3♠)-**Double**(negative)-(4♠), red versus white, we **Pass** with ♠Qx-♡KQJxx-♢Qx-♣AQxx or ♠xx-♡KQJxx-♢x-♣KQJxx (meaning 0) and with ♡KQJxxx-♢Kx-♣AQJxx (meaning 3), we **Double** with ♠Kx-♡KQJxx-♢Kx-♣AQxx or ♠x-♡KQJxx-♢Kx-♣KQJxx, and we **Bid** 5♣ with ♠x-♡Axxxxx-♢x-♣KQJxx$_{\bigtriangledown}$

Example 2.3. Modified Richie Convention over 1m-1M/2M. The situation in question assumes some shortness in the case of a 3-card raise — by necessity a singleton, when minimum. Please do not read closely the following general description of the convention:

- 1st **step**: asks (consider also 3**M** bid)
    - 1st **step**: 1. minimum, 4+**M**, shortness in the other **m**/**M** (for **M**=♡/♠)
      2. maximum, 3=**M**
        - 1st **step**: asks (GF for 1.)
            - 1st **step**: maximum, 3=**M**, shortness in the other **M**/**m** (for **M**=♡/♠)
            - 3**M**: maximum, 3=**M**, shortness in the other **m**/**M**(for **M**=♡/♠)
            - **another**: minimum, 4+**M**, shortness in the other **m**/**M** (for **M**=♡/♠)
        - 2nd **step**: invitational, like shortness in the other **M**/**m** (for **M**=♡/♠)
            - 3**M**: 1. minimum, 4+**M**, shortness in the other **m**/**M** (for **M**=♡/♠)
              2. maximum, 3=**M**, shortness in the other **m**/**M** (for **M**=♡/♠)
            - **another**: maximum, 3=**M**, shortness in the other **M**/**m** (for **M**=♡/♠)
        - 3**M**: to play
    - 2nd **step**: minimum, 3=**M**
        - 1st **step**: asks
            - 3**M**: shortness in the other **M**/**m**(for **M**=♡/♠)
            - **another**: shortness in the other **m**/**M** (for **M**=♡/♠)
        - 3**M**: to play
    - 3rd **step**: minimum, 4+**M**, shortness in the other **M**/**m**(for **M**=♡/♠)
    - 3**M**: minimum, 4+**M**, no shortness
    - 5th **step**: maximum, 4+**M**, no shortness, no good source of tricks in the **m**
    - 4**m**: maximum, 4+**M**, good **m** (source of tricks)
    - 4 in the other **m**: maximum, 4+**M**, shortness in the other **M**
    - 6/8th (for **M**=♡/♠) **step**: maximum, 4+**M**, shortness in the other **m**
    - 4**M**: maximum, 4+**M**, good **m** (source of tricks), shortness in the other **M**/**m** (for **M**=♡/♠)

[10] When one partner knows the exact level of the strength of another, he can take the initiative and investigate a contract on an adequate level.

2–4$^{\text{th}}$ **steps**: "long" suit game try, naturally (**2nt** means ♠ in the case of 1**m**-1♡/2♡)
3M: invitational special
  Pass: 1. any minimum
    2. maximum, 3=**M**, shortness in the other **M**/**m**(for **M**=♡/♠)
  another: 1. maximum, 3=**M**, shortness in the other **m**/**M** (for **M**=♡/♠)
    2. maximum, 4+**M**

Seems Greek? No way you will play it, since it looks hard to memorize? This time we will make easier your job of reading it and we bet that you will find there is almost nothing to remember.

First you should know that you are able to investigate: the type of raise (3-card or 4-card), maximum or minimum, where there is a shortness, and help in some suit (for a game or slam) — all this below 3**M**. The opener can also show a good suit or a singleton in the case of maximum with a 4-card raise — this will be above 3**M**. The responder makes the "long suit" game/slam tries with steps 2–4 quite naturally, except that the **2nt** bid shows ♠ after 1**m**-1♡/2♡. There are only two more bids by the responder at the stage of 1**m**-1**M**/2**M**: the 1$^{\text{st}}$ step bid and the 3**M** bid. Both are designed to study the type of raise, the 3**M** bid is invitational and serves to exclude form the 1$^{\text{st}}$ step bid some unsuitable hands, whereas the 1$^{\text{st}}$ step bid includes all GF hands (except those you prefer to bid via "long suit" tries) and most invitational ones.

After the 1$^{\text{st}}$ step bid by the responder, the opener clarifies the raise by bidding — above 3**M** with 4-card **M** and maximum — with the following steps:

- 3**M**: minimum, 4+**M**, no shortness
- 5$^{\text{th}}$ step (1 step above 3**M**): maximum, 4+**M**, no shortness, no good source of tricks in the **m**
- 4**m**: maximum, 4+**M**, good **m** (source of tricks)
- 4 in the other **m**: maximum, 4+**M**, shortness in the other **M**
- 4**M**: maximum, 4+**M**, good **m** (source of tricks), a specific shortness (not defined yet)
- 6/8$^{\text{th}}$ (for **M**=♡/♠; the remaining bid above 3**M** and below 4**M**) **step**: maximum, 4+**M**, shortness in the other **m**

Easy to remember — the remaining shortness for the remaining bid. Notice you never bid naturally your shortness and always bid naturally your good minor.

The steps below 3**M** describe 4-card raises with minimum and a singleton and 3-card raises. There are only 3 such steps:

- 3$^{\text{rd}}$ **step**: minimum with 4+**M** and a specific shortness (not defined yet)
- 2$^{\text{nd}}$ **step**: minimum with 3=**M**
- 1$^{\text{st}}$ **step**: either minimum with 4+**M** and the other specific shortness (not defined yet) or maximum with 3=**M**

We will postpone for a minute the "difficult" problem of which specific shortness to show. After the 3$^{\text{rd}}$ step everything is clear. After the 2$^{\text{nd}}$ step, the responder can: ask about shortness by making the 1$^{\text{st}}$ step, place a contract (3**M**, 3**nt**, 4**M**), or bid something else assuming slam investigation in the Major if he is not interested in knowing the shortness. When being asked about shortness, the opener makes the 1$^{\text{st}}$ step bid to show a specific shortness and any other bid with the other specific shortness (both are not defined yet) — this clearly is a GF auction in the case of "the other specific shortness." All that remains is to discuss how to bid over 1**m**-1**M**/2**M**-1$^{\text{st}}$ **step**/1$^{\text{st}}$ **step** and when we use the sequence 1**m**-1**M**/2**M**-3**M**.

Over 1**m**-1**M**/2**M**-1$^{\text{st}}$ **step**/1$^{\text{st}}$ **step**, the responder has two ways to clarify the variants of the opener holding. Planning to play a game opposite "minimum with 4+**M** and the other specific shortness," the responder asks with the 1^{st} step. The opener describes the holding "minimum with 4+**M** and the other specific shortness" by the bids strictly above 3**M**. Otherwise, the opener shows "maximum with 3=**M**" and a specific shortness (in this case it can be an empty doubleton) with the remaining two bids. If the responder dislikes the holding "minimum with 4+**M** and the other specific shortness" and likes the holding "maximum with 3=**M** with the opposite shortness," then the 2^{nd} step bid is used — obviously with invitational values in the responder's hand. In this case the opener bids 3**M** when holding "minimum with 4+**M** and the other specific shortness" or "maximum with 3=**M** and the same specific shortness." Otherwise, the opener bids something above 3**M** thus showing "maximum with 3=**M**" and the "nice" shortness liked by the responder. Over 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**, we obtain:

$1^{\mathbf{st}}$ **step**: 1. minimum with 4+**M** and the other specific shortness (not defined yet)
2. maximum with 3=**M**
- $1^{\mathbf{st}}$ **step**: asks (GF for 1.)
  - $1^{\mathbf{st}}$ **step**: 2. with a specific shortness (not defined yet)
  - 3**M**:: 2. with the other specific shortness (not defined yet)
  - **another**: 1.
- $2^{\mathbf{nd}}$ **step**: invitational, likes the shortness opposite to the "other specific shortness"
  - 3**M**: 1. minimum with 4+**M** and the other specific shortness
    2. maximum with 3=**M** and the other specific shortness
  - **another**: maximum with 3=**M** and the shortness opposite to the "other specific shortness"
- 3**M**: to play

What should the responder bid when disliking both "minimum with 4+**M** and the other specific shortness" and "maximum with 3=**M** and the "nice" shortness" (what a willful child!)? This is what the sequence 1**m**-1**M**/2**M**-3**M** is designed for: over 1**m**-1**M**/2**M**-3**M** the responder expects to get from the opener the following reaction:

Pass: 1. any minimum
2. maximum with 3=**M** and the (no more) "nice" shortness

another: 1. maximum with 3=**M** and "the other specific shortness"
2. maximum with 4+**M**

Finally, we "resolve" the "difficult" problem of specifying shortness. First, for the sequence 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$3^{\mathbf{rd}}$ **step**. The last 3^{rd} step bid is simply 3♢/♡ for **M**=♡/♠. We will use the following "rule": *The shortness should be never shown naturally. Our assigning shortness does not depend on which is the minor and does depend on which is the Major.* This leaves the only way to specify it: the shortness in the other **M**/**m** (for **M**=♡/♠). Knowing the shortness assigned to the sequence 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$3^{\mathbf{rd}}$ **step**, the remaining shortness belongs to the first meaning of the last bid in the sequence 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$1^{\mathbf{st}}$ **step**, i.e., the shortness in the other **m**/**M** (for **M**=♡/♠). This immediately implies what shortness to assign in the case of the sequence 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$1^{\mathbf{st}}$ **step**-$2^{\mathbf{nd}}$ **step** and thus in the case of the sequence 1**m**-1**M**/2**M**-3**M**.

What about the sequences 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$1^{\mathbf{st}}$ **step**-$1^{\mathbf{st}}$ **step**/$1^{\mathbf{st}}$ or $2^{\mathbf{nd}}$ **step**? Simply apply the "rule" and you will arrive at what is written in Greek at the very beginning of this example.

Dealing with the sequences 1**m**-1**M**/2**M**-$1^{\mathbf{st}}$ **step**/$2^{\mathbf{nd}}$ **step**-$1^{\mathbf{st}}$ **step**/$1^{\mathbf{st}}$ **step** or **higher steps**, we should be more careful. Assuming that "higher steps" is the 2^{nd} step bid, we apply the "rule" and arrive at the result:

3**M**: shortness in the other **M**/**m** (for **M**=♡/♠)
“higher steps”: shortness in the other **m**/**M** (for **M**=♡/♠)

As to the sequence 1**m**-1**M**/2**M**-1$^{\mathbf{st}}$ **step**/4**M**, we do not apply the “rule” because it is not applicable. What is applicable here is pure logic. In the case of maximum with 4+♡ we have the following bids over 1**m**-1♡/2♡-2♠:

3♠: maximum, 4+♡, no shortness, no good source of tricks in the **m**
3**nt**: maximum, 4+♡, shortness in the other **m**
4**m**: maximum, 4+♡, good **m** (source of tricks)
4 in the other **m**: maximum, 4+♡, ♠ shortness
4♡: maximum, 4+♡, good **m** (source of tricks), a specific shortness

In the case of maximum with 4+♠ we have the following bids over 1**m**-1♠/2♠-2**nt**:

3**nt**: maximum, 4+♠, no shortness, no good source of tricks in the **m**
4**m**: maximum, 4+♠, good **m** (source of tricks)
4 in the other **m**: maximum, 4+♠, ♡ shortness
4♡: maximum, 4+♠, shortness in the other **m**
4♠: maximum, 4+♠, good **m** (source of tricks), a specific shortness

After the 3**nt** bid for **M**=♡ and after the “4 in the other **m**” bid for **M**=♠, we have more space for showing the good minor (if any) later. This explains the meaning 1**m**-1**M**/2**M**-1$^{\mathbf{st}}$ **step**/4**M**: maximum, 4+**M**, good **m** (source of tricks), shortness in the other **M**/**m** (for **M**=♡/♠).

How does it work in a real game? For instance, over 1♢-1♡/2♡, remembering that the 3♡ bid is not so easy, we would like to restore its meaning. So, first we consider the sequence 1♢-1♡/2♡-2♠/3♢: minimum with 4+♡ and a specific shortness. Can it be ♣ shortness (it seems not natural)? No! If we change our minor for ♣, it becomes natural! Therefore, it shows ♠ shortness. Hence, the shortness in the first meaning of the bid 2**nt** in the sequence 1♢-1♡/2♡-2♠/2**nt** has to be in ♣. Next, 1♢-1♡/2♡-2♠/2**nt**-3♢ asks to bid above 3♡ only with maximum, 3=♡, and ♠ shortness. Finally, 1♢-1♡/2♡-3♡ invites to the ♡ game if the opener has maximum with 3=♡ and ♣ shortness or maximum with 4+♡.

Larry promises to eat his hat if you do not think this is now clear.

We are old, lazy, and our teeth are bad. We cannot masticate for you each time. Please do your job next time!

There is one problem hand. You cannot always correctly bid the Major game in the following case: You would like to be in the game opposite an opener with minimum, 3-card **M**, and shortness in the other **M**/**m** (for **M**=♡/♠). You would not like to be there opposite an opener with minimum, 3-card **M**, and shortness in the other **m**/**M** (for **M**=♡/♠). Another questionable feature is that we give away some information with bids above 3**M** (the responder can have no slam intention). However, it happens relatively rare. On the other hand, being ready to play the Major game in the case of the opener being maximum with 4+**M** and having extras — such as shortness and/or good minor — we are close to the slam zone. If we do not “give this information away,” there is not much space for a slam try below 4**M**.

Larry’s hat.
Sasha does not have one any more.

We believe that later, after introducing some principles, the presented convention will become more logical. Speaking seriously, we do not think that it is playable by just anyone▽

Combinatorial Methods. Many things we are dealing with have a combinatorial nature. When the bidding space left is very limited, the so-called combinatorial methods are usually helpful. Frequently, these methods allow us to "calculate" the "unique" possible (and optimal) convention in the sense that there is no other choice if we are not to lose a lot of space.

A well-known combinatorial approach involves Fibonacci numbers. Let us take a position where one partner (Crew) has to describe his hand for the other one (Captain) and the description should be finished below 3**nt**. We assume that in principle the Captain would like to know the pattern of the Crew's hand as exact as possible. In particular, the Captain looks for a fit. If 3♡ is the cheapest call available for the Captain, then, with the bids 3♠ and 3**nt**, the Crew is able to describe 2 hands (units). If 3♢ is the cheapest call available for the Captain, then, with the bids 3♡, 3♠, and 3**nt**, the Crew is able to describe 3 hands. If 3♣ is the cheapest call available for the Captain, then the Crew is able either to bid 3♢ in response (as we know, the 3♢ bid can contain 2 hands) or, with the bids 3♡, 3♠, and 3**nt**, to describe 3 more hands. Totally, 2+3=5 hands. We arrive at the well-known Fibonacci numbers: If the Captain has n available steps (including 3**nt**), then the Crew can describe F_n hands, where $F_0 = 0$, $F_1 = 1$, $F_2 = 1$, $F_3 = 2$, $\ldots$, $F_{i+2} = F_{i+1} + F_i$, $\ldots$ For example, after the opening 1**nt** by the Crew, in the auction not higher than 3**nt**, the Crew is able to describe 55 hands (say, 55 exact hand patterns). It is well known that $F_n = \frac{1}{\sqrt{5}} \cdot \left(\left(\frac{1+\sqrt{5}}{2}\right)^n - \left(\frac{1-\sqrt{5}}{2}\right)^n\right)$. Approximately, $F_n = 0.447 \cdot \big(1.618^n - (-0.618)^n\big)$. The exponent 1.618 is quite different from the exponent 2 given by the 1/2-rule. So, in the above auctions we do lose bidding space. Moreover, after the description is over, we will need an additional space to set a trump.

It is clear why we have lost the space: the Captain was always making the 1st step bid. The solution is easy: the last call by the Crew usually carries some information about the length of 1 or 2 (or 3) suits. Then the Captain can bid:

1st step: still cannot see a fit (or would not like to show), asks for better description that helps to find a fit
2nd step: sets some explicit trump, asks for better description of the hand pattern
3rd **step**: sets some other explicit trump (a priori, this fit should be less probable than the previous one), asks for better description of the hand pattern
Etc

The above scheme deals with a GF auction. Dealing with different situations, the Captain should be careful about possible responses by the Crew not letting the auction go overboard. So the Captain makes his 1st step bid thus establishing some scheme of responses — some hand types to be shown with high responses. If those high responses are not acceptable, the Captain makes his 2nd step bid thus establishing another scheme of responses — the previously mentioned hands will be shown with lower responses and some other specific hands, with high ones. The Captain can also make his 3rd step bid ... etc. The latter approach was illustrated in Example 2.3. It is advisable to use the 1/2-rule as a guide when composing the meanings of the steps by the Captain and the corresponding schemes of responses. The structure presented reasonably assumes that the 1st step bid by the Captain includes most of the GF hands so that the next steps serve to solve remaining problems. We will study in detail the idea of non-primitive captaincy in the subsequent sections.

Combinatorial methods can also be applied to transfer bids. First, transfers in their typical form are by no means following the 1/2-rule but they are still more optimal than the primitive approach. One-step transfers are like short Pinocchio thoughts. Probably two-step transfers (such as South-African transfers) are more thoughtful but they are rarely used. In order to "improve" the one-step transfers, i.e., to make them follow the 1/2-rule, it seems better to apply the transfers that are not "orders" for the partner. The best is when the partner should transfer in exactly 1/2 of cases.

We would like to list some types of one-step transfers and to see some useful combinations of them. In what follows the numbers denote some level of strength (suitable to the case) for both partners:

`Simple one-step`

- transfer to the 1^{st} **step**: 0–1
  - 1^{st} **step**: 0
    - **Pass**: 0
    - **another**: 1
  - **another**: 1

`Two-way one-step`

- transfer to the 1^{st} **step**: 0 or 2
  - 1^{st} **step**: 0
    - **Pass**: 0
    - **another**: 2
  - **another**: 1

`Extended two-way one-step`

- transfer to the 1^{st} **step**: 0 or 2
  - 1^{st} **step**: 0
    - **Pass**: 0
    - **another**: 2
  - **another**: 1
- 1^{st} **step**: 1

There is a way to combine a simple one-step transfer with an extended two-way one-step transfer:

- transfer to the 1^{st} **step**: 0–1
  - 1^{st} **step**: 0
    - **Pass**: 0
    - **another**: 1
  - **another**: 1
- transfer to the 2^{nd} **step**: 0 or 2
  - 2^{nd} **step**: 0
    - **Pass**: 0
    - **another**: 2
  - **another**: 1
- 2^{nd} **step**: 1

For example, after the auction 1♠-(2♡) we can apply this combination of the one-step transfers.

- **2nt**: 5+♣, invitational+
  - 3♣: weak
    - **Pass**: invitational
    - **another**: GF
  - **another**: strong
- 3♣: 5+♢, either competitive or GF
  - 3♢: weak
    - **Pass**: competitive
    - **another**: GF
  - **another**: strong
- 3♢: 5+♢, invitational

Clearly, there are many other useful combinations of transfers ...

As we have seen, the 1/2-rule serves as a good guide when applying the combinatorial methods▽

Exercise. Feature Showing Convention over a weak 2M opening. Applying the above combinatorial methods compose a primitive feature showing convention over a weak 2**M** opening. You have to distinguish minimum and maximum. With maximum you have to show a side 4-card (which can be also major), a side feature, and a full **M**. Also do not forget to (statistically) right-side the 3**nt** contract. The answer follows▽

"Nothing to remember." Sancta Simplicity Principle. A system/convention cannot be too complex. We should follow the principle of the "Sancta Simplicity." Therefore, the ideas involved in composing a system/convention have to be relatively easy to memorize, homogeneous, and applicable to many situations. Trying to be very precise and too complex can lead to major disasters in the heat of battle and the more complex the system/convention, the more likely (for most of us mortals) we will have a disaster.

During card play experts are able to solve multi-variant problems. Why should they be so lazy in an auction? If the principles are easy to memorize, but some work is needed to produce from them an explicit convention, then why is this not acceptable? When we have developed a habit to think in terms of those constructions — it is nothing to really remember.[11] It is worth mentioning that a good system/convention simplifies some of the difficult work of looking for the best auction — this work was done beforehand, when the convention was composed. A well-thought system/convention saves us from

[11] This is why it is necessary to understand the ideas and the logic of the system/convention and how the involved principles are functioning. Sometimes we can also use simple "nonsense" rules serving to memorize something not determined by the logic.

the necessity to "invent a bicycle" during the auction. It is true that working too hard in an auction can cause us to get tired and weaken the card play. On the other hand, what you lose in an auction is much more important and, in most cases, no card play can compensate for it. Let us be more clever in auction also. Simplicity should be Sancta but not Stupid$_\triangledown$

Example 2.4. Transfer Lebensohl (also known as Rubensohl, Jeff Rubens originally)**.** The following convention illustrates the above Combinatorial Methods and the Sancta Simplicity Principle. It is applicable to all lebensohlian positions. Let us consider first the position (2♠)-**Double**(takeout)-(**Pass**). The space left allows us to:

- Run to ♣/♢/♡ with a weak hand
- Show 5+**m**, 4+♡ with good invitational hand
- Distinguish the following GF hands:
  - ⋄ without minor 5-card, without ♡ 4-card, and without ♠-stopper
  - ⋄ without minor 5-card, without ♡ 4-card, and with ♠-stopper
  - ⋄ without minor 5-card, with ♡ 4-card, and without ♠-stopper
  - ⋄ without minor 5-card, with ♡ 4-card, and with ♠-stopper
  - ⋄ 5+**m** one-suiter, without ♡ 4-card (a 4-card in the other minor is possible), without ♠-stopper
  - ⋄ 5+**m** one-suiter, without ♡ 4-card (a 4-card in the other minor is possible), with ♠-stopper
  - ⋄ 5+**m**, 4=♡, without ♠-stopper
  - ⋄ 5+**m**, 4=♡, with ♠-stopper
  - ⋄ 5+♡ one-suiter (a minor 4-card is possible), without ♠-stopper
  - ⋄ 5+♡ one-suiter (a minor 4-card is possible), with ♠-stopper
  - ⋄ 5= - 5= two-suiter
  - ⋄ 6+ - 5+ two-suiter

It follows the verbal description of the convention:

- We usually transfer to the best suit, except of the GF hand with 5+♢, 4=♡ with which we bid 2**nt** (transfer to ♣). After the transfer:
  - ⋄ Pass with a weak hand
  - ⋄ 3♠/**nt** shows GF one-suiter without/with a ♠-stopper
  - ⋄ Something on level 4 which shows a GF two-suiter 6+ - 5+ (6 in the suit of the transfer) or 7+♡
  - ⋄ 3♢ with 5+♣, 4+♡, and a good invitational+ hand
  - ⋄ 3♡ (after transfer to ♣) with 5+♢, 4=♡, GF
  - ⋄ 3♡ (after transfer to ♢) with 5+♢, 4+♡, and a good invitational hand

  In the sequel, the bid 3♠ means either lack of a ♠-stopper (it can also show a good hand: later this will be clear) or indicates some fit (it will be clear later). The 3**nt** bid shows a ♠-stopper.
- In the case of a GF hand, having no 5+card, we bid 3♡/♠/**nt** thus showing if we have a ♡ 4-card and, if no, whether we have a ♠-stopper
- To show a GF two-suiter 5= - 5=, we bid it on level 4

In this way, we obtain the following convention:

(2♠)-Double-(Pass)

2nt: 1. weak with ♣
2. 5+♣, 4+♡, good invitational+ hand
3. 5+♢, 4=♡, GF
4. 5+♣, GF (if two-suiter, then 6+♣)

3♣: 1. weak with ♢
2. 5+♢, 4+♡, good invitational hand
3. 5+♢, GF (no 4=♡; if two-suiter, then 6+♢)

3♢: 1. weak with ♡
2. 5+♡, GF (if two-suiter, then 6+♡)

3♡: 4−♣, 4−♢, 4=♡, GF
- **3♠**: 3−♡, no ♠-stopper
  - **3nt**: with ♠-stopper
- **3nt**: 3−♡, with ♠-stopper
- **4♡**: 4+♡, limited
- **another**: trump is ♡

3♠: 4−♣, 4−♢, 3−♡, GF, no ♠-stopper (nothing at all)

3nt: with ♠-stopper, limited

4♣: 5+♣, 5+♢, GF

4♢: 5+♣, 5+♡, GF

4♡: 5+♢, 5+♡, limited

Over (2♠)-Double-(Pass)-3♣/(Pass)-3♢

Pass: weak with ♢

3♡: 5+♢, 4+♡, good invitational hand
- **3♠**: no ♠-stopper or trump is ♢
  - **3nt**: with ♠-stopper
  - **4♣/♢**: no ♠-stopper, good/bad hand
- **3nt/4♢/4♡**: contract to play
- **4♣**: trump is ♡

3♠: 4−♣, 5+♢, 3−♡, GF, either no ♠-stopper or a good one-suiter hand (4=♣ is possible)

3nt: 4−♣, 5+♢, 3−♡, with ♠-stopper

4♣/♢: 5+♣/♡, 6+♢, GF

Over (2♠)-Double-(Pass)-2nt/(Pass)-3♣

Pass: weak with ♣

3♢: 5+♣, 4+♡, good invitational+ hand
- **3♡**: 3+♡, invitation rejected
- **3♠**: invitation accepted, either no ♠-stopper or trump is ♡
  - **3nt**: with ♠-stopper
  - **4♣**: no ♠-stopper
- **3nt**: 3−♡, with ♠-stopper, invitation accepted
- **4♣**: 2+♣, 2−♡, invitation rejected
- **4♡**: 4+♡, limited
- **another**: trump is ♣

3♡: 5+♢, 4=♡, GF
- **3♠**: 3−♡, no ♠-stopper
  - **3nt**: with ♠-stopper
  - **4♣/♢**: no ♠-stopper, good/bad hand
- **3nt**: with ♠-stopper
- **4♣**: trump is ♡
- **4♡**: 4+♡, limited
- **another**: trump is ♢

3♠: 5+♣, 4−♢, 3−♡, GF, either no ♠-stopper or a good one-suiter hand (4=♢ is possible)

3nt: 5+♣, 4−♢, 3−♡, with ♠-stopper

4♣/♢: 6+♣, 5+♢/♡, GF

Over (2♠)-Double-(Pass)-3♢/(Pass)-3♡

Pass: weak with ♡

3♠: 4−♣, 4−♢, 5+♡, GF, either no ♠-stopper or a good one-suiter hand (a minor 4-card is possible)

3nt: 4−♣, 4−♢, 5+♡, with ♠-stopper

4♣/♢: 5+♣/♢, 6+♡, GF

4♡: 7+♡, limited

This approach works also over their 2♡ bid:

(2♡)-**Double**-(**Pass**)

2♠: weak natural
2nt: 1. weak with ♣
2. 5+♣, 4+♠, good invitational+ hand
3. 5+♢, 4=♠, GF
4. 5+♣, GF (if two-suiter, then 6+♣)
3♣: 1. weak with ♢
2. 5+♢, 4+♠, good invitational hand
3. 5+♢, GF (no 4=♠; if two-suiter, then 6+♢)
3♢: 5+♠, GF (if two-suiter, then 6+♠)
- 3♡: 2(3)−♠
  - 3♠: 4−♣, 4−♢, 5+♠, GF, either no ♡-stopper or a good one-suiter hand (a minor 4-card is possible)
  - **3nt**: 4−♣, 4−♢, 5+♠, with ♡-stopper
  - 4♣/♢: 5+♣/♢, 6+♠, GF
  - 4♡: 7+♠, a good suit and a good hand
  - 4♠: 7+♠, limited
- **another**: 3+♠, trump is ♠

3♡: 4−♣, 4−♢, 4=♠, GF
- 3♠: 3−♠, no ♡-stopper
  - **3nt**: with ♡-stopper
- **3nt**: 3−♠, with ♡-stopper
- 4♠: 4+♠, limited
- **another**: trump is ♠

3♠: 4−♣, 4−♢, 3−♠, GF, no ♡-stopper (nothing at all)
3nt: with ♡-stopper, limited
4♣: 5+♣, 5+♢, GF
4♢: 5+♣, 5+♠, GF
4♡: 5+♢, 5+♠, GF

`Over` (2♡)-**Double**-(**Pass**)-**2nt**/(**Pass**)-3♣

Pass: weak with ♣
3♢: 5+♣, 4+♠, good invitational+ hand
- 3♡: invitation accepted, either no ♡-stopper or trump is ♠
  - 3♠/4♣: maximum/minimum, no ♡-stopper
  - **3nt**: with ♡-stopper
- 3♠: 3+♠, invitation rejected
- **3nt**: 3−♠, with ♡-stopper, invitation accepted
- 4♣: 2+♣, 2−♠, invitation rejected
- 4♠: 4+♠, limited
- **another**: trump is ♣

3♡: 5+♢, 4=♠, GF
- 3♠: 3−♠, no ♡-stopper
  - **3nt**: with ♡-stopper
  - 4♣/♢: no ♡-stopper, good/bad hand
- **3nt**: with ♡-stopper
- 4♣: trump is ♠
- 4♠: 4+♠, limited
- **another**: trump is ♢

3♠: 5+♣, 4−♢, 3−♠, GF, either no ♡-stopper or a good one-suiter hand (4=♢ is possible)
3nt: 5+♣, 4−♢, 3−♠, with ♡-stopper
4♣/♢: 6+♣, 5+♢/♠, GF

`Over` (2♡)-**Double**-(**Pass**)-3♣/(**Pass**)-3♢

Pass:: weak with ♢
3♡: 5+♢, 4+♠, good invitational hand
- 3♠/3nt/4♢/4♠: contract to play
- 4♣: trump is ♠
- **another**: trump is ♢

3♠: 4−♣, 5+♢, 3−♠, GF, either no ♡-stopper or a good one-suiter hand (4=♣ is possible)
3nt: 4−♣, 5+♢, 3−♠, with ♡-stopper
4♣/♢: 5+♣/♠, 6+♢, GF▽

Answer to Exercise.

`Over 2♡`

- 2♠: asks
  - 2nt: maximum, 4+, 6+♡
    - 3♣: asks
      - 3♢: 4+♢, 6+♡
      - 3♡: 4+♣, 6+♡
      - 3♠: 4+♠, 6+♡
  - 3♣: maximum, ♣ or ♠ feature
    - 3♢: asks
      - 3♡: ♣ feature
      - 3♠: ♠ feature
  - 3♢: maximum, ♢ feature
  - 3♡: minimum
  - 3♠: maximum, full ♡
- 2nt: 5+♠, GF
- 3♣: 5+♣, GF
- 3♢: 5+♢, GF
- 3♡: preempt
- 3♠/4♣/4♢: splinter
- 3nt/4♡: to play

`Over 2♠`

- 2nt: asks
  - 3♣: maximum, 4+, 6+♠
    - 3♢: asks
      - 3♡: 4+♡, 6+♠
      - 3♠: 4+♢, 6+♠
      - 3nt: 4+♣, 6+♠
  - 3♢: maximum, ♢ or ♡ feature
    - 3♡: asks
      - 3♠: ♢ feature
      - 3nt: ♡ feature
  - 3♡: maximum, ♣ feature
  - 3♠: minimum
  - 3nt: maximum, full ♠
- 3♣: 5+♣, GF
- 3♢: 5+♢, GF
- 3♡: 5+♡, GF
- 3♠: preempt
- 4♣/♢/♡: splinter
- 3nt/4♠: to play

It is possible to improve the answer. We can: investigate singletons of the opener, find a better way of checking for possible fits, and right-side more final contracts. The presented solution is the most primitive$_\triangledown$

Exceptions for the 1/2-Rule. In conclusion, we observe that there are rare positions in which the 1/2-rule is not applicable. The 1/2-rule is based on the assumption that there will be a further auction: it refers to some "infinity" of available sequences — in particular, for "short distances," it can be easily broken. If such an auction seems impossible or has a low probability, there is no need of the 1/2-rule. Also, some other circumstances may not allow us to follow the 1/2-rule:

- A situation where there are just a few steps left and specific, important, or even inescapable necessities make us use the space in a prescribed manner. Typical examples of such situations are:
  - ◇ Invitational calls made on high level which provide a good description of the hand
  - ◇ Positions where multi-meaning or diffuseness is unacceptable (this usually concerns the lowest steps)
- Using the 1/2-rule can lead to "wrong-siding" a contract
- We have other priorities in a particular situation
- Sometimes it is hard to follow the 1/2-rule, since it makes a system/convention too complicated. There should be some ratio between our human abilities and ideal use of the space
- We do not need any bidding space

Otherwise, it is silly to waste bidding space$_\triangledown$

3. What to Assign

3.1. Extended Naturality

As far as we know, almost all bridge players would agree with the following statement:

- There exist many natural conventions. They can be found without any agreement

For instance, the standard lead from a doubleton (high) is natural. Statistically we will lose, if we do the contrary, but there are many exceptions of course. By similar logic, when we are strong, it is better to open 1♣, as it leaves more space to look for a slam or the best game. When we have a major, we can leave the bids 1♡ and 1♠ for the opponents as our possible contracts are higher.

Let us slightly amend the previous statements:

- There exist conventions, natural in an extended sense. They can be found without any agreement if some initial principles are recognized

In fact, calculating the RIGHT convention can take a lot of time. This is one of the reasons to have some initial principles. To some extent those principles, a priori, calculate the right convention. What does it mean "in an extended sense"? In the end, it will mean "optimal." By now, let us agree that assigning a natural[12] meaning to a bid seems to be frequently silly. Also, this usually contradicts the 1/2-rule very significantly.

In Culbertson days, before the Stayman convention was discovered, it was impossible to read the 2♣ bid over the 1**nt** opening as asking about a 4-card major. This example provides another reason for indicating initial principles or agreements.

Unfortunately, bidding without agreement based on pure logic looks barely possible in practice. "... the logic can be different for different players. This is not surprising, since Bridge is not Mathematics. It is even worse if the LOGIC turns out to be FLEXIBLE: each hand, a new revelation." — Sergei Kustarov. We have to accept that the bidding should be based on some ideas familiar to both players in the partnership.

The reader has probably guessed our simple idea: We will bid as if we use a natural system but will apply artificial calls (coded bids) thus bidding in an economical and optimal manner. The point is that we give the same information (as a natural system does) and much more, since we use the space better. Thus, the bids should involve all the aspects of re-evaluating the hands and checking how the two hands fit with each other. We have no need to discover some new type of information as everybody knows what is really needed for a good contract.[13] Our extended naturality will never lose any positive feature of the natural approach and will never waste space in the way that the natural manner does. The ONLY problem is how to code the bids.

Imagine the dialog that follows this start between a hypermodern pair:

> How could you bid 2♠ holding 6+♠? What a perverse method to show your spade suit?!
> — Sorry, but I could not bid 1**nt**, since I had no singleton ...

We will preferentially deal with the initial stages of the auction. In these stages we should take into account intervention by the opponents. So we will need the Principle of Continuity.

[12] in the primitive sense of the word

[13] When we use a natural approach, we frequently face a situation in which we have more hands that deserve a bid than the bids whose meanings are determined by "primitive naturality."

3.2. Principle of Continuity. Geometry of Hand Patterns. Classification of Hands

From the point of view of the 1/2-rule, the opening

Pass: 0–7 hcp or 13+hcp

is perfect. However, if we use it against enterprising opponents, we will miss many games as they can make a slightly preemptive bid and it can happen that we will never know the variant of the opening.

We already know that when dealing with a possible intervention it is better to use higher bids with the hands that allow us to foresee an intervention. Another way to prevent the possible interference (preemptive or otherwise) is to use the

Principle of Continuity. In the case of a possible intervention by opponents, when we assign a meaning to a call, it is usually better to have the meaning continuous in shape and in size▿

For instance, the opening

1♡: 11–15 hcp, 5+♡

is continuous in size and in shape. The opening

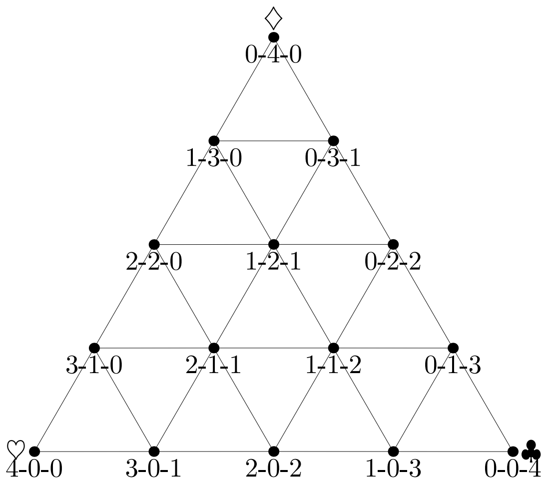
1♡: 11–15 hcp, 6+♡ or 1−♡

is continuous in size but not in shape. The bid

1**nt**: 9–11 hcp or 15–17 hcp, balanced

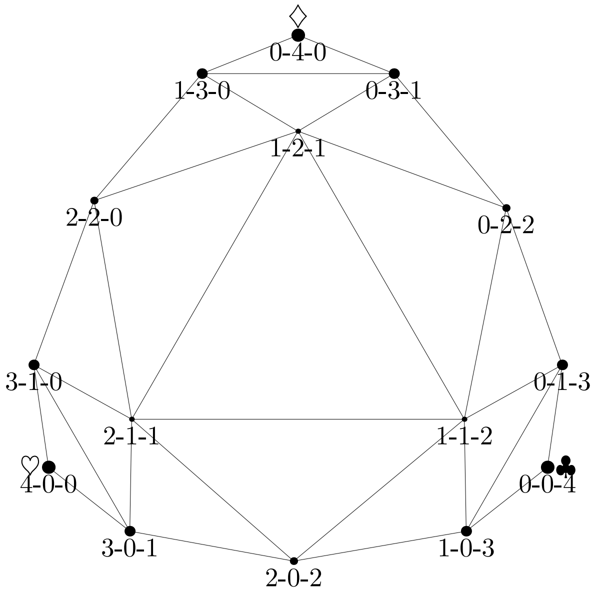
is continuous in shape but not in size, etc.

It is clear what continuity in size is. For a better understanding of the continuity in shape, we would like to visualize all the hand patterns, organizing them in some geometrical figure, the "tetrahedron of hand patterns." Since we cannot easily draw in the 3-dimensional space (in fact, we will need even more dimensions), let us simplify our situation to that of three suits, each of 4 cards. In this model, we will suppose that one suit is a "major." We can organize all the hand patterns such as 2-1-1, 1-2-1, 1-3-0, 0-0-4, etc. in some triangle (see Picture 1). When composing a system, we cut the triangle into some (continuous) pieces, each piece to be a shape of some opening or a shape of some subsequent call.

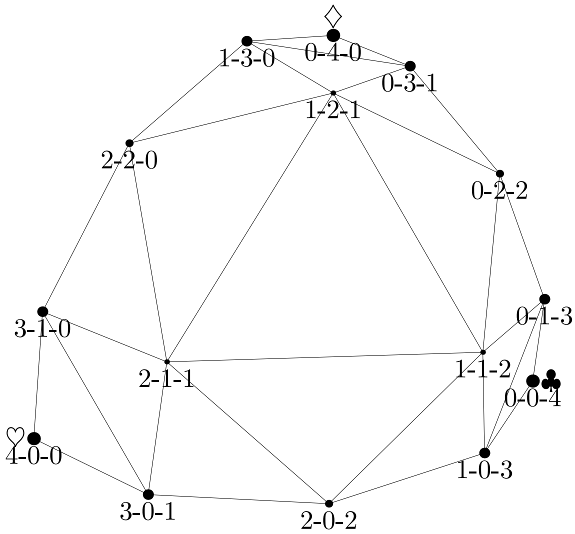


Picture 1

Notice that the probability of 1-2-1 is much greater than that of 0-4-0. We already know that for the sake of optimization the system should be more attentive to the more frequent hand patterns. Therefore, for the probabilities to be taken into account, we can try to draw the triangle of hand patterns in such a manner that a point-pattern would be surrounded by the area approximately equal to its probability. In subsequent cuttings, we can do this applying the 1/2-rule to the area of a piece. Unfortunately, the figure which appears cannot be placed into the plane because of its positive curvature (this means that it would be more adequate to place it on a spheroid). If we mark more probable hand patterns with bolder points (to indicate that the probability of the respective hand pattern is more than



Picture 2



Picture 3

the area (visible on the paper) that surrounds the point), we can draw something like Picture 2. It is better to imagine this picture being placed on some sphere. One more correction: The major is more important (somebody pays for a major fit). The last fact, when taken into account, is illustrated by Picture 3.

As an example, we can visualize the opening

1**nt**: 15–17 hcp, balanced

as a piece of the tetrahedron of the hand patterns with 15–17 hcp cut out from some of the middle part.

Another application of the tetrahedron is the visualization of LOOKING FOR A FIT. Normally for a given hand pattern, the partner has ten hand patterns without a fit. These ten form some convex part of the tetrahedron. Hence, when you indicate some piece of your tetrahedron (by your last call), those patterns of partner's hand which are still without fit can be visualized as some well defined piece of partner's tetrahedron. Moreover, these patterns are usually close to the most probable ones. Therefore, we have some idea how the last bid made changes the probabilities of partner's hands and, in our visualization, we see this as changing the geometry of partner's tetrahedron. During the auction, we register a geometrical evolution of both tetrahedrons (better to say of some pieces of them which become smaller and smaller). It would be interesting to see this MOVIE with a computer. However, we will not deal much with this geometry as we would like to leave this work for somebody younger.

We can calculate the number of dimensions involved in bridge. Each hand out of 3 has 3 dimensions of distributions (the length of the 4$^{\text{th}}$ suit in the hand is known after the length of 3 suits is known) and each hand out of 3 has 4 dimensions for strength (in each suit). A total of 21-dimensional space. To measure strength of 1 hand we should use 4 dimensions: each suit deserves its value. Moreover, each suit can be multi-valued: controls, LTC, hcp. So, we can add (at most) 24 dimensions, for a total of 45 dimensions. We highly disagree with Victor Mollo and we have a very serious complain. Why did Victor Mollo introduce some imbecile, named Hideous Hog, who only can play in 4 dimensions whereas we all play in 45? ⌣

It is well known that the suits (with honor fits) are a source of tricks (the only one until some trump suit is established). Hence, in the initial stages of the auction we should show a biddable suit. Even if you have a hope that a suit like xxxxx will be supported with AKQ in the partner's hand, it is not a fit as good as AQxxx opposite Kxx. Also the probability of such huge support is low. The best way seems to treat a xxxxx-suit as a 4-card one. Developing such a treatment, we will deal with hand patterns like 4-2.5-2-4.5.[14] So, in some sense, size and shape can substitute for each other.

At any given moment in the auction it seems a good idea to organize the hand patterns into some homogeneous groups, each group providing an adequate picture of the hand for the partner. We believe that the hands with fits (especially, with major fits) constitute a different world than those without fits.[15] Dealing with the hands lacking a known fit,[16] we distinguish first the most probable hand patterns, i.e., "relatively balanced" hands.[17] Clearly, we should take scrupulous care about them. Next is the group of more distributional hand patterns. Classifying the hand patterns, we group them also by their game potential, in particular, by their major holding that still allows a fit in a major. It is tempting to give the definition of a highly distributional hand without a known fit as one having high probability of a fit. Composing a system/convention, it seems we can "forget" about extremely distributional hands, they are too exotic. So, we arrive at some coarse general classification: relatively balanced hands, major hands, distributional hands, distributional minor hands, highly distributional hands, exotic hands. For example, at the very beginning of the auction our classification looks as follows (compare with Example 2.1):

- Balanced hands: 4-4-3-2, 4-3-3-3, 5**m**-3-3-2
- Major 5- or 6-card: 5**M**-3-3-2, 5**M**-4-2-2, 5**M**-4-3-1, 5**M**-4-4-0, 6**M**-3-2-2, 6**M**-3-3-1, 6**M**-4-2-1, 6**M**-4-3-0
- Major 4-card, unbalanced: 4**M**-5**m**-2-2, 4**M**-5**m**-3-1, 4-4-4-1, 4**M**-5**m**-4-0, 4**M**-6+**m**
- Minor hands: 5**m**-4**m**-2-2, 5**m**-4**m**-3-1, 6**m**-3-2-2, 6**m**-3-3-1, 6**m**-4**m**-2-1, 6**m**-4**m**-3-0
- Major 7-card: 7+**M**
- Two-suiter with a major: 5+**M**-5+
- Minor 7-card: 7+**m**
- Minor two-suiter: 5+♣-5+♢
- Hands of type 7-4
- Hands of type 6-5
- Exotic hands

In particular, the highly distributional hand patterns (close to the boundary of the tetrahedron), i.e., those having a high probability of a fit, are 7+ one-suiters and two-suiters 5+-5+.

In the initial stages of the uncontested auction, the partnership usually needs information about the distribution of their hands. In such an auction, the following general strategy is applicable. We study the possibility of a fit (especially in a major) and in this way obtain an information about hand patterns. If, being lucky, we have found a fit very early, i.e., on a lower level, we indicate the fit and use the remaining space to show an adequate picture of hands.[18] As a rule, we should not miss an 8-card

[14] which corresponds to the hand ♠xxxxx-♡Ax-♢xx-♣AKQx

[15] In bridge literature we can find a lot about how to bid with a fit and just a few words about the opposite case. The authors of this article are more frequently dealt with misfits — some have to pay for those lucky players who always have a fit.

[16] We are taking into account the maxima "xxx is not a fit to a 5-card."

[17] If the partner showed 6♢-5♣, the hand pattern 5♠-5♡-1♢-2♣ (in your hand) becomes balanced!

[18] With slam ambitions, we can even leave an option to reset a trump suit.

major fit and a 9-card minor fit. So, in the case of space problems, we sacrifice first of all showing minor 4-cards.

The Continuity Principle admits many very interesting exceptions (see, for instance, Example 2.2): any two-way meaning contradicts the Continuity Principle. It is true that multi-meaning can be very effective. However, it is usually unstable versus interference. This is why in the first rounds of the auction we should normally follow the Continuity Principle. No need to follow it after the 2nd round of the auction and later.

A priori, it follows from the 1/2-rule that the lower bids cannot carry information making them VERY STABLE in the case of a possible preempt by the opponents even if the preempt is not very high. Making a system VERY STABLE in its lower bids, i.e., making these bids more informative, we will face severe problems with higher bids, since they will become less informative. Moreover, no effective preempt will happen in most cases. If we hurry to immediately describe our hands when there is no serious danger of a preempt, then we are bidding like fools. Sometimes, the fear of interference is worse than any actual interference. The opponents usually have no intention of preempting and yet, they preempted us with their Pass ⌣ The fact that we are using the bidding space irrationally means that our opponents (or was it us?) consumed our bidding space[19] ... If, nevertheless, a preempt does happen, well, we have to take it and deal with it.

However, if our hand permits us to foresee a possible preempt, we should hurry with a description. How to hurry is written in the discussion devoted to the 1/2-rule: "expected number of sequences," etc.

Frequently, there is not enough space to follow the Continuity Principle well and we have to violate it. In such positions it is better to use the bids with multi-meanings in strength rather than in shape.[20] For example, after 1♠-(2♡)-3♣-(4♡) (see the Example 3.3.1 below), the opener knows about 5+♢ (competitive or GF) and it helps. If we know the strength (and no suit), then we do not know what to do: hcp do not help much in competition, suits do. We could easily escape multi-meaning by simply sacrificing the competitive variant of the 3♣ call and it would be helpful in the case of their bid (4♡). However, there will be no (4♡) bid most of the time and we just lose an option to compete.

3.3. Principle of First Priorities

Let us introduce the following extremely important principle:

• When constructing a system/convention, we FILL the lowest steps with the natural (in an extended sense) and most probable necessities we can face (in principle) at this moment in the auction.[21]

Later we will specify and detail this principle. Let us first consider the following example.

Example 3.3.1. Position 1♠-(2♡) (SAYC). Assuming that our partner has a minimal hand, let us list what we desire to inform partner of:

⋄ **Pass** if we have no safe bid. Also, **Pass** is possible if the hand can be better solved in balancing (a strong ♡ holding is a typical example — we wish partner to reopen with a **Double**)

⋄ Bid with ♠-support. Here we would like to distinguish the following features:

[19] We would guess, there are situations where our Pass can be alerted as preemptive. For example, if the opponents opened 1♠ (SAYC), they preempted themselves, and it is better not to help them with low-level intervention if we have no serious reason to bid something. They are in trouble as they have a space problem. Let them eat their position ... It would be nice to alert a Pass (just once) as preemptive ⌣

[20] With a good fit it does not matter sometimes if we bid to make or to sacrifice, as long as it is safe. On the other hand, if you have a strong feeling that your side lacks the fit, Doubling the opponents becomes an easier business.

[21] Notice that this is not with the most probable hands but with the most important problems at that moment.

◦ 3-card and 4-card supports

◦ preemptive, competitive, invitational, and GF supports (and, in the last two cases, better to show the type of the hand)

⋄ Bid a reasonable (for level 3) minor with a one-suited hand and without ♠-support, distinguishing competitive, invitational, and GF types of the hand

⋄ Show both minors without ♠-support, distinguishing competitive, invitational, and GF types of the hand

⋄ Invite to 3**nt** with ♡-stopper and without ♠-support

⋄ Force a game with a hand not listed above

It seems clear that we have to exclude the preempts based on one- or two-suited minor hands (unless we can afford to bid them on the 4-level).

First, let us look at the current primitive approach:

Pass: as described above
Double: 1. both minors (competitive, invitational, GF?)
2. something that cannot be bid higher
2♠: 3+♠ (competitive, invitational, GF?)
2nt: invitation to 3**nt** with ♡-stopper and without ♠-support
3♣: 5+♣, 2−♠ (competitive, invitational, GF?)
3♢: 5+♢, 2−♠ (competitive, invitational, GF?)
3♡: 3+♠ (preemptive, competitive, invitational, GF?)
3♠: 3+♠ (preemptive, competitive, invitational, GF?)

Looks weird! It is easy to see, neither free bids nor the Standard American approach do much better. So, we need to sacrifice something. Notice that the above 2**nt** bid has little competitive value. In many cases, this type of hand can be better solved in balancing. Sometimes, we can simply bid 3**nt**. Finally, we can hope that it can be included in **Double**: when holding a stopper in their suit, we can afford to bid without hurrying. Let us see what we gain when we sacrifice the meaning of the above 2**nt** bid.

The meaning of **Pass** is more or less clear. At this moment, we are not ready to apply the principle "first priorities first" and thus to find the meaning of **Double**, since we do not have a clear idea about our necessities yet. We definitely cannot use the bid 2♠ as a relay: the usual competitive meaning of 2♠ with ♠-fit is a must. Applying the principle of showing a fit with higher bids and hoping that the space suffices to solve most of the problems with a ♠-fit, we can see that the main problem to be solved with the bids 2**nt**, 3♣, 3♢, etc. is the problem of showing one-suited minor hands. Using the extended one-step transfer, we have a satisfactory solution for the diamond one-suiter. This removes from consideration the bids 3♣ and 3♢. As for the club one-suiter, the only available bid is 2**nt**. Clearly, one of its meanings has to be a GF type of hand with 5+♣. Therefore, we should choose which is most important: competitive hands with clubs or invitational ones. Common sense says that the invitational hands are more significant in the position. Thus, we combine the one-step transfers "simple-extended" for ♣ and ♢ suits. This is a typical construction that helps in many other cases. No doubt, the bid 3♠ has to be preemptive. Hence, for invitational+ hands with ♠-support, the only bid left is 3♡.[22]

It is better if we bid 2**nt** being careful to right-side a no-trump contract from the point of view of the ♡-lead.[23] Unfortunately, our problems are so heavy that we can afford to follow this idea only with

[22]For those who love the Bergen-type raises: In principle, it would be nice to distinguish 3- and 4-card support. However, it seems wrong to sacrifice more important necessities in favor of Bergen-type raises. At least, in our case, they are not applicable.

[23]We are allowed to bid 2**nt** with a hand that makes improbable any no-trump contract.

a GF hand.

By now, we obtain the following:

2♠: 3+♠, competitive
2nt: 1. 5+♣, 3−♢, 2−♠, invitational+
(if GF, then being careful to right-side a no-trump contract)
2. 4+♠, ♡ mini-splinter
3. 3+♠, invitational, asks for figure ♣ support
4. 5+♣, 4+♢, 3+♠, GF
3♣: Refusing invitation
Pass: 5+♣, 3−♢, 2−♠, invitational
3♢: 4+♠, ♡ mini-splinter
3♡: 5+♣, 2−♠, asks for 1/2 of ♡-stopper (or very strong), GF
3♠: 3+♠, invitational, asks for figure ♣ support
3nt: 5+♣, with ♡-stopper
another: 5+♣, 3+♠, GF
3♠: 2(1)−♣, 6+♠, weak
another: GF
3♣: 1. (5)6+♢, 2−♠, competitive
2. 3+♠, invitational, asks for figure ♢ support
3. 5+♢, 3−♣, GF
4. 5+♢, 4+♣, 3+♠, GF
3♢:
Pass: (5)6+♢, 2−♠, competitive
3♡: 5+♢, 3−♣, 2−♠, no ♡-stopper (or very strong), GF
3♠: 3+♠, invitational, asks figure ♢ support
3nt: 5+♢, 3−♣, with ♡-stopper
another: 5+♢, 3+♠, GF
3♢: 5+♢, 3(4)−♣, 2−♠, invitational
3♡: 3+♠, limit raise+
3♠: 3+♠, preempt
3nt: with ♡ stopper
4♣: 4-level ♠ support and ♣ suit
4♢: 4-level ♠ support and ♢ suit
4♡: splinter
4♠: 4+♠, preempt

Finally, we are ready to deal with **Double**. Let us list the remaining necessities in the order of their probabilities (the first ones are more probable):

⋄ 4+♣, 4+♢, 2−♠, competitive+
⋄ 5+♣, 2−♠, competitive one-suiter (3-level)
⋄ 4−♣, 4−♢, 2−♠, invitational to **3nt** with ♡-stopper
⋄ 4−♣, 4−♢, 2−♠, GF
⋄ 5+♣, 3−♢, 2−♠, GF (stands to be the dummy in a **3nt** contract)

As we will shortly see, there is no way to assign all these hands to **Double**. Therefore, we should create the list of candidates to be sacrificed:

- ∘ 5+♣, 2−♠, competitive one-suiter (3-level)
- ∘ 4−♣, 4−♢, 2−♠, invitational to **3nt** with ♡-stopper
- ∘ 4+♣, 4+♣, 2−♠, competitive

It seems a good idea to sacrifice some competitive hands first. One of the reasons is that, for such a **Double**, converting it to penalty becomes easier as it is stronger. Another reason: certain competitive hands can be also solved in balancing. The most important competitive hands are "both minors." Applying the above construction of "simple-extended" one-step transfers and assuming that **Double** basically means "both minors, competitive+" (there must be no problem with GF hands), we obtain the following convention:[24]

Double: 1. 4+♣, 4+♢, 2−♠, competitive+
(10+hcp for 2-3-4-4, assuming 12+hcp for the opening 1♠)
2. 4−♣, 4−♢, 2−♠, GF
3. 5+♣, 3−♢, 2−♠, GF
(stands to be the dummy in a **3nt** contract)
- **Pass**: penalty
- **2♠**: 3−♣, 3−♢, weak
  - **Pass**: 4+♣, 4+♢, 2(1)=♠, competitive
  - **2nt**: 4+♣, 4+♢, 1(2)−♠, invitational+
    - **3♣**: suit preference, invitation rejected
    - **3♢**: suit preference, invitation rejected
    - **3♡**: invitation accepted (usually no ♡-stopper)
    - **3♠**: 6+♠, invitation rejected
    - **3nt**: with ♡-stopper, invitation accepted
  - **3♣**: 5+♣, 4+♢, 2−♠, competitive
  - **3♢**: 5+♣, 3−♢, 2−♠, GF
    (stands to be the dummy in a **3nt** contract)
  - **3♡**: 4−♣, 4−♢, 1−♠, GF
  - **3♠**: 4−♣, 4−♢, 2=♠, no ♡-stopper, GF
  - **3nt**: 4−♣, 4−♢, 2−♠, with ♡-stopper, contract to play
- **2nt**: 1. 4+♣, weak
  2. invitational (either 4+♣ or 6+♠ or 3=♢)
  - **3♣**: 4+♣, 4+♢, 2−♠, non-forcing
    - **Pass**: 4+♣, weak
    - **3♢**: 3−♣, 3=♢, 5=♠, invitational
    - **3♡**: 4+♣, 5+♠, invitational
    - **3♠**: 6+♠, invitational
  - **another**: GF

[24] We slightly develop it in order to check that there will be no serious problems in the rest of the auction.

3♣: 1. 3−♣, 4+♢, weak
    2. GF (several hands)
    3♢: 4+♣, 4+♢, 2−♠, non-forcing
        Pass: weak
        3♡: 4+♣, 5+♠, trump is ♣ (or 3**nt**), GF
        3♠: 3−♣, 3−♢, 5=♠, no ♡-stopper, GF
        3nt: with ♡-stopper
        another: 4+♣, 5+♠, trump is ♣, GF
    another: GF
3♢: 4+♢, 5+♠, invitational
3♡: 4+♢, 5+♠, GF
3♠: 6+♠, without ♡-stopper, GF
3nt: 6+♠, with ♡-stopper, GF

Studying the convention obtained, we can see that if we extend the meaning of **Double**, we will face few unsolvable problems.

Finally, we have

Pass: 1. weak
2. 5+♣, 2−♠, competitive (3-level) values
3. 4−♣, 4−♢, 2−♠, invitational values (to 3**nt**) with ♡-stopper (typical hands are 2-4-3-4 and 2-4-4-3)
4. trap (with strong ♡-holding)$_\triangledown$

We intend to detail the "first priorities first" principle making it sufficiently formal so that it will help when we construct a system/convention for the initial stages of an auction.

Customary, each bid assumes some (relatively) safe contract, i.e., some safe place to land. It can be a part-score contract in one of the suits already shown, 1**nt**, 2**nt**, an unknown game if the meaning includes GF hands, or a sacrifice as well. We will refer to such contracts as to "safe contracts" associated to a bid. Since, by our bid, we have a safe contract, partner has a large amount of information. It is not necessarily clear after our bid which contract is assumed as safe. E.g., when we transfer to some suit, the meaning can be also "suit + support," but normally just suit.

In order to gain more bidding space, we are first looking for the aspects that make our "safe contracts" higher. It can be strength, fits (including fitting honors), etc.

The Principle "First Priorities are First" (detailed for the initial stages of auction). At a given stage of the auction, each time we create a list of our necessities ordered with respect to their importance and thus probability. The last items in the list should be the meanings we are ready to sacrifice, also ordered by importance and probability. We fill the lowest steps with the most important and probable necessities. Note that this does not mean with the most probable hands but with the most important problems.

Those hands which are better to solve with higher bids, we solve with higher bids. They are of 3 types: support (especially, major fits), distributional invitational hands (without a known fit), and wild GF distributional hands (without a known fit). We bid those hands with higher bids for the following reason: if we have a fit, they have a fit; if we have no known fit as yet but our distribution suggests a high probability of a fit, they have a fit.

The remaining are one-suited hands and "balanced" hands. They are for intermediate and lower steps. Typically, it is not easy to decide what to assign to the lowest steps. One of the possible methods is to understand what we are able to assign to the higher bids and those important hands that do not suit the higher bids we put into lowest ones — everything should be guided by the 1/2-rule, of course. The lowest bids should mostly deal with two types of hands:

a. Good invitational or GF "balanced" hands — in the sense that the hand patterns are the most probable between hand patterns without fit (especially, without a major fit). The most probable hand pattern and those close to it we can also call a NEGATIVE DOUBLE (ND-hand). It does not matter if we are able to **Double** something, it can be no intervention at all.

b. Invitational hands with the intention of looking for a major fit (typically, a 4-4 fit) — we will call this meaning STAYMAN. It is usually the weakest meaning of a lowest bid.

Intermediate bids may serve for showing decent suits. If it is possible to not violate the 1/2-rule too much and to not create unsolvable problems, we should be careful with no-trump bids: when they do not carry a natural meaning, they should be made with a care to right-siding a possible no-trump contract.[25]

It is not always possible to use the lowest bids in the manner described above. Some of them must have a prescribed meaning. Such bids can have a negative or competitive meaning. It is usually very clear that the corresponding bids should be excluded from the LOWEST BIDS mentioned above (e.g., 2♠ over 1♠-(2♡))$_{\triangledown}$

Many of well-known principles follow from the "first priorities first" principle and from the 1/2-rule:

◇ Preferentially showing majors if the hand is limited (this is STAYMAN)
◇ High bid carries some adequate information (this is a sort of 1/2-rule)
◇ Fast arrival (and, consequently, the lack of it shows a better hand)
◇ In competition, we should not be in hurry to bid when we have length in their suit and vice versa
◇ Showing fits with higher bids

Our opponents can always make us "play poker."[26] Therefore, we cannot expect that all our auctions will be exact: we should know how to "play poker" as well. We should not develop a habit to bid only in an exact manner. Nevertheless, even if we know that our opponents have an inclination to wild actions, we should not worry too much about it and remain as disciplined as possible.

Openings and interventions are the most "poker-like" part in our auctions. Some of what is written above is not applicable to them.

Intervention (an attempt at ordering the well-known). An essential aspect of intervening with shapely one-level bids is its freedom from punishment. Ideally, the intervention can pursue the following ends:

1. Looking for our own contract (from sacrifice to slam)
2. Lead director for partner
3. Help for our future defense or help for over-caller with lead problems

These three ends highly intersect. Most distinct are 1 and 3.

Sure, we could agree to intervene only with a good suit and offensive hand and/or showing perfect lead. Such an agreement has serious defects:

[25] In particular, we are welcome to make a no-trump bid with a hand unsuitable for a no-trump contract.

[26] For instance, being white versus red, you can hold a reasonable 1-5-5-2 hand pattern and hear a 4♠ opening on your right. You bid something assuming that most of the spade honors are in the opponents' hands and then dummy puts something like ♠AKQ10-♡xx-◇xx-♣xxxxx.

◇ If, in spite of our intervention, the opponents play their contract, we have given them too much information

◇ The intervention will not happen often enough thus letting them use their common system tools (in particular, they have no problem with preparing something against our intervention)

◇ We will not find a lot of good leads and/or part score contracts (a good fit in some suit can be often combined from holdings which are "so-so" in each hand rather than the suit is excellent in one hand)

It is true that when using a multi-meaning intervention, we make our life harder also (nice to always be definite). However, if our intervention will be the only bid, our opponents will have just the multi-meaning information as well. Well, when making a bid, we have to give some information: it is silly to bid only in order to confuse their auction, since when bidding, we are taking some risk. It is important that the degree of diffuseness and multi-meaning should correspond to the level of the auction. Here again the 1/2-rule is applicable.

There is another approach to intervention — a rather reasonable one: we intervene only if we have a significant chance to win the auction. This approach is typical for those who do not like weak Michaels. In fact, it pursues only the first two ends listed above. The arguments already presented show that a multi-meaning intervention is more flexible and effective, at least when playing with thinking partner.

Thus, our intervention on the one level is allowed to be made on relative garbage. This does not mean that it is appealing to intervene with a suit like J109xx and a weak hand — however, a suit like J109xxx is already considerable.

The main question is how to recognize the bid's meaning. The basic idea is to expect some help from our opponents. In most cases, the intervention will remain "imperceptible" and the opponents will continue their auction. Sometimes, the partner will have a safe opportunity to support the suit bid. Anyway, the opponents will show their opinion about (us leading) the suit bid in one way or another. For example, suppose that our intervention was 1♠, that we were passing afterward, and that the opponents reached a popular **3nt** contract. Suppose also that our overcall was extreme garbage, say ♠Q108xx-♡x-♢J9xx-♣Kxx, and that the diamond suit was not shown in either hand in the auction. What to lead? Even if partner had no opportunity to support spades (say by vulnerability reasons), he could ask for the spade lead by Doubling the final contract. Anyway, the fact that they bid 3**nt** says, "we still want to try it in spite of your "1♠" message." Thus, we have some basis for the diamond lead (the well-known trick: you bid one suit and lead another). Without the 1♠ overcall, the spade lead can be right from the above hand (and still might — just less probably!). Hence, our "garbage" intervention helped in the choice of the lead. Moreover, if partner would have had a balanced hand with 12–16 hcp, we would have a good chance for a part score contract (if we pass with that hand, our partner, in practice, will rarely intervene). It cannot be excluded that we have a good 4♠ sacrifice versus their cold 4♡.

Does it look reasonable to overcall with absolute garbage and to jump with a good intermediate hand? No. If we play in such a manner, the opponents can bravely bid 3nt — when we overcall on absolute garbage — with a weak stopper (or even without a stopper) thus almost forbidding us to lead the suit. However, in the case when a good suit is possible, such a bluff will not be so easy.

Let us formulate some criteria for our overcalls. For the garbage part of the 1-level overcall one of the following statements has to be true:

◦ The player making the overcall needs some support in the suit (usually an honor or length) which has reasonable chances

◦ The player making the overcall has a choice of lead (normally versus a no-trump contract) between two suits and would like to know which lead is best. An important option is **Pass** as it can solve our problem: the opponents can bid one of the suits (or both ⌣) if we are quiet.

Besides the above, a 1-level overcall also has the following meanings:

⋄ A good suit to lead. For instance, KQJ10 or AKQJ with nothing more in the hand, even if the suit has to be 5+ by agreement

⋄ An offensive hand with the intention to compete for a contract (part score, game, or slam) or to sacrifice versus a cold game. In the sacrificial case, with a distributional hand, the suits do not have to be robust

We would like to stress again that the above three goals cannot exist separately. For instance, if we preferentially bid for lead and rarely for our contract, we will be more frequently punished by alert opponents.

With stronger hands, by the Continuity Principle, we **Double**. Clearly, **Double** has to contain also some weaker meaning which shows a hand "without a suit" unsuitable to be Passed — maybe we can have a game. Traditionally it is a takeout **Double** which guarantees 3+ (or Hx) in each un-bid suit. If the opener promised length in their suit, the probability of such a distribution is high enough. Looking back at the evolution of the takeout **Double**, we can see that the requirement of the support for minors tends to disappear. A bad aspect of the takeout **Double** is the difficulty in finding a 4-4 major fit with some hand patterns. We will discuss the weaker meaning of **Double** a bit later.

A 2-level overcall (without a jump) is a much more responsible action. In this case, the requirement to have a good suit or distribution is well known. What is a reasonable meaning of a 1**nt** overcall? The common meaning, 15–18 hcp balanced, is descriptive, however most of the time a no-trump contract can just as easily be played by partner with greater advantage (we keep the opening bidder on lead). It is not so important that this bid is not completely safe (say we are vulnerable, the opponents can begin to **Double**, and there can be nowhere to run). What is important: it is a low bid and the standard meaning is not as probable as the meaning we would like to suggest. Besides, the standard 1**nt** creates no good basis for competitive auctions. It looks like a clumsy attempt to kill with sheer weight.

Our opponents, who opened the auction, have a great advantage: the responder usually has a good picture of the situation. Also they might have more strength — sometimes they can have significant extra strength due to a wider opening range. This is why intervention can be a dangerous business. So, in order to reach an equilibrium, when we intervene it is better to have an unbalanced hand, preferentially with majors. On the other hand, when we have a balanced hand with many hcp (which can just reflect the fact that you got all the hcp for your side), it may be a good idea to **Pass**.

There is no need to say that intervention expresses first of all a wish to make a call. Therefore, any convention concerning intervention is just a collection of tools and in no sense is it a recommendation to overcall. In other words, with any hand, we are allowed to **Pass**. However, Passing when we really should bid may create unnecessary and serious problems (frequently forgotten by players) for the partner in the balancing seat. Deciding whether to **Pass** or overcall, there are several circumstances to take into account:

⋄ If we might have the best hand at the table, it is seldom right to **Pass**

⋄ If we can anticipate the final contract by our opponents and we believe that our partnership is able to find the best lead without intervention, **Pass** is obviously considerable, especially when our bid can warn the opponents about the danger. The other way round: if we think that our partner can have a problem with finding a good lead from Hx in our yet unknown suit, we should consider an intervention[27]

[27] Read more on this theme in our new book "To Bid or not to Lead" written together with ex-junior William Hamlet from Denmark. The book contains 481 pages, 26 photos made before a bid, and 26 photos made after the lead.

⋄ If the partner has passed in the 1st or the 2nd seat and the RHO has opened, we almost have an obligation to help the partner in anyway we safely can. At first glance, an overcall opposite a Passed partner looks less safe. True, the Passed partner rates to hold a weaker hand. However, because of **Pass**, the partner's hand tends to be more balanced, which makes safe almost any bid with shape opposite it. There is a more serious reason for the intervention opposite a Passed hand to be safer. It comes from the general principle that the degree of safety is proportional to the amount of information we have divided by the amount of opponents' information (see ???). Applying it to the particular situation in question, we can see that being less disciplined the intervention opposite a Passed hand tends to express more shape than strength and thus allows us to find more correct part-score contracts and sacrifices. Another way to look at it is this: "it can be our last chance to enter the auction"▽

Now we are going to illustrate with several examples how the "first priorities first" principle works in many different situations.

Example 3.3.2. Intervention over Natural 1♡.

Pass: "always" possible
Double: 1. 4−♣, 4−◇, 4=♠
2. 5+◇, 4=◇, close to two-level overcall,
usually stands to be the dummy in a no-trump contract
3. 15+.
1♠: (4)5+♠, not very strong
1**nt**: 4=♠, 5+**m**, close to limited two-level overcall,
usually prefers to declare a no-trump contract (can be bluff)
2♣: 5+♣, 4−♠
(if 4=♠, then usually stands to be a dummy in a no-trump contract),
limited two-level overcall
2◇: 5+◇, 3−♠, limited two-level overcall
2♡: Weak two-suiter ♠+**m**
2♠: Weak 6+♠
2**nt**: 6+♣, preempt
3♣: Weak minor two-suiter
3◇: 7+◇, preempt
3♡: Good two-suiter ♠+**m**
3♠: 7+♠, preempt

If we would allow a spade 4-card in the 2◇ bid, we could face a serious problem of checking a 4-4 ♠ fit. This problem does not appear for the case of the 2♣ bid. (See Examples 3.3.3 and 3.3.4.)▽

Example 3.3.3. Bidding after (1♡)-2♣-(Pass).

List of necessities; possible safe contract:

- 2−♣, 4−◇, 3−♠, invitational+; 2**nt**, 3♣, 3**nt**
- 3+♣, 4−◇, 3−♠, invitational+; 3♣, 3**nt**
- 2−♣, 4−◇, 4=♠, invitational+; 2**nt**, 3♣, 3♠, 3**nt**
- 3+♣, 4−◇, 4=♠, invitational+; 3♣, 3**nt**
- 4−◇, 5+♠, invitational+; 2♠, 2**nt**, 3♣, 3♠, 3**nt**
- ♣ support preemptive; 3♣, 4♣
- 5+◇, 3−♠, invitational+; 3♣, 3◇, 3**nt**

◦ 5+♢, 4=♠, invitational+; 3♣, 3♢, 3♠, **3nt**
◦ 5+♢, 5+♠, invitational+; 3♠, **3nt**

Convention:

2♢: 1. 2−♣, 4−♢, 3−♠, invitational+
2. 3+♣, 4−♢, 3−♠, no ♡-stopper, a no-trump contract is possible, invitational+
3. 4=♠, invitational+

2♡: 5+♠, invitational+
2♠: 5+♢, 3−♠, invitational+
2nt: 3+♣, 3−♠, either with ♡-stopper or a hand unsuitable for the **3nt** contract, invitational+
3♣: 3+♣, preempt
3♢: 5+♢, 5+♠, invitational
3♡: 5+♢, 5+♠, GF
3♠: 5+♢, 5+♠, good invitational

Comments:

⋄ In this position we should only deal with invitational+ hands except for the ♣ preempt hand

⋄ We do not use **2nt** as a two-way transfer to ♣ (which would be a standard scheme), since the 2♣ overcall is more or less limited and the effect of the ♣ preempt would be lost if we follow the standard scheme

⋄ Worrying about right-siding a no-trump contract, we distinguish invitational+ ♣ support with two bids 2♢ and **2nt**▽

Example 3.3.4. Bidding after (1♡)-2♢-(Pass).

List of necessities; possible safe contract:

◦ 4−♣, 2−♢, 4−♠, invitational+; **2nt**, 3♢, **3nt**
◦ 4−♣, 3+♢, 4−♠, invitational+; 3♢, **3nt**
◦ 4−♣, 5+♠, invitational+; 2♠, **2nt**, 3♢, 3♠, **3nt**
◦ 3+♢, preemptive; 3♢, 4♢
◦ 5+♣, 4−♠, invitational+; 3♣, 3♢, **3nt**
◦ 5+♣, 5+♠, invitational+; 3♠, **3nt**

Convention:

2♡: 4−♣, 5+♠, invitational+
2♠: 2−♢, 4−♠
(if 5+♣, then no ♡-stopper; however, no-trump contract looks reasonable), good invitational+
2nt: 5+♣, either with ♡-stopper or with a hand unsuitable for **3nt** contract, invitational+
3♣: 3+♢, invitational+
3♢: 3+♢, preempt
3♡: 5+♣, 5+♠, GF
3♠: 5+♣, 5+♠, good invitational

Comments:

⋄ In this position we should only deal with invitational+ hands except for the ♢ preempt hand

⋄ We do not use 3♣ as a two-way transfer to ♢ (which would be a standard scheme), since the 2♢ overcall is more or less limited and the effect of the ♢ preempt would be lost if we follow the standard scheme

⋄ Here the priority of showing 5+**M** prevails over showing an ND-hand (in fact, this happens due to the fact that the Stayman contains 5+♠)

⋄ Worrying about right-siding a no-trump contract, we distinguish the 5+♣ invitational+ hands with two bids 2♠ and 2**nt**

Let us see if we can afford a possible ♠ 4-card included into the 2♢ bid. Now the list of necessities (and a possible safe contract) looks like:

- 4−♣, 2−♢, 3−♠, invitational+; 2**nt**, 3♢, 3**nt**
- 4−♣, 3+♢, 3−♠, invitational+; 3♢, 3**nt**
- 4−♣, 2−♢, 4=♠, invitational+; 2**nt**, 3♢, 3♠, 3**nt**
- 4−♣, 3+♢, 4=♠, invitational+; 3♢, 3**nt**
- 4−♣, 5+♠, invitational+; 2♠, 2**nt**, 3♢, 3♠, 3**nt**
- 3+♢, preemptive; 3♢, 4♢
- 5+♣, 3−♠, invitational+; 3C, 3♢, 3**nt**
- 5+♣, 4=♠, invitational+; 3♣, 3♢, 3♠, 3**nt**
- 5+♣, 5+♠, invitational+; 3♠, 3**nt**

So the best convention we can compose under such conditions is:

2♡: 1. 4=♠, invitational+
2. 4−♣, 2−♢, 3−♠, good invitational+
3. 5+♠, GF

2♠: 5+♠, invitational

2nt: 5+♣, invitational+

3♣: 3+♢, invitational+

3♢: 3+♢, preempt

3♡: 5+♣, 5+♠, good invitational

3♠: 6+♠, good invitational

We can see that the auction becomes tense: the bidding after (1♡)-2♢-(**Pass**)/2♡ will be very difficult in many standard situations (saying nothing about right-siding 3**nt**). This is why it is much better to use the variant described in the Example 3.3.2$_\triangledown$

There is an exciting combination of the 1/2-rule with the Principle of First Priorities that works perfectly in the slam zone. We would like to place this example on the Earth. So we first develop (mostly well-known) ideas of

3.4. Constructing the System over an Opening

For a given opening, we usually need to distinguish 3 types of responses: positive, negative, and semi-positive.

Unfortunately, we have to leave a few steps (a possible minimum) for negative responses. Dealing with them, we frequently cannot follow the 1/2-rule. (To avoid a huge violation of the 1/2-rule, we can reconsider our openings.) Negative hands are nasty. With each of them, we would like to stop as soon as possible (even better to quit the auction … sometimes we can dream about the intervention by our opponents). Typically, there are a lot of such hands. Some of them appeal to more bidding in order to find a better semi-fit ... There is no way to solve all these problems. Also, it seems a nonsense to open and then to consume almost all the bidding space when trying to quit the auction. In this sense, natural systems (in the primitive sense of the term) are perfect.

Thus, we devote just a few steps to the problem of negative hands, considering only the most probable ones and hoping that the opponents will help ... One of the fruitful methods of dealing with negative hands is transfers. Sometimes, we can also apply the motto: "We are ready to play on level 2."

Our next task is to save a few (if possible, the lowest) steps for positive responses.[28] When looking for the best contract, we need some additional amount of space. An additional strength can serve a source for such space. We can compare positive and semi-positive auctions with investments and paying bills, respectively. In order to have a positive auction, we invest some strength gaining some amount of space to use. When our strength does not suffice to invest, we can only pay bills. In other words, we can only bid our hand as high as is safe (with respect to its strength which is normally of a distributional nature) trying to describe it as well as possible. In terms of "safe contracts," the auction is positive if the safe contract is much higher than the bid in question. For semi-positive auction, the bid made is frequently close to the safe contract (or simply is it). During the positive auction more and more invitational or uninteresting hands quit with relatively high invitational bids or sign-offs thus making the remaining hands stronger, in other words, investing more strength.[29]

So, initially we should not distinguish positive and most probable semi-positive hands, since the values can be reassessed during the auction. At the beginning of the auction, some sequences in the positive part can be used for negative purposes (**Pass** for some bid — a typical example is a transfer).

Finally, using the steps left, we have to solve the main problem, the problem of describing semi-positive hands for the responder, as well as is possible. Frequently, it is better to make these bids more or less natural, since this economizes the bidding space, thus allowing **Pass** for a response. On the other hand, if the opener has a hand much stronger than the responder, it is reasonable to apply some sort of transfers thus increasing chances to play from the stronger hand. The semi-positive hands usually have more or less the same range. As was already mentioned, we "fill" the higher steps with more distributional hands, putting them as high as is reasonably safe. Some low semi-positive bids (sometimes they cannot have a natural sense) can need further relays to finish the description. However, it is better if they carry some definite information: we have to take into account a possible intervention (see the Principle of Continuity). Dealing with semi-positive responses is merely an allocation art (not forgetting all essential types of hands). Following the 1/2-rule is not so important here.[30] Elaborating on a semi-positive structure, we should balance between several Scylla and Charybdis: the space left, frequency of the hands in question, probability of a game, security, creating a base for judgment, etc.

The crucial difference between positive and semi-positive auctions is that the positive one involves more science and the semi-positive one is based more on intuitive or analog judgments.

Let us consider

`[to be continued]`

[28]Three steps would be more than enough: by the 1/2-rule, if three steps are really the lowest, they take 7/8 of the bidding space left.

[29]We do not discuss what kind of strength. It can be high card strength, fitting honors, length of suits, fits and distributional values, etc. The concept of strength highly depends on a particular situation. For instance, in the slam zone after some slam ambitions are shown, it can be the number of key-cards.

[30]It is more important to follow the 1/2-rule in the lowest steps.