



K&P&? vs. K

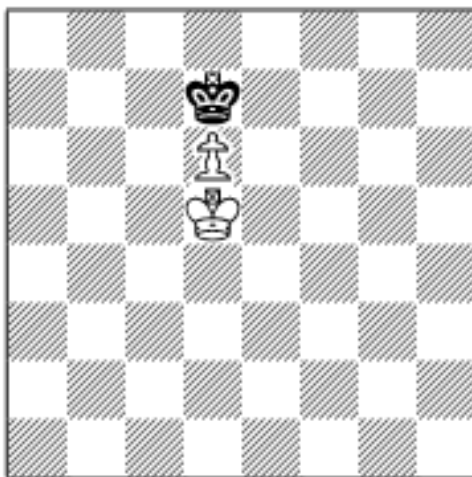
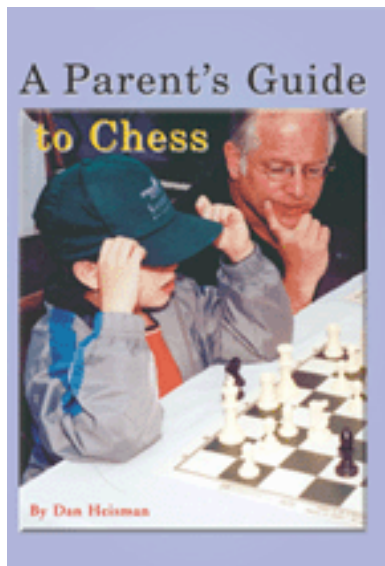
Dan's Quote of the Month: *You learn the openings forward since all positions stem from the opening move. You learn the endgames backwards (fewest pieces first). One reason is that when you learn more complicated endgames you will know which positions you can win after a possible trade, and which you cannot.*

COLUMNISTS

Let's take a standard position from a K&P vs. K endgame:

Novice Nook

Dan Heisman



In this well-known position, when:

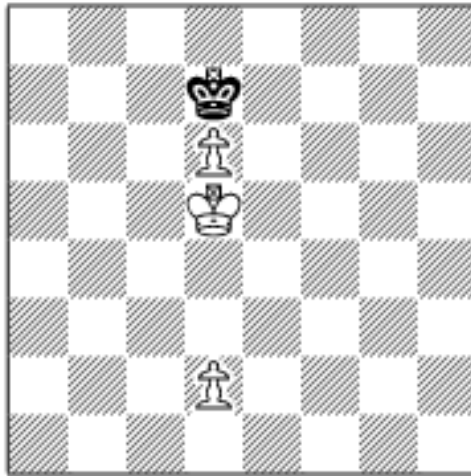
- 1) The pawn is on the sixth rank,
- 2) The defending king is blocking it and the offensive king guarding it, and
- 3) It is not a rook's pawn, then

...the game is a draw no matter who is to move if defender follows one rule: *Go straight back and forth between the promotion square and the one in front of it (here d7 and d8) until the opponent's king approaches on the sixth rank and then oppose it.* For example, with Black to play in the previous diagram **1...Kd8!** (1...Ke8? 2.Ke6 Kd8 3.d7 wins) **2.Ke6 Ke8** is drawn as either White's King must retreat, allowing an eventual three-fold repetition of position, or White tries **3.d7+** when **3...Kd8** forces White to either abandon the pawn or stalemate with **4.Kd6**.

However, suppose White has an extra tempo (anywhere!) to spend. That would change everything, because then, no matter who is on

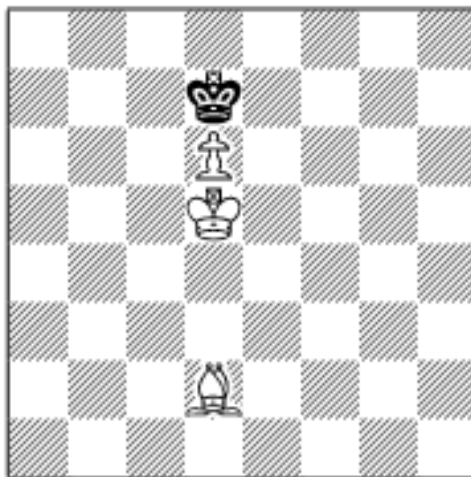


move, he could wait until the crucial position where he would stalemate and then just spend a tempo and win! For example, let us add a doubled pawn on d2:



Now White wins no matter who is on move. Suppose it is his move. Then **1.Ke5** waiting **1...Kd8** On other moves White does not even need the tempo! **2.Ke6 Ke8 3.d7+ Kd8** White does not have to abandon the pawn or stalemate. He just plays **4.d3** (or 4.d4) and Black must give way with **4...Kc7** allowing **5.Ke7** winning. Similarly, place a bishop on d2 instead of the

pawn:



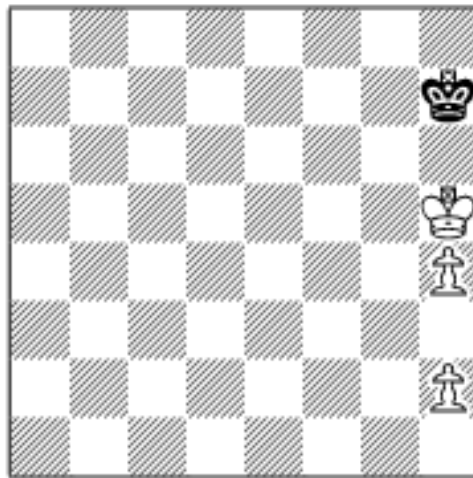
Here **1.Ke5 Kd8 2.Ke6 Ke8 3.d7+ Kd8** and now **4.Ba5** is mate, but any other bishop move that does *not* stalemate (4.Bf4??) followed by 4...Kc7 5.Ke7 also wins thematically as before, using the extra tempo. If it were the opposite-colored bishop to the promotion square, there would be no mating or stalemating possibilities, but the tempo wins just the same.

Of course if the defending king is *not* blocking the pawn, that is at least as good for the player with the pawn. From all the above, we can deduce a very powerful statement: *If a player has a king, a defensible non-rook's pawn, and anything else, he can win except in the rare cases where his pawn has already advanced into a potential stalemating position (see the examples below)! It does not matter what rank the pawn is on, so long as it is able to be defended. The cases where the pawn is unstoppable and just races in and promotes are easiest, so we won't consider any of those!*

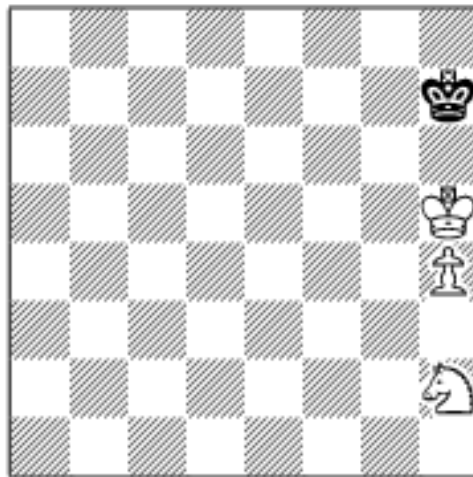
We will first consider positions where the offensive king can immediately guard the pawn. In that case the player with the extra "something" just plays the position as if it were king and pawn vs.

king, and then wins by wasting a crucial tempo at the end. Note that the rule stated above only applies in pawn endgames with a pawn other than an a- or h-pawn. Therefore, not surprisingly, if we wish to extend this rule to *all* pawn endings, rook's pawns will be involved in most of the exceptions. Understanding which King and pawn and ? vs. King endgames win (and which don't!) is a part of *technique*, i.e., knowing which positions are theoretical wins and draws and how to win (or draw!) them.

The first and most obvious exception to the extended rule, which includes rook's pawns, would be doubled rook's pawns:



Since a rook's pawn never beats a well-placed defensive king (e.g., one with control of g7 or g8 for h-pawns), it is not surprising that an extra pawn does not help. So long as Black's king stops White's from going to g7 or g8, the extra pawn is worthless and it is a draw. Try it – it won't take long to be convinced. Next, substitute a Knight for the pawn on h2:

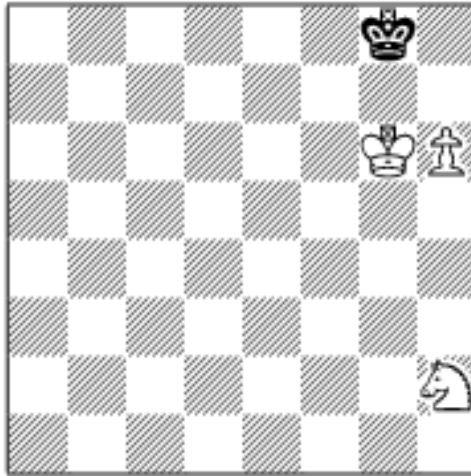


White wins easily with either player to move. He should follow another good general rule for single pawn endgames: *When in doubt, don't push the pawn (especially, as in this case, to the 7th rank)! You can always do that later, even if the position gets repeated once. But if you push the pawn too far too fast, in many endgames you can throw away the win. In the*

above position White has to force the Black king off the 7th rank (zugzwang), cover h8 with the knight (easiest from f7 with the king on g6, a good setup to learn), and then push in the pawn: **1.Nf3** The knight heads for g5, where it stops Black's king from going back and forth on g7-h7. **1...Kg7 2.Ng5 Kg8 3.Kg6 Kh8 4.Nf7+ Kg8** Only now is it time for the pawn: **5.h5 Kf8 6.h6 Kg8 7.h7+ Kf8 8.h8Q+**. Suppose Black moves first – then the win is almost as easy

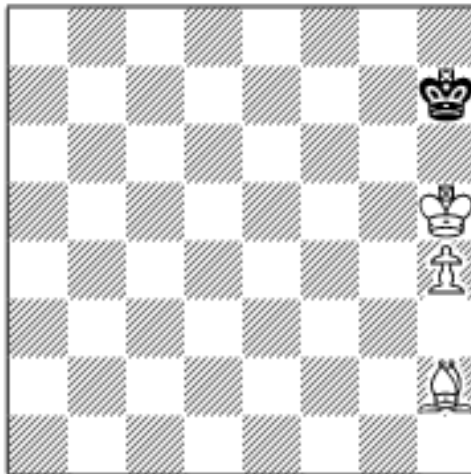
except you should push the pawn to gain a tempo, but don't push it to the 7th rank until you are ready and sure! **1...Kg7 2.Kg5 Kh7 3.h5 Kg7 4.h6+ Kh7 5.Nf3 Kg8 6.Kg6 Kh8 7.Ng5** We see the same Kg6 and Nf7 strategy to force the Black king away from the corner. **7...Kg8 8.Nf7 Kf8 9.h7** Ready! Sure!

The following is an example of pushing the pawn too fast. Suppose it is White to move:

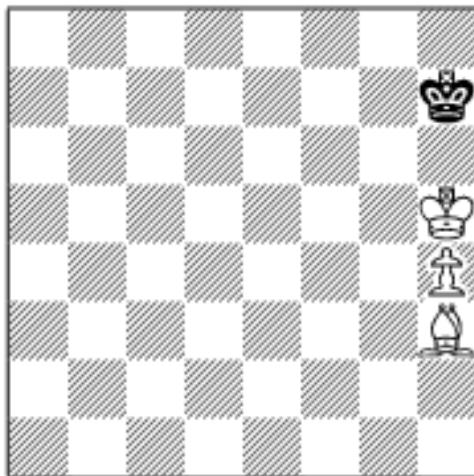


Instead of correctly maneuvering the knight to f7, if White plays **1.h7+?** then after **1...Kh8** White has to abandon the pawn or allow stalemate with **2.Kh6**. Draw.

With a Bishop on h2 the win is easy once the Bishop guards g7 and h8:



So **1.Be5 Kg8 2.Kg6 Kc8 3.h5** etc. However, this only works because the Bishop is on the same color as the pawn's promotion square. If the Bishop is on the opposite color, this is another exception: the infamous "bishop and wrong color rook's pawn draw":

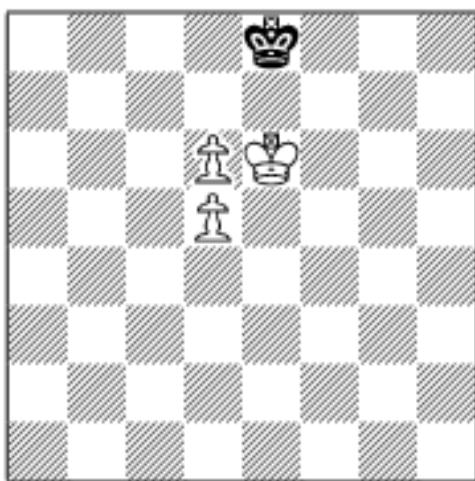


So long as the Black king has access to h8, this type of position is drawn. Consider the logic: If the King is on h8 then nothing can check it; if it is on an adjacent square to h8, then h8 can also never be attacked to prevent it from going there. If the black King is on h8 and you take away all the adjacent squares, then it is a stalemate. If you don't take away all the

squares adjacent to h8, it has a place to move and next move it can go back to h8: Draw! Try it if that helps you understand and remember.

If the defending King is *near* the corner (has enough time to reach the pawn), there are cases where the king, rook's pawn, and wrong color bishop can cleverly prevent the opponent from getting to the corner, but we don't have space to cover these. Suffice it to say that if you can block it and don't, you are throwing away the win!

Now suppose the extra "thing" in K&P&? vs. K is a pawn that is so far advanced that it can only help stalemate:

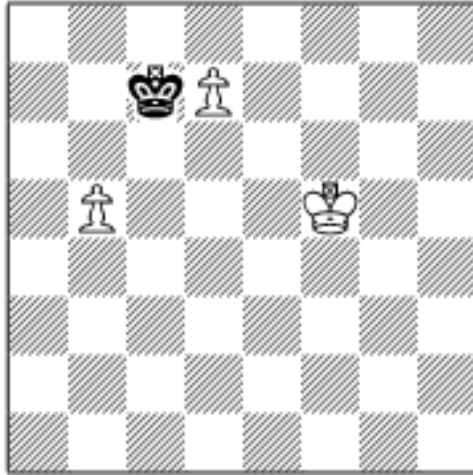


Here is the other major exception, and the one without a rook's pawn: White has no flexibility, and with the move cannot win because of stalemate possibilities. First, the straightforward **1.d7+ Kd8 2.Kd6** (or 2.d6) is stalemate. But White cannot even sacrifice the pawn to reach a tic-tac-toe win (see my December 2001 Novice Nook column,

"Techniques"). If he tries **1.Ke5** then **1...Kd7** wins the front pawn with an immediate draw. If **1.Kf6** (or 1.Kf5) then **1...Kd7 2.Ke5 Kd8!** (but not 2...Ke8? 3.Ke6 Kd8 4.d7 Kc7 5.Ke7 wins) **3.Ke6 Ke8** repeats the position and draws.

The most extreme and advanced example of a winning position

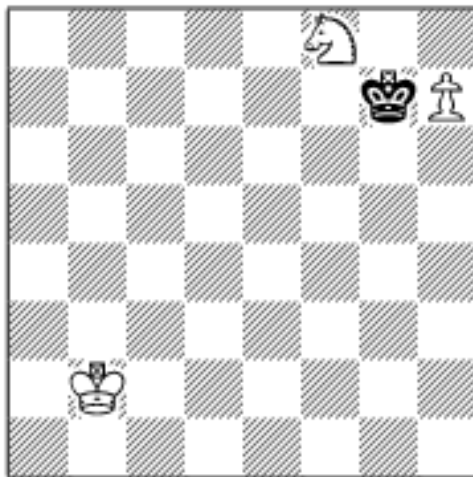
where the offensive king is near the pawns and stalemate is a possibility comes from an elegant study by E.Pogosiants in 1961:



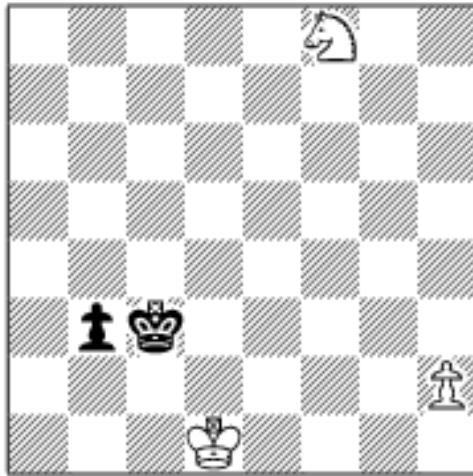
This looks very much like the above example since the natural **1.Ke6 Kd8 2.b6?** (or **2.Kd6?**) is stalemate just as in the previous diagram. The only difference seems to be that the b-pawn is stalemating instead of the doubled d-pawn. But vive la différence! Instead White plays **2.Kd5!** Now if Black does not take the d-pawn immediately, he loses quickly, e.g., **2...Kc7**

3.Kc5 Kxd7 4.Kb6 and **5.Ka7** wins. So Black puts up the most resistance with **2...Kxd7** hoping for **3.Kc5? Kc7** with a draw as seen in the first problem. But White still wins with **3.b6!** taking the opposition no matter how Black retreats, e.g. **3...Kd8 4.Kd6** (but again not **4.Kc6 Kc8** with a draw – you must be careful!) **4...Kc8 5.Kc6 Kb8 6.b7 Ka7 7.Kc7** and the rest, I hope, is easy.

In the positions we have considered thus far the offensive player's King is able to immediately guard his pawn and thus follows one of the requirements for our rule. But suppose the King is far away; then the rule does not apply. If the "other" piece is a Knight that is able to guard the pawn *from behind*, it will be a win anyway since the Knight cannot be captured without the pawn promoting. In the following case, even though the Knight is in front and is safe, White's pawn is already too far advanced and it is a draw no matter who is to move:



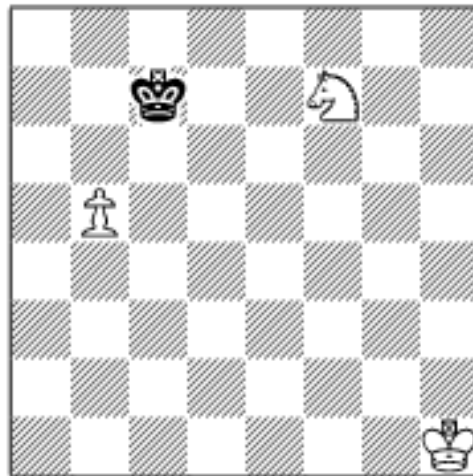
Black dares not capture the Knight and must shuffle back and forth between g7 and h8. However, if White's King ever guards the pawn when the black King is on h8 (he cannot do so when it is on g7!), it is a stalemate so he cannot make progress. Draw. To combine these themes into a more practical setting, I created the following problem:



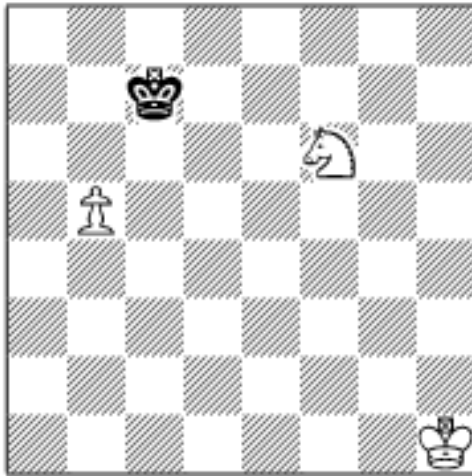
White to play and win. The first move is easy: **1.Kc1** to stop the pawn. Now **1...b2+ 2.Kb1** is a waste of time for Black, so he should immediately set out to stop White's pawn: **1...Kd3** No sense in allowing **1...Kd4 2.Nd6+** since the King will be "inside the promotion square" after **1...Kd3** anyway. **2.h4 2.Ng6** can transpose. **2...Ke4 3.h5 Kf5 4.Ng6!** but not **4.h6??**

Kf6 5.Kb2 (**5.h7 Kg7** is the same thing) **5...Kf7 6.h7 Kg7** and draws as in the earlier example! **4...Kg5 5.Nf4!** Now the black King cannot capture either the white Knight or pawn and since there is no stalemate looming, White wins after capturing the b-pawn as shown before.

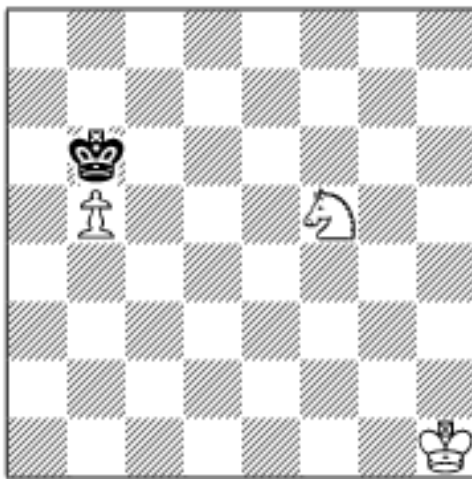
This idea does not require a rook's pawn. For example, the following is a draw with either player to move:



Here White cannot guard the pawn with the Knight from behind, so it is a draw: **1.Kg2 Kb6 2.Nd6 Kc5** and the double attack will eventually win the pawn and draw. But put the Knight on f6 instead and it wins easily: **DIAGRAM**



1.Ne4 (1.Nd5+ works too, but 1.Ne4 is conceptually simpler)
1...Kb6 2.Nc3 and wins since if the black King goes to c4 to attack both the Knight and pawn, the pawn just promotes. So Black is stuck and White has time to advance his King and win as shown in the early examples. If the Knight can get to d4, this also works:



1.Nd4! (but not 1.Nd6? Kc5 and the Knight is in front of the pawn!) **1...Kc5 2.Kg2!** Take the Knight if you want it! White again wins easily by approaching with his King.

If the extra piece is a Bishop it can win (without a rook pawn of the wrong color!) even if it guards the pawn from the front, since the pawn can also guard the Bishop. Rooks and Queens of course don't even need pawns...

Dan welcomes readers questions; he is a full-time instructor on the ICC as Phillytutor.



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