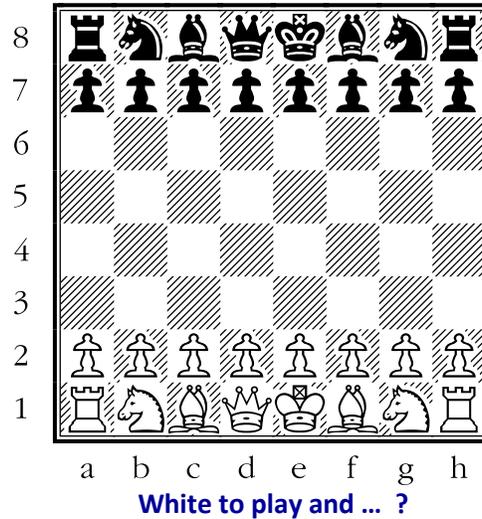


Fundamentals of Chess: The Board



Not even Alpha Zero has a definitive answer to this question.

We begin our journey with a truism: Chess is a difficult game, one well worth studying.

The initial question is so very hard, but our method of study *will* revolve entirely around the concept of questions and answers. We will assume that we can find the answer to any question!

But we will also give ourselves an out. If it appears that we cannot find an answer (such as to the question posed above) then we are simply asking the wrong question(!). We must break down this too hard question into smaller, easier ones that we can tackle.

Let's begin our journey by asking ourselves about our playing field. What can we learn from just observing the peculiarities of our playing field? [An 8x8 board with alternating colored squares.]

- Let us look for symmetry, and symmetrical patterns.
- Let us look for smaller chunks, and see what effects they might have.
- Let us note that solutions that might work in the middle of the board might not work at the boundaries where things become skewed.

Those were the three main areas my mind went when I first pondered just the board. Not surprisingly this is just as a physicist (which I was trained to be) could easily look at how things worked in our universe.

I will begin my thoughts on the next page. Here is your chance to start thinking upon the above points.

Let me add an important thought for you:

If someone asks you a question, and you do not "know" the answer it is terribly hard and frustrating. But if you DO know the answer then it is trivially easy!!

Our goal is to make chess much "easier" for you to understand... executing is another issue(!)

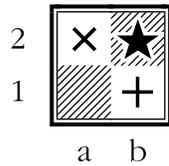
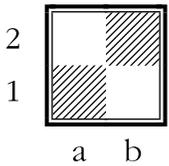
Let's start with a 1x1 Just a simple square



I see no symmetry. A square is either dark or light. It can be guarded, or undefended.

The color is significant, especially for bishops, and this can have a profound effect upon the game.

Now a 2x2 The Kernel

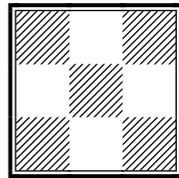
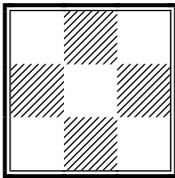


This is a significant chunk. I can build an entire board by simply repeating this one over and over.

Indeed if I do that (there will be a diagram later) I find out that I actually have four “types” of squares on the chessboard, and not just two!

These “RELATED SQUARE” families will teach us how to play KING and PAWN endings ‘perfectly’.

The 3x3: The Boxing Ring



As you can see from the above there are two types of 3x3 depending upon the central square color.

This chunk is huge for what it can tell us. One usually first learns about this idea in studying rook endings, and the talk of “checking distance” comes up.

But there is much more:

Indeed, I call it the boxing ring because this is where we can learn a lot about how strong our pieces are compared to each other. [Checking distance comes to mind here again, too!]

We can also learn about the properties of our pieces. Are they short-range pieces, or long-range, and why? Which ones co-operate well together, and why?

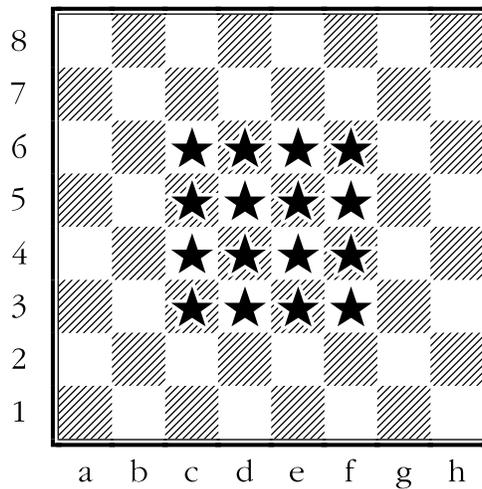
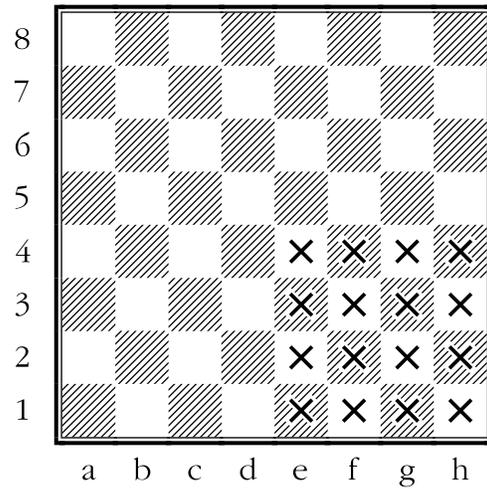
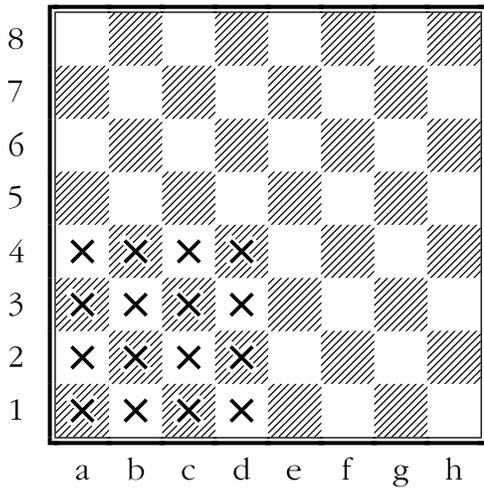
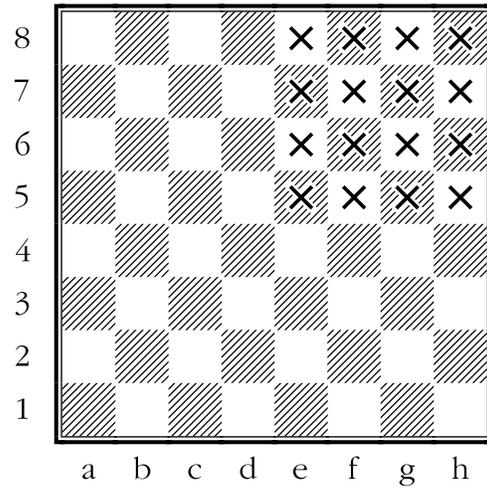
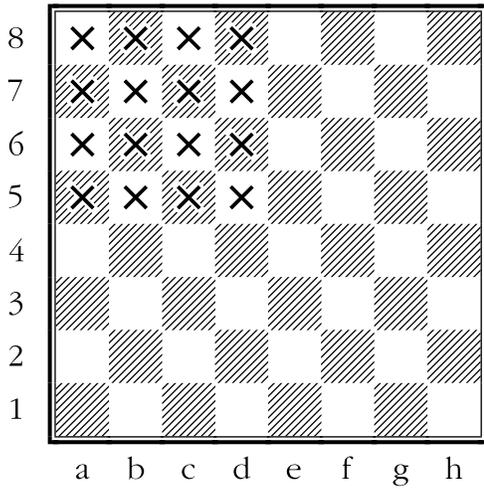
This can even lead to how we should plan our play. For if we have only short-range pieces, we would like to have just one distinct field of struggle. With long range battling against short range, having two distinct (and separated) fields would favor the long-range pieces.

One can also see the necessity of opening the second front [separate boxing ring] should the battle be bogged down in just one zone. Especially if we can shift our forces to the new area more efficiently than our opponent.

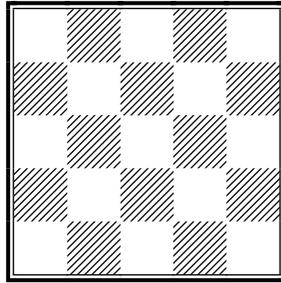
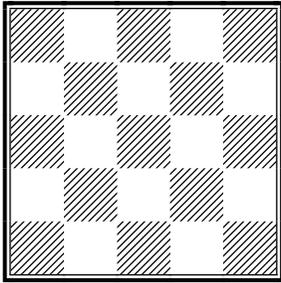
And just recently I noticed yet another concept, I long “knew”, explained in an annotation to a game in a complicated way that just falls out if I had thought of it in this context.

The 4x4 QUADRANTS

seem self evident



*But did you consider the most important **FIFTH QUADRANT** ??*



The 5x5 Knight Span

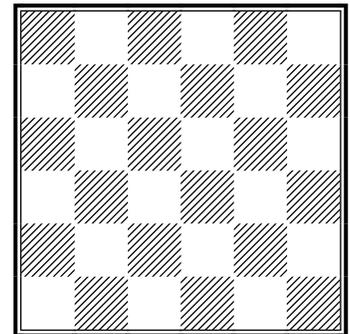
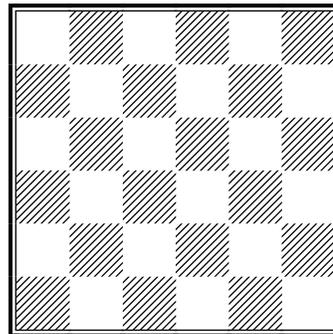
Put a knight in the center and one sees all a knight could do:



6x6 The Extended Boxing Ring

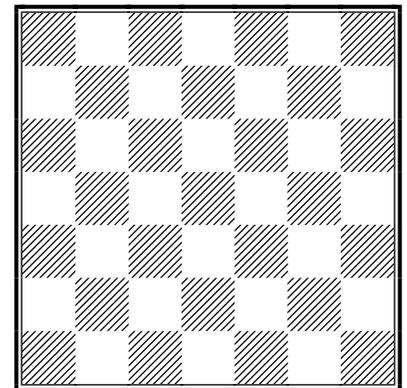
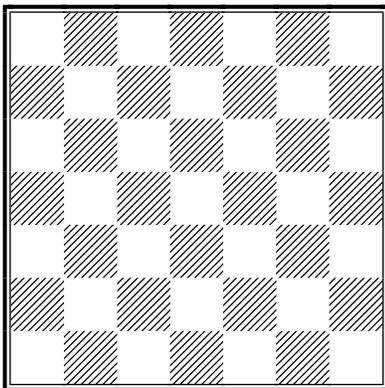
Here we have four contiguous Boxing Rings. This is about the widest span a knight can move between two areas with some ease.

The same applies to a king, if it is already in/near the central kernel 2x2.



7x7 No Man's Land

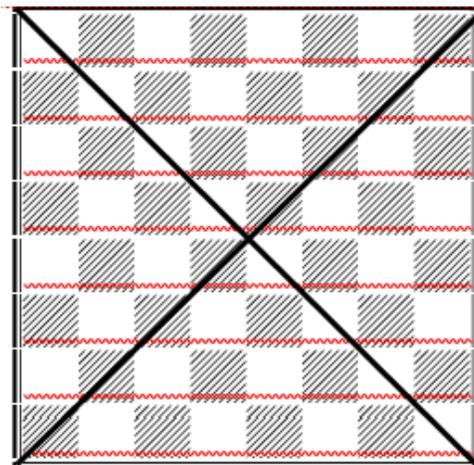
If we put the Boxing Rings in the corners, then we will see a strip [vertically and horizontally] that separates them. This is the no man's land, and if a knight has no anchor squares in the vicinity of the center of this 7x7 then it will be forced to choose sides, and thus you can take your attack to a "vacated" area.



8x8 The Board

Symmetry

We find that the axis of symmetry for the chess board is along the diagonals. This runs counter to our everyday thinking and so we must adjust for it. For example: a straight line may not be the "Quickest" path.

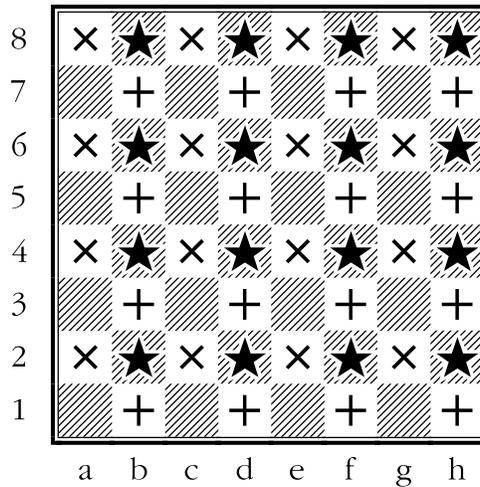


SPEED

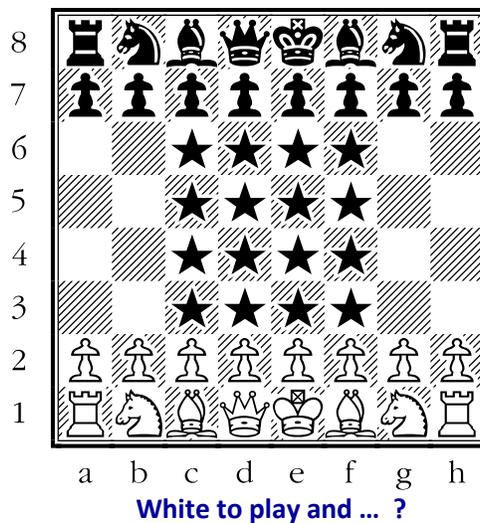
We use the entire board to find out the speed and mobility of our pieces. How fast they can traverse the board? How many squares can they control?

Fundamentals of Chess: The Board

Let's now build our board by means of the Kernel we presented earlier. It would look like this:



Now let's throw in the original starting position along with the **Fifth Quadrant** and we get:



What we can answer is that White's initial goal is to contest the 5th Quadrant as he begins his quest for victory.

The material presented here is merely a summary and outline of what I have discovered over the years. It did not just come out all at once by just sitting down and thinking. Nor did it even come out "in order". There were sudden, light bulb, moments of eureka when all of a sudden, it was, of course, that is clear now...

However, I have been able to utilize my training methodologies to allow players to find the ways to understand many key concepts "quickly and easily".

Looking to Improve your Game ??

2018

Milestones:

50 years since my first USCF journey

40 years since I became a Master

30 years as a Rolls-Royce Engineer

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