Silli System

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SILLI SYSTEM: WHY IT WAS CREATED

It was created for an important advertising need: to organize a 3rd category Championship with a lot of participants in a single phase. In Italy we had 449 registrations to a 3rd category Championship. It is obviously impossible to have each player play 448 games at the same time and obviously it is impossible to play such a tournament in several stages, as the best players of the preliminaries would have obtained category promotions already in the first stage. The second stage would have seen 2nd category players fighting for a 3rd category champion title and a possible third stage would have seen 1st category players fighting for the 3rd category champion title!

The only thing that could have been done would have been to apply the "Swiss system" of OTB chess to correspondence chess as well.

The "technical value" of a championship with 449 players, in which each player plays against 8 opponents chosen at random, is practically non-existent. The two strongest players could be paired together and, by drawing their game, score fewer total points than 20 or 30 players weaker than them; but luckier in the initial pairing, who will win all their games. But, as previously mentioned, in this type of tournament the fact that YOU CAN DO THEM (even for marketing purposes) is more important than HOW TO DO THEM.

The technical value increases if we consider championships of a higher category (where the difference in strength between the players is not very large) or if the number of opponents of each player is increased.

In Italy, the technical value of the 1st category Championship has recently increased, bringing the number of games to 10 (against 10 different opponents) and the marketing value of the 3rd category Championship has also increased (8 games against only 4 opponents, to mitigate the impact of the continuing increase in postal charges!). In both cases there was a clear appreciation from the players, who registered in a much higher number than the previous year.

A TRUE TECHNICAL VALUE, on the other hand, is obtained with TOURNAMENTS IN MORE STAGES (thus obviously excluding the national championships).

Even in multi-stage tournaments (ICCF Cup, Targa Castiglioní, etc.) the number of players may be too high for the traditional system. The comparison between the traditional system and the “Silli System” highlights, in addition to the advantages, also some defects that the “Silli System” can eliminate.

Let's consider some variables:

number of players: if we want to limit the number of games per player, in each stage, to only 10, it is clear that the traditional system stops at 1331 entries:
121 "preliminaries" of 11 players;
121 winners qualified for the "semifinals";
11 "semifinals";
11 players qualified for the "final".
The “Silli System” is valid for any number of players, even 5,000 or 100,000: the qualification criteria from "preliminary" to "semi-final" and "final" can be set in different ways, as we will see later.

strong players: the traditional system has two defects:
a) the two strongest players can be inserted in the same eliminatory group and one of the two will be eliminated; difficulties even at the tie-break if the two strongest draw each other and defeat their other 9 opponents: 2 first in the final standings with 9½ points;
b) all players who are paired in an eliminatory group with a GM have no hope of moving on to the next round and therefore would have no interest in playing to classify second and be eliminated.
With the “Silli System” the defect a) is automatically eliminated, because the two strong players, whatever the result of the game between them, will be admitted to the semifinal if they defeat the others. The effects of defect b) will be limited, because the defeat against the GM can be remedied with many wins against the weaker ones.

nations: it is the practice of the ICCF to minimize having players of the same nation play against each other in the preliminary stages. This (with groups of 11 players) is only possible if the players of the nation with the highest number of entries are not more than 9%. The "Silli System" allows players of the same nation to be up to 50%, without having to play with each other.

technical value, deriving from the above: since the number of players admitted to the semifinal (and then the final) is greater, ALL the strongest players (plus a few lucky ones) will qualify for the semifinal, despite the great difference between the strongest and weakest. In the semifinals this difference will be smaller, because even the "lucky qualified" will be of a good level and therefore the qualification to the final will be really reserved for the STRONGEST players, except for some very unfortunate player (who, in the traditional system, would have already been eliminated by the World Champion in the preliminary round).

THEORY

All players are entered in ONLY ONE group of (for example) 3099 participants, which will be considered as a CLOSED CIRCLE: the n° 3099 is followed by the n° 1. Each player plays with White against the opponents who follow him at certain intervals (see FORMULA).

In developing the "formula" we will try to follow certain principles that can be varied according to the will of the organizers.
The fundamental principles of the "Silli System" are as follows:

1. Do players A and B play with each other? Then they must NOT have common opponents.
2. Do players A and B NOT play with each other? Then they can have at most two opponents in common. (Having only one opponent in common is very difficult and even somewhat arbitrary formulas need to be applied. They were applied in the last 3rd category Italian Championship to reduce the inconveniences caused by the "double game against an opponent", which could withdraw or be very weak).

Other elements of the "formula", chosen by the organizers, could be:

(1) the aforementioned question of nationalities (over 20% of players from the same nation require the development of a formula other than the basic one), and
(2) any desire to limit the number of games between very strong players or against very strong players, etc.

The "Silli System" is at the same time "very flexible" to meet all the needs of the organizers and "very rigid" after the principles have been established. Each competitor will be able to verify that only chance has decided his destiny, that is, the opponents the player will meet.

PRACTICE

A single preliminary round with 3099 players would be a problem for the organization also because it would have to be managed by only one Tournament Director. No principle of the "Silli System" is violated by breaking the CLOSED CIRCLE of 3099 players into more "small, closed circles". There will be preliminary rounds (and then semi-finals), which could have any number (established in advance!) of players.

All of the following explanations will be based on "groups of at least 100 players".

How will the 3099 players be divided then?
30 groups of 100 players + 99 players...

From the division [99: 30 = 3 with remainder 9] we have:
• 9 groups of 104 players = 936 players +
• 21 groups of 103 players = 2163 players
Therefore:
• 30 groups of 103/104 players. = 3099 players

Each group will be on its own. In the CLOSED CIRCLE of the first group, after the player n° 104 will come the player n° 1, while in the second group the players will be numbered from 105 to 208 and after the n° 208 will come the n° 105 (CLOSED CIRCLE!), and so on for the other groups.

Each group will have its own TD.
For the final ranking one of these two systems can be adopted: the ranking by group or an only unified ranking (used in Italy for the category Championships).

QUALIFICATION TO THE SEMIFINALS (AND TO THE FINAL)

Here, too, the system is flexible. In the Targa Castiglioni, for example, it was established that to qualify for the next phase it was necessary to score 6 points out of 8 (about 25% of the players).

Here is a list of just some of the criteria that can be adopted:

a) Criteria such as that of the Targa Castiglioni, with the scores to be achieved according to the number of games.

b) Criteria of the type "2 + 1 or 1 + 2"): that is a restriction of the points that can be lost. A total of no more than 3 points can be lost between preliminaries and semifinals: for example, 2 points can be lost in the preliminary round and 1 in the semifinal (or vice versa). Anyone who barely entered the semifinal must do very well to be admitted to the final!

c) A fixed number of players qualify for the next phase (system adopted for the 4th ICCF Cup, to which I will refer in the following examples). For example, 20% of the players in each group qualify for the semifinal and 15% of the players from each semifinal qualify for the final (20% and 15% of the unified ranking could also have been established, but for the 4th ICCF Cup it was decided as mentioned above).
From each group (104 or 103 players) the top 21 will go to the semifinals, for a total of 630 semifinalists: 6 semifinals of 105 players each. From each semifinal 16 players will go to the final with 96 players (93 players if a unified ranking would been made).

The final, in theory, should always be unique. Therefore the percentages must be calculated on the logical predictions. There will be a 200-player final with 6600 registrations; if there will be more, it will be sufficient to reduce the percentage of qualified from each preliminary group or from each semifinal.

The "Silli System" also makes it easy for players who have acquired qualifications in other competitions (for example in the 3rd ICCF Cup) to enter the Semifinal or the Final. No difficulty in having the Final with 120 players instead of the 96 previously calculated, and always with only 10 games per player.

PAIRING FORMULAS

(In the examples we will use the group of 103 players)

In the formulas, the numbers referring to 10 games per player will always be indicated in brackets. Numbers without brackets refer to 8 games per player.

First of all, we demonstrate that the FIRST NATURAL FORMULA is:

1 . 4 . 10 . 17 . (29)

This means that each player will play with White against the players who follow him by 1, 4, 10, 17, (29) places in the "closed circle" and with Black against the players who precede him by as many places: n° 50 will play with Black against (21), 33, 40, 46, 49 and with White against 51, 54, 60, 67, (79).
What about n° 103? And about n° 3?
It is evident that, if we consider the CLOSED CIRCLE, 103 will have White against 1, 4, 10, 17, (29) and Black against (74), 86, 93, 99, 102.
3 will have White against 4, 7, 13, 20, (32) and Black against (77), 89, 96, 102, 2.

We called it FIRST NATURAL FORMULA because it is the one with the smallest numbers that respects the principles listed in the "theory".

The fact that player "X" plays White against 4 (5) opponents - which can be indicated by X+a, X+b, X+c, X+d, (X+e) - and, obviously, with Black against as many opponents - which can be indicated with (X-e), X-d, X-c, X-b, X-a - implies that there are 6 (8) DIFFERENCES between the various pairs X+... (corresponding to as many DIFFERENCES between the various pairs X-...); it is essential that the differences between the various X+… pairs are different from each other in order to have only two opponents in common with another player: two equal differences between the various X+… pairs would result in 3 or 4 opponents in common.

If player X plays against (X+a) and (X+b), it is clear that player (X+A+B) will play against the ones that precede him of "a" and "b" places, that is, against (X+A+B-a) and against (X+A+B-b), namely against (X+a) and (X+b): the same as player X!

With the different differences, player X will have another 12 (20) players who will play against two of his opponents. If the differences were the same, he would have a number (calculable, but we don't care) of participants with 3 or 4 or more opponents in common.

Let's now calculate the NATURAL FORMULA.

Let's give the number 0 to player X: obviously his first "natural opponents" will be number 1 (and number -1):

Ref.	Opponents	Player	Opponents	Differences
A	-1	0	+1	1-0=1 1-(-1)=2

- 1 and + 1 are the first two opponents of 0, and 1 is the first element of the formula.

Let's look for the 3rd (and 4th) opponent (second number of the formula); we immediately see that:
• 2 NO, because 2 - 1 = 1, and this difference appears in A
• 3 NO, because 3 - 1 = 2, and this difference appears in A
• 4 YES, because 4 - 1 = 3 (difference that does not appear in A).

We therefore now have two numbers in our formula: 1 and 4.

Ref.	Opponents	Player	Opponents	Differences
B	-4 -1	0	+1 +4	4-1=3 4-0=4 4-(-1)=5 4-(-4)=8

Let's look for the 5th (and 6th opponent):
5 NO because 5 - 4 = 1, and this difference appears in A
6 NO because 6 - 4 = 2, and this difference appears in A
7 NO because 7 - 4 = 3, and this difference appears in B
8 NO because 8 - 4 = 4, and this difference appears in B
9 NO because 9 - 4 = 5, and this difference appears in B
10 YES

More simply, to the last number of the formula under construction we can add the smallest number that does NOT appear in the differences calculated up to now: it is 6 and therefore 4 + 6 = 10.

We thus found the 3rd number of our formula and consequently this table:

Ref.	Opponents	Player	Opponents	Differences
C	-10 -4 -1	0	+1 +4 +10	10-4=6 10-1=9 10-0=10 10-(-1)=11 10-(-4)=14 10-(-10)=20

The smallest number that does NOT appear in the differences listed in A, B and C is 7 (then there are 8, 9, 10 and 11; 12 is missing, of which we will see the use for the reserve formulas).

Let's add 7 (which is missing between the differences) to 10 (in our formula) and we get 17 (4th number of our formula). It is already complete if we only have 8 games:

1 . 4 . 10 . 17 (FIRST NATURAL FORMULA)

With 10 games, we need to continue with:

Ref.	Opponents	Player	Opponents	Differences
D	-17 -10 -4 -1	0	+1 +4 +10 +17	17-10=7 17-4=13 17-1=16 17-0=17 17-(-1)=18 17-(-4)=21 17-(-10)=27 17-(-17)=34

In the table of the differences, 12 is missing and therefore the last pair of opponents will be obtained from 17 + 12 = 29 and will be -29 and +29, referring to player 0.

In the case of 10 games, the **FIRST NATURAL FORMULA** will therefore be:

1 . 4 . 10 . 17 . 29

(Also 15 is missing among the aforementioned differences; we will see its use later in the reserve formulas).

RESERVE FORMULAS

The above formulas are not always valid (and there may be cases in which even if they are valid in an absolute sense it is not possible to apply them; for example when 40% of the players, who should not meet each other, are from the same nation).

The formulas lose absolute validity in 3 cases:
1) When the players are too few: less than 34 (58). The formulas can be applied the same, but in any case (even with another formula and other formula construction criteria) the principle that two players who do not play with each other have no more than two opponents in common will be violated.
2) When the number of players is double of one of the numbers of the formula, because then each player would play two games (one with W and one with B) against the same opponent, THEN WE MUST USE A RESERVE FORMULA.
3) When the number of players is the sum of 3 or 4 of the numbers of the formula (even repeated), A RESERVE FORMULA MUST BE USED, because otherwise the 2nd principle stated in "Theory" would not be respected. Neglecting case 1) and case 2), and established that with 100 or more players the formula with 8 games is always valid, we can note that the formula

for 10 games is not valid with 104 players (29 + 29 + 29 + 17) and 116 players (29 + 29 + 29 + 29). We will then use the reserve formula we mentioned in the construction of the "first natural formula"; the **SECOND NATURAL FORMULA** derives from the first with a single substitution:

8 games: **1 . 4 . 10 . 22**

(being "free" 12, after 7, instead of 10 + 7 = 17, we will have 10 + 12 = 22)

10 games: **1 . 4 . 10 . 17 . 32**

(being "free" 15, after 12, instead of 17 + 12 = 29, we will have 17 + 15 = 32).

This reserve formula will likely be used in the 4th ICCF Cup in case there are 104 players in a group (which is quite likely).
It is useless to look for all the possible reserve formulas: it is always easy to calculate the one we need for each particular case.
However, it is useful to mention the one to use when the players of a nation are more than 20-25% of the total (the exact percentage cannot be established anyway, because it changes according to the number of players in the group: it is different if the players are 101 or 102 or 104 and may be higher for fewer players).

First of all it will be established that all the players of that nation will be given only even numbers or only odd numbers (it will depend on the number assigned to the first of them). We will create a formula with only ODD NUMBERS; therefore only the missing EVEN numbers will be searched in the DIFFERENCES. Let's rewrite only lines A, B, C and D:

A	-1	0	+1	1 - (-1) = 2

therefore not 1 + 2 but 1 + 4 = 5

B	-5 -1	0	+1 +5	5 - 1 = 4 5 - (-1) = 6 5 - (-5) = 10

among the differences 8 is missing and therefore 8 + 5 = 13

C	-13 -5 -1	0	+1 +5 +13	13 - 5 = 8 13 - 1 = 12 13 - (-1) = 14 13 - (-5) = 18 13 - (13) = 26

16 is missing (and 20 as a possible reserve) and therefore 13 + 16 = 29

D	-29 -13 -5 -1	0	+1 +5 +13 +29	29 - 13 = 16 29 - 5 = 24 29 - 1 = 28 29 - (-1) = 30 29 - (-5) = 34 29 - (-13) = 42 29 - (-29) = 58

now 20 is missing (and, for the reserve formula, 22) and therefore 29 + 20 = 49; the formula will then be:

1 . 5 . 13 . 29 . (49)

with the two reserve formulas:

8 games: **1 . 5 . 13 . 33**
10 games: **1 . 5 . 13 . 29 . 51**

With 10 games (for example in the 4th ICCF Cup) another formula should be sought in the case of groups with 100 players (29 + 29 + 29 + 13 = 100) or with 116 players (29 + 29 + 29 + 29 = 116), while the reserve formula could be used for 103, 104, 108, 111, 112, 124, etc.

CONTROLLED ALLOCATION OF PLACES IN THE START LIST

In Italy we used to put the players in alphabetical order and then use the first extract of the "Lotto" (weekly lottery of the State) to assign the positions. We started from that number and then add it up repeatedly (in a closed circle). For example, if 7 is drawn in the Lotto game, the 7th in the alphabetical list becomes n° 1, the 14th becomes n° 2, the 21st becomes n° 3 and so on.
For the 4th ICCF Cup it was decided to use only the alphabetical order, after deciding how many groups there will be in the Preliminaries: the 1st in the alphabetical order will be the n° 1 of the 1st group, the 2nd will be the n° 1 of the 2nd group and so on; in this way the multiple entries will be automatically divided among the various groups.
We just have to examine how not to make players from the same nation play against each other.
A distinction must be made: players from a given nation in a group can be few, several, many or too many.
FEW: up to 10%; SEVERAL: up to 20%; MANY: up to 50%; TOO MANY: over 50%.
Let's start from the queue!

TOO MANY (over 50%): those that exceed 50% must be moved to the next group; to be precise, swapping them with the next in alphabetical order (which obviously does not have to be from the same country!).

MANY (from about 20% to 50%): the ALL ODD FORMULA is used and, after it has been established by lottery whether those players will touch the "even" or "odd" places, the players of that nation will slide in the places reserved for them who are still free or who, at a given point in the assignment, will necessarily be left "free" for them: it is clear that, by touching them (for example) the "odd" places, we will have to reserve them the last 17 odd places when in the list we still have 17 players from this country.

SEVERAL: from over 10% to about 20%: FIRST NATURAL FORMULA. In this case, after having placed the first players drawn, it is necessary to "reserve" places for the players of the most represented nation. It is advisable to delay the "reserve of seats" as much as possible, but for percentages close to 20% it may be necessary to do it from the beginning in the following way: a CLOSED CIRCLE of as many places as there are players is arranged; it starts from any point, which will be assigned to a player of that nation, and the "places" of the "opponents" are cancelled: the first free place will be reserved for the 2nd player of that nation. The places of his opponents are now cancelled; again the first free place will be reserved for the third player of that nation and so on until this CLOSED CIRCLE is completed, which will have "reserved places" at variable distances; this CLOSED CIRCLE OF PLACES is independent, from the beginning, of the CLOSED CIRCLE OF ALL PLAYERS. After having drawn two or three or four players from that nation, the two CIRCLES, considered concentric, will coincide, so that the "reserved seats" coincide with those drawn; in this way we will know where the other reserved places will be.

FEW: up to 10%: only precaution, ALSO VALID IN THE PREVIOUS CASES FOR THE PLAYERS FROM THE NATIONS WITH LESS PLAYERS, is to immediately mark the incompatibilities: if n° 1 is Italian and the players are 103, we will immediately mark that the numbers 2, 5, 11, 18, 30, 75, 87, 94, 100, 103 cannot be Italian. If there is another Italian at n° 5, he will be moved to n° 6. Blacks must be taken into account only at the end of the circle; if n° 2 is Swedish, we will only take care to mark "non-Swedish" the n° 3, 6, 12, 19, 31, 76, 88, 95, 101; therefore the Black opponents beyond the n° 103 are not to be marked. Towards the end of the list, a precaution may be necessary: it is clear that if we are at the n° 95, there are still two Italian players and from n° 96 to n° 103 there are 6 places marked "non-Italian", the two Italians will have the only places available for them.

BUHOLZ

Among the peers classified, the ranking order (and the precedence for the passage to the next phase) will be decided by Buholz, ignoring the scores obtained by the two worst opponents; in case of further parity, these two results will be considered one at a time.
This is done to minimize the influence of "bad luck" of being drawn against a "very weak" or "withdrawn" player.

SEMIFINAL

The game between two players who have already met in the first round will be avoided. The other rules all remain valid.

FINAL

It is no longer forbidden to play between players of the same nation; all other rules remain valid.
For the final classification, in the 4th ICCF Cup the Buholz will be considered and, only in the case of absolute equality, the best result obtained in the semifinal and possibly in the preliminary phase will be considered.
For the "theory" of the “Silli System” these two criteria could also have been interchanged.

CONCLUSIONS

This explanation of the "Silli System" took into account the experience gained in the Italian Championships and the Targa Castiglioni and the needs of the ICCF for its 4th Cup. However, this exposition also shows that the system is very flexible and that the changes that any organizer would require can be implemented: moreover, the experience will always improve both the "theory" and the "practice". We will be grateful to those who, by implementing the "Silli System", report the defects found and above all the way in which they found to overcome them.