

**a study of synchronous, 2-player chess variants  
(in two parts)**

- I. universal rules for orderly play**
- II. the fatal flaw**

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**universal rules for orderly play**

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**All legal moves for consideration by both players should be based upon the simplified presumption that no piece belonging to one's opponent will move upon the next available turn (even though, in fact, one piece will move).**

**This restrictive rule is needed to simplify and limit the geometrical movement possibilities to what is currently, visually evident. Otherwise, ALL geometrical movement possibilities one move into the future must also be admitted as legal, mentally visualized and planned for.**

**[Note- The overwhelming, additional complexities of planning a move mindful both of the present board possibilities and ALL board possibilities one move into the future is actually not the main reason for this restrictive rule, though.]**

**For example, a desired move for a sliding piece extending past a blocking opponent's piece would be admitted IF the blocking opponent's piece was simultaneously moved out of the way. However, what IF instead the blocking opponent's piece was NOT moved out of the way as anticipated? Then, a desired move for a sliding piece extending past a blocking opponent's piece would be illegal. Consequently, both moves would have to be withdrawn, made illegal and simultaneously replayed with different move choices. Furthermore, both players would then have definite ideas and suspicions about their opponents' next move which would, in turn, affect their decisions regarding replacement moves thereby tainting the "blind fairness" of the game critical to synchronous chess variants. Therefore, such disruptions must be prevented at all costs.**

**A superior game-design principle favors orderly play where the possibility of move conflicts, move reversals and understandable player frustration is precluded. So, it is imperative that it not be possible for both players to make moves which individually seem to be perfectly legal yet in combination with one another turn out to be illegal. Therein lies the need and value for the restrictive rule.**

**All legal moves by both players must be conducted in a sequence of 4 selection steps, each announced or executed simultaneously:**

### **1. Piece Type Selection**

**The irreversible selection by each player of the type of piece which will be used for their respective next moves.**

**Examples:**

**White- Out of an army of pieces consisting of bishops, rooks and queens, any rook may be selected.**

**Black- Out of an army of pieces consisting of bishops, rooks and queens, any bishop may be selected.**

### **2. Specific Piece Selection**

**The irreversible selection by each player of the single piece within the selected piece type which will be used for their respective next moves.**

**Examples:**

**White- The rook on F6 is selected.**

**Black- The bishop on I10 is selected.**

### **3. Direction Of Movement Selection**

**The irreversible selection by each player of a single direction of movement for the selected specific piece which will be used for their respective next moves.**

**Examples:**

**White- The rook on F6 will move north.**

**Black- The bishop on I10 will move southwest.**

#### **4. Destination Space Selection**

The irreversible selection by each player of a single space [usually, a square] in the selected direction of movement for the selected specific piece which will be used for their respective next moves.

Examples:

White- The rook on F6 will move north to F10.

Black- The bishop on I10 will move southwest to G8.

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The successful completion of these 4 steps in sequence achieves the simultaneous completion of a legal move for both players in every case. Still, simultaneous-move chess variants will occasionally present surprising, unusual situations to one or both players. Specifically, there are 3 "moving target" scenarios which are totally unfamiliar to players of turn-based chess variants yet must be dealt with following rules which work in every case:

##### **I. Missing A Moving Target (where the 2 players move to 2 different spaces)**

###### **A. Failed Single Capture**

If one player moves a piece to a space which was previously occupied yet his/her opponent simultaneously moves the occupying piece away with his/her chosen move (capturing or non-capturing), then the player who moves to capture the piece which simultaneously moves away captures nothing and merely lands upon a newly-empty space.

This scenario is typically an accident to the player who failed to capture which sometimes works to the advantage of the player who managed to escape (often intentionally).

Given the information provided by step #2 (specific piece selection) as well as step #1 about his/her opponent's intentions, the disadvantaged player should have anticipated and avoided this outcome by improvising a constructive, second-choice move with his/her irreversibly chosen piece to move.

## **B. Failed Mutual Capture**

**If both players move pieces to spaces which were previously occupied yet their opponents simultaneously move their occupying pieces away, attempting to capture each other, with their chosen, non-capturing move (intended to be a capturing move), then both players who move to capture pieces which simultaneously move away capture nothing and merely land upon newly-empty spaces. In summary, the two pieces switch spaces.**

**This scenario is typically an accident to both players who failed to capture that usually works to the significant advantage of neither player.**

**Given the information provided by step #2 (specific piece selection) as well as step #1 about each other's intentions, both players should have anticipated and avoided this outcome by improvising constructive, second-choice moves with their irreversibly chosen pieces to move.**

## **II. Hitting A Moving Target (where the 2 players move to the same, single space)**

### **Successful Mutual Capture**

**If both players move pieces to the same, single space that was previously empty simultaneously, then both players lose their pieces since the double occupation of a single space is forbidden. Then, the space is empty again.**

**This scenario is typically an accident to the player who comparatively lost the more valuable piece that works to the advantage of the player who lost the less valuable piece (often intentionally) although it is possible for both players to lose pieces of identical value.**

**Given the information provided by step #3 (direction of movement selection) as well as steps #1 & #2 about each other's intentions, the disadvantaged player (if any) should have anticipated and avoided this outcome by improvising a constructive, second-choice move with his/her irreversibly chosen direction of movement with the chosen piece.**

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## **the fatal flaw**

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**I have been doing some "thought-experiments" recently involving playing scenarios for various synchronous chess variants. Unfortunately, the results have been extremely unpromising. If there is something critical that I am missing in my analysis, please clarify.**

**For game stability, tenable defenses must be maintainable with proper, orderly play throughout the opening game and midgame (as defined by the ratio of pieces remaining to pieces started with). Thusfar, I cannot figure-out how either player can, with any realistic probability of success, maintain any defenses at all playing any simultaneous-move chess variant resembling games I am familiar with, either games I have imagined or games that have been proposed by others in the abstract.**

**Please let me demonstrate with a responsible example:**

- 1. Imagine any typical game where you begin with two armies of pieces grouped on opposite sides of the board. The pieces within each army are all backed-up by one another in numerous ways. At least some of these pieces are sliders of unlimited range. There is one royal piece (per player).**
- 2. As early as possible, black desires to attack. So, he/she clears a path, moves its queen out to a forward position where it can optionally attack any of a few pieces and then, sends its queen directly into white's army via an unanticipated or unprevented angle, making its first capture. Black did not even invest any moves to back-up its attacking piece.**
- 3. White's pressing objective then becomes to capture the attacking piece of black, esp. as there are no consequences since it is not backed-up. Otherwise, the black queen will almost surely do more damage. But how?**

**By the way, white is not yet positioned to attack black's army on the other side of the board with any slider of unlimited range. Nor can white invest any moves getting positioned to attack black's army since black is already ahead in the piece count. [This strategy would lead to defeat for white when the endgame is reached with arithmetical certainty.]**

4. Now, how can white ever capture black's queen that can:
- A. unexpectedly capture more pieces, probably in a few of the 8 possible directions.
  - B. unexpectedly reposition to any desirable empty space to setup another series of captures.
  - C. unexpectedly remain stationary (while black positions another piece for attack).

Most of black's aggressive queen moves are conducive to escaping capture as well as materially costly to white. Only by a remarkable stroke of luck will white be able to capture black's queen.

5. Even worse, white **MUST** protect the most direct path of attack against its king (as defined by the minimum number of moves required for black). Black is fully aware of this and as such, can predict white's moves, as long as rational, with certainty. So, black can instead capture valuable white pieces along different lines of attack than the one white must defend against, completely without fear of losing its queen. Meanwhile, white must waste its moves capturing some of its own pieces along black's most direct path of attack against white's king in an ill-fated attempt to capture black's queen while doing so.

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#### Conclusions-

Obviously, this scenario is doubly catastrophic for white who probably would lose in record time. The entire destiny of the example game was determined in very few moves strictly by which player effectively launched the first direct, unsupported attack into the other's army.

Note that mastery of a very limited opening book is all that is required to insure a win or at least, a draw in this example game that, by definition, is both a trivial game and an unstable game. Essentially, it is merely a race game based upon offensive actions where all possible defensive actions are futile.

I can only conclude that any synchronous chess variant that possesses **ANY** sliders of unlimited range at all is theoretically unstable and trivial.

**Furthermore, I cannot even safely conclude that any synchronous chess variant consisting only of pieces with limited range (e.g., steppers or 1-leap leapers) is theoretically stable and non-trivial due to the dangerous absence of any tenable defenses which also pervades games of this type (although to a lesser extent). The possible exception being only if the directions of movement allowed for these limited-range pieces are severely limited.**

**One must wonder if the resulting game having more similarity to checkers than chess (being unavoidably slow, long, crippled and tedious to the extreme) would be at all desirable to play, though.**

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