

This is the draft Chapter 4 of my planned book, *The Chess Memory Palace*. Previous draft chapters can be found here:

- Chapter 1 (*Picture Notation, A Mnemonic System for Chess*) and the Appendix (*Picture Words for all 64 Squares*) at <https://johnden.org/picturenotation>
- Chapter 2 (*Essential Memory Techniques*) at <https://johnden.org/papers/essentialmemorytechniques.pdf>
- Chapter 3 (*Memory Palace Architecture*) at <https://johnden.org/papers/tcmp-chapter3.pdf>
- Chapter 7 (*Miscellanea*) at https://johnden.org/papers/tcmp_chapter7.pdf

Please ignore the broken references to other chapters. These will be fixed in the final version.

John Holden, August 2022

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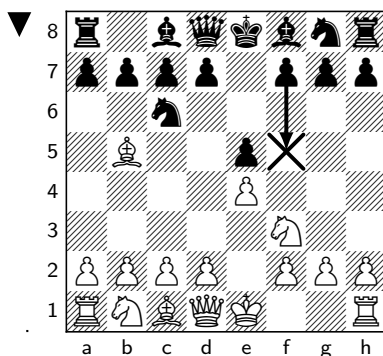
Example Palace: The Schliemann Transit Line

In this computer age, engines might be able to show the way to a White plus versus the Schliemann. Fortunately, most mortals do not have the prodigious memory required to recall what the engine proposes to reach that plus[.]

Junior Tay, The Schliemann Defence move by move

In this chapter I present an example memory palace. Beginning with the repertoire, I show how I would map the tree diagram onto a setting and memorise the composite images. This puts the theory from Chapters ?? and ?? into practice.

I have chosen a repertoire as White against the Schliemann Defence to the Ruy Lopez, which arises from 1.e4 e5 2.Nf3 Nc6 3.Bb5 f5. I present a “pure main line” repertoire: playing White’s most popular move against every common try by Black.



If you don't want to memorise this repertoire, treat this chapter as a worked example to follow when memorising your own openings. If you do want to memorise this repertoire, you can be confident it will take you to a good position – but be sure to study the end position of each line, and the principles of the Schliemann, so that you know what plan to follow when you reach the end of your memory palace.

Step 1: Draw the tree diagram

In Step 1 we take the repertoire and draw a tree diagram.

Figure 1 shows this neatly with algebraic notation, so that you can see the repertoire in full. Each move pair contains Black's move followed by White's reply, because from White's point of view we are responding to Black's moves.

Whenever more than one piece can move to the target square, I have written the candidate piece number in Roman numerals. For example, Nxe5(II) means that the knight is candidate piece II. (Refer back to Chapter ?? if you need a refresher on candidate pieces.) This will remind me to choose a two-syllable picture word when I get to Step 4.

Figure 2 shows the same tree diagram, but just with dots and lines (and starting from the bottom of the page rather than the top). I find this easier to manipulate and fit to a setting.

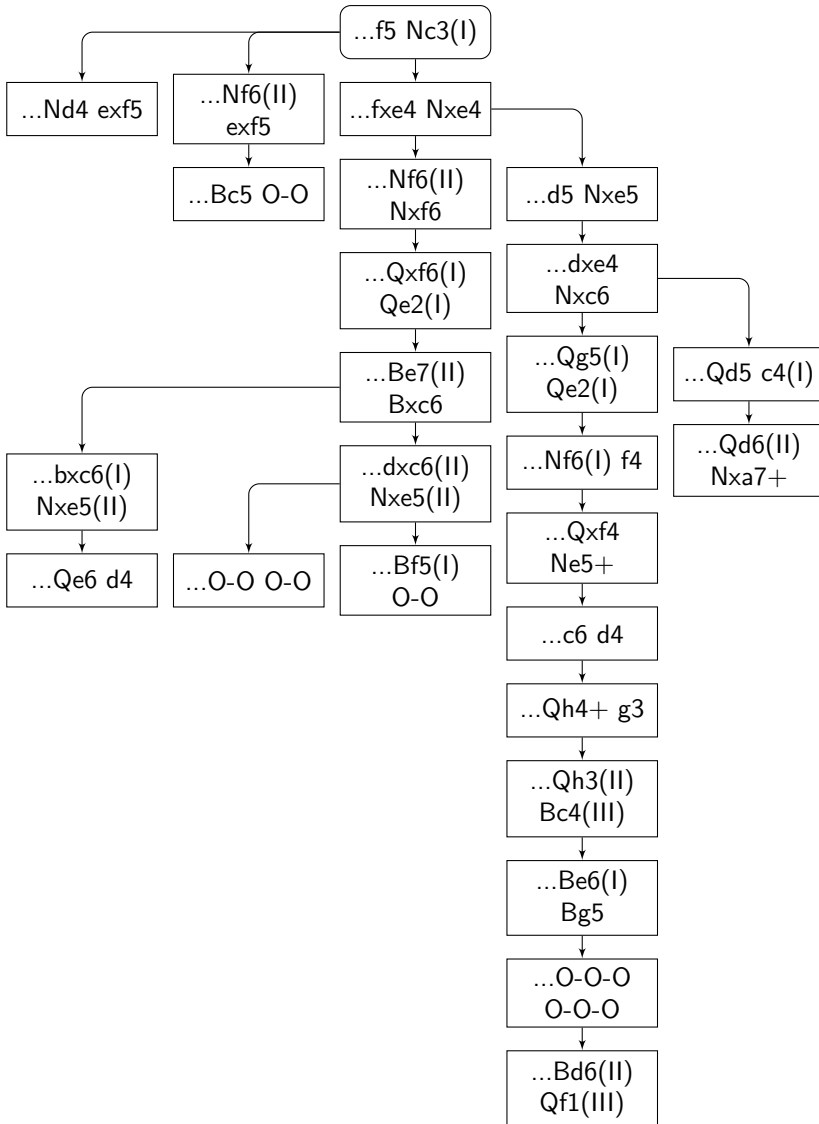


Figure 1: White v Schliemann Defence, tree diagram with algebraic notation

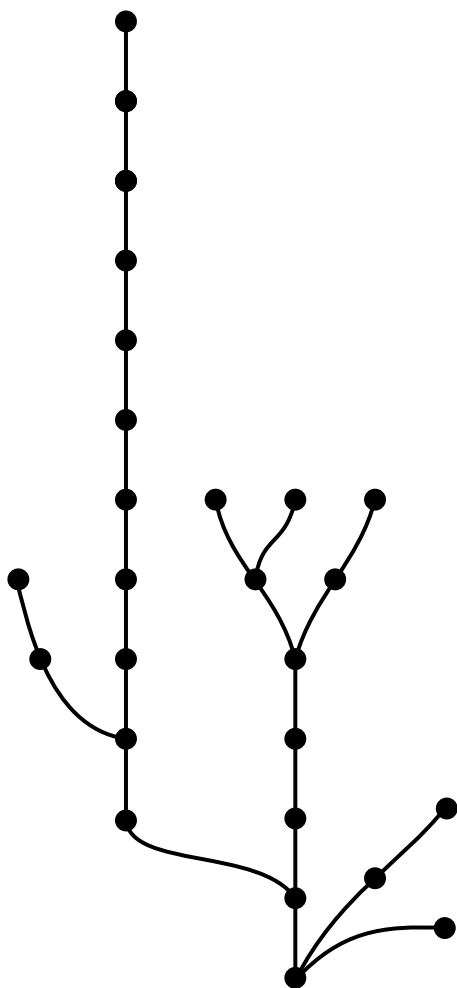


Figure 2: *White v Schliemann Defence: Minimal tree diagram (start at the bottom)*

Step 2: Choose the setting

Considering the shape of my tree diagram, I notice that it splits roughly in half after the move pair ...fxe4 Nxe4. The variation beginning ...Nf6 Nx6 divides quickly into several short branches, while the variation beginning ...d5 Nxe5 mostly contains a long forcing line.

I think a good setting for this will be an urban transit line. I can begin at a station entrance. The little variations can be various shops and distractions on the station concourse and platforms. The long forcing line can be a linear journey along the subway to a different station.

Specifically, I am thinking of Waterloo Station in London. Waterloo has a large concourse with shops, platforms for overground trains, and an escalator leading down to the back of the station and the London Underground. This part of the palace can take me on a tube train to West Ham, a route I know well.*

Step 3: Map the locations

In Step 3 we map the tree diagram onto the setting, so that each move pair gets a specific location. I like to begin with the big picture and then work my way to smaller areas.

For the Schliemann repertoire, after trying a few options, I settle on a division into five areas (Figure 3):

- Area 1. The initial sequence of four move pairs from ...f5 Nc3 to ...Qxf6 Qe2 can be the Waterloo Station (South Bank) entrance and concourse.
- Area 2. The cluster of variations beginning ...Be7 Bxc6 can be the overground platforms and trains.
- Area 3. The early short variations, starting ...Nd4 exd5 and ...Nf6 exd5, can be a couple of shops by Waterloo Station entrance.
- Area 4. The other main variation, beginning ...d5 Nxe5, can begin at the back area of Waterloo Station where there is a short es-

*If you are not familiar with this particular setting, I hope this repertoire will be easy to transpose onto a station and urban transit line that you do know.

calator to a fast food outlet and the entrance to the London Underground.

- Area 5. The forcing line beginning ...Qg5 Qe2 can be a journey on the London Underground to West Ham.

Once I am happy with the general areas of the setting, I identify a location for each move pair. Proceeding through the five areas (Figure 4):

- Area 1. After passing through **Waterloo entrance**, Area 1 houses a sequence of three more move pairs through the station concourse. If I were catching a train, I might visit in turn the **information booth**, the **ticket dispenser**, and a **pastry kiosk**.
- Area 2. This area houses a few variations around the platforms. It makes sense to enter Area 2 at the **ticket barriers**. Then I could continue walking to the **platform end** and (in imagination only!) down onto the **train tracks**. Alternatively, after going through the ticket barriers I could get on a train, starting at the **train doors**, then turning left into the **train carriage** or right to the **train toilet**.
- Area 3. This area houses a one-move variation and a two-move variation in some shops. I will put the one-move variation in a **bookshop**, and the two-move variation in an express supermarket, at the **confectionery aisle** and the **self-checkout**.
- Area 4. Area 4, facing away from the platforms, begins by going down a short **escalator** with a **newspaper stand** at the bottom. Now I can turn right[†] to buy a meal at the **fast food counter** to the fast food outlet, then to the **condiments** to add ketchup, or instead I can turn left to Area 5.
- Area 5. This area houses a sequence of nine move pairs on an Underground journey to West Ham. I begin at an **elephant sculpture**, continue down the long escalator to the underground **platform**, walk all the way to the end of the platform where I

[†]I do not need to be constrained by the tree diagrams which show this path branching to the left (Figures 2 and 3). They are diagrams, not maps.

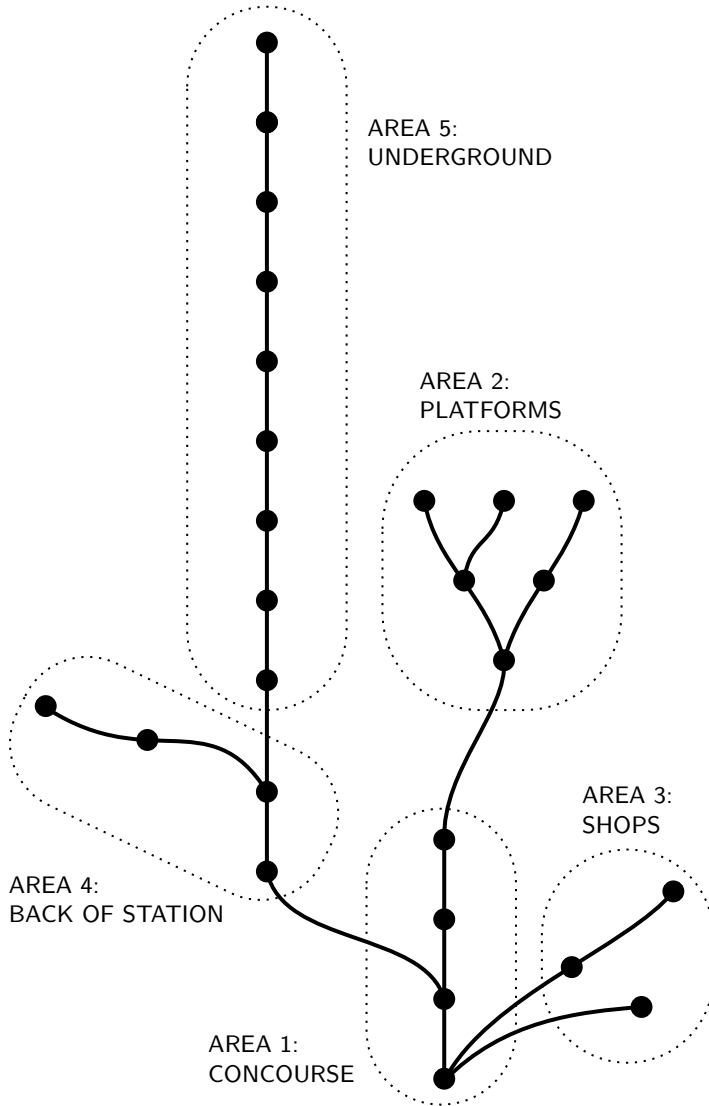


Figure 3: White v Schliemann Defence: Interim stage, tree diagram with areas marked

can see the **train tunnel**, then I get on the **tube train** when it arrives. After a few minutes I get off again, onto the outdoor, sunny **West Ham platform**. I cross the **bridge** with frosted glass to the exit. I walk through the **automatic doors** and past the **taxi rank** to the **bus stop**.

This works well. The tree diagram has mapped onto the setting in a logical way, with clear paths. I am now able to draw out the tree diagram from memory by walking through Waterloo Station in my imagination.

Step 4: Select the picture words

Each of the locations needs two picture words, showing our opponent's (Black's) move followed by our reply.

The first move pair is ...f5 Nc3. Both moves need a one-syllable picture word. Looking at the Appendix, the options for f5 are *chalk*, *gel*, and *shell*. My favourite is *shell*. The options for c3 are *mime*, *meme*, and *mumps*. My favourite is *mime*.

I will not bore you by explaining my choice of every picture word. The Appendix lists options for each square and number of syllables, with my favourite in bold. Figure 5 shows the tree diagram again, labelled with my picture words.

Step 5: Memorise the palace

Now we have two picture words for each of the 26 locations in our setting. It is time to memorise them!

Recall from Chapter ?? that each location will become a composite image. The first picture word will be higher than the second picture word, and either doing an action to it or using it as a tool. Both picture words will interact with the location. The overall composite image should be funny, emotional, bold, dynamic, and/or shocking.

This step is quite personal, depending (as always) on your own experiences and associations. For each location I will describe a composite image. I trust you to exaggerate it, play with it, even change it completely to be memorable to you!

Let's begin!

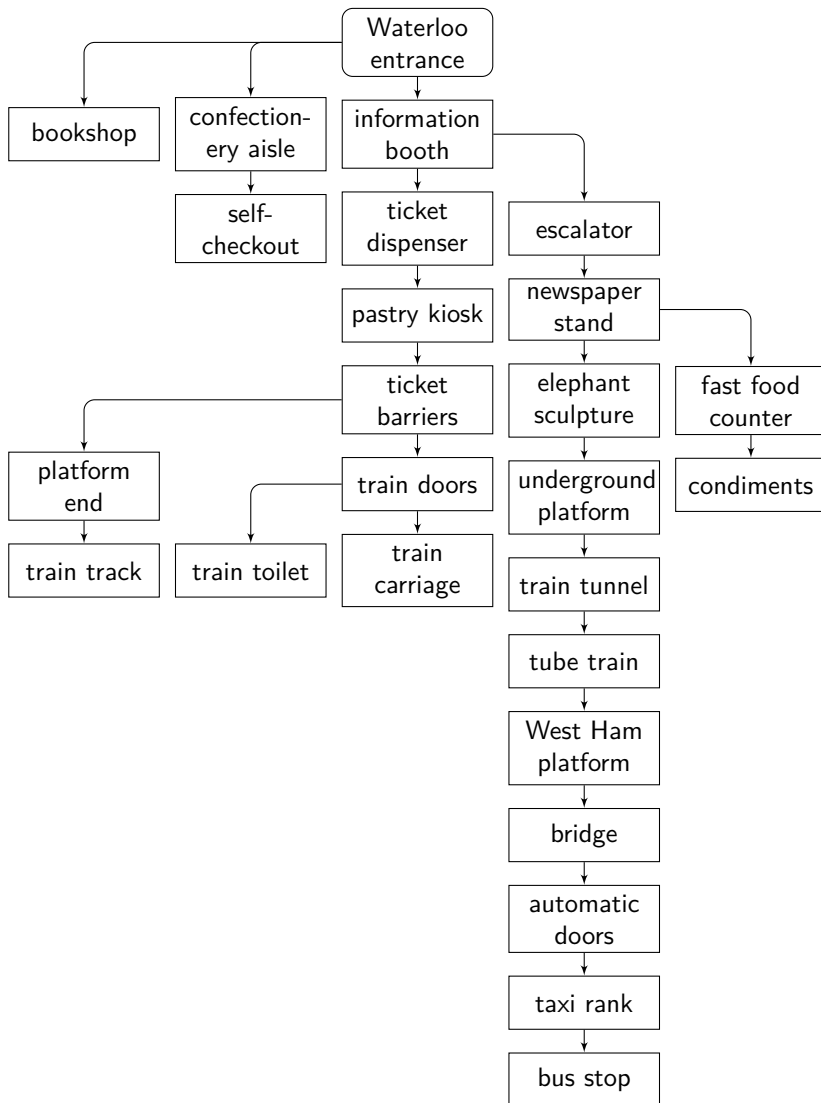


Figure 4: White v Schliemann Defence, tree diagram with locations

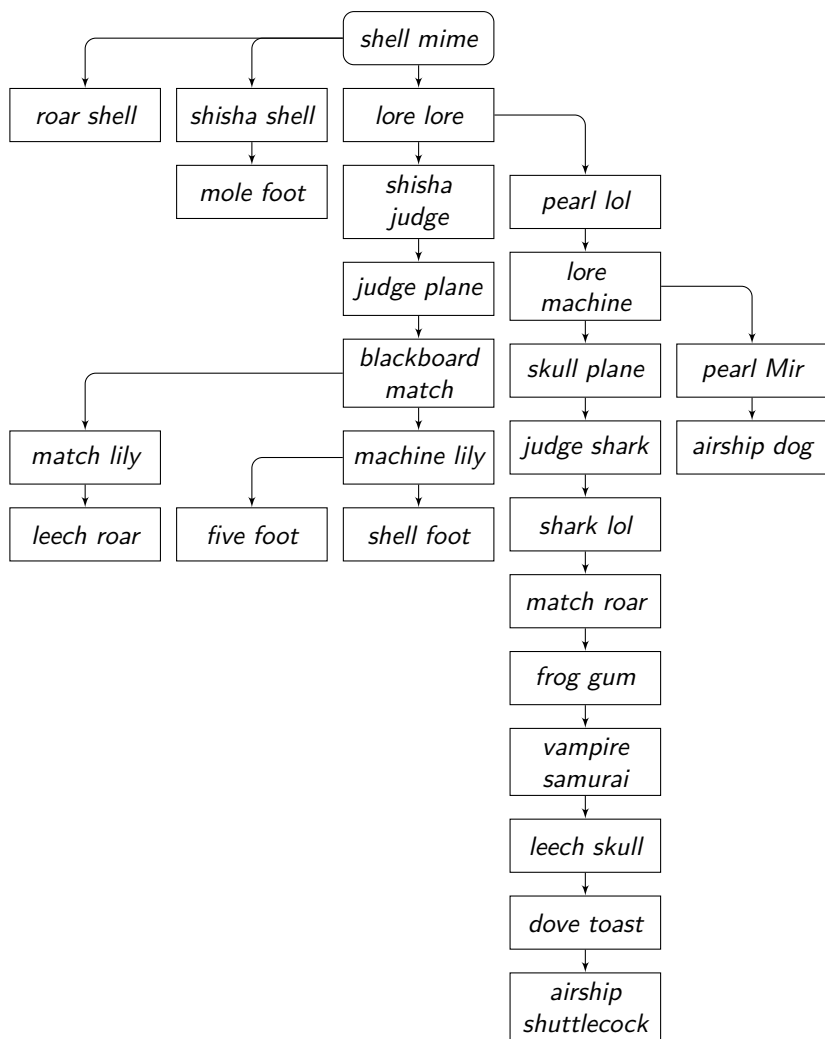


Figure 5: White v Schliemann Defence, tree diagram with picture notation

Area 1: Waterloo entrance and concourse

1. A giant shell has been fixed as a decoration above **Waterloo entrance**. A mime (street performer) is performing by the doors to earn some money, and accidentally knocks the it, causing the *shell* to fall on the *mime* and completely cover his body. The shell starts to shuffle back and forth as the mime continues his performance inside.
2. You want to catch a train, so you head to the **information booth** to find out where to go. One book of *lore* and a second book of *lore* have been hired to give out information, since they are full of it, but the two rambunctious books have had a disagreement over spelling and are tearing each other apart. The information booth becomes a blizzard of loose pages.

Here there are two choices: continue towards the overground platforms and trains, or head towards the back of the station and the London Underground. For now we will follow the overground route, so it's on to the ticket dispenser...

3. You go to buy a ticket from the **ticket dispenser**. A judge is in the queue ahead of you, and seems to be having some bother. The ticket dispenser, which towers over the judge, is not only "out of order" for dispensing tickets, it has transformed into a shisha (hookah) instrument! The *shisha* hose is wrapped around the *judge*, and smoke is billowing everywhere, making the judge cough so hard her wig falls off. She feebly fights back with her hammer.
4. You need a snack for the journey so you head to the **pastry kiosk**. Another judge is ahead of you. This *judge* has given up on the trains and is flying around on a model *plane* instead, sitting astride the plane and hitting it with her hammer like a jockey whips a horse. She is flying well until she crashes into the pastry kiosk and ends up in a heap of cinnamon buns.

Area 1 is complete! Do a quick review. Can you remember all eight picture words in the right order?

Area 2: The platforms

5. You have your ticket and your pastry. Time to get a train. First you need to go through the ***ticket barriers***. A previous traveller has left a blackboard leaning against the gates, and a match burning away on the ground. You worry it will set light to your shoe. As you push past, the *blackboard* falls onto the *match* with a thump. A cloud of chalk briefly fills the air, and the match is extinguished.
6. You had planned to catch a train, but suddenly you are enticed by the fresh air. So you lollop down to the ***platform end***. Few people come this far, and a lily has taken advantage by cracking open the platform to grow up like a weed. You decide to do a public service by taking a match from inside the lily's petals (where it must have got stuck as the lily grew), lighting it by scraping it on the concrete platform, and using the *match* to burn the *lily* to ashes.
7. Using the burning lily as a smokescreen, you jump down onto the ***train tracks***. You would think the main danger is trains – but no! A lion is taking a siesta in the sunlight, on the tracks. You hope it will stay asleep while you escape, but a fat *leech* drops off a pole and starts sucking blood from the lion's back. It wakes with a terrifying *roar*.

Let's go two steps back. Instead of this flight of fancy down the platform, you wanted to get a train, didn't you?

8. After traversing the blackboard and match by the barriers, you see your train. Sitting between the ***train doors***, a *machine* is rumbling and cranking and manufacturing a *lily*. The machine is a steampunk-style contraption with bells and whistles, levers and buttons, dials and pistons. The lily's stem and leaves are continuously growing (or being manufactured?), winding around the doors and down through the gap to the train wheels.
9. Unperturbed, you climb over the machine and lily, then turn left into the ***train carriage***. A monopod (a mythical creature with one huge foot) is sitting deeply on a cushioned seat, rudely resting his big bare foot on the chair opposite. His leg is under the table – which is not really a table at all, but a shiny cockle shell. The

monopod knocks the shell with his knee; it shatters, one piece of *shell* stabs into his smelly *foot*, making him yelp in pain.

Now let's go one step back again.

10. After climbing past the machine and lily into the train, this time you turn right to the ***train toilet***. The toilets are kept so clean that a seahorse was happily living in the toilet bowl – but unfortunately this gives someone an idea. A monopod hops into the toilet bowl with his big dirty *foot*, splashing you and the rest of the room, then he grabs the seahorse (*five*) and uses it to scrub clean the sole of his foot.

This completes Area 2. Unlike Area 1, Area 2 has some branching paths. Try to draw the layout, then compare it with Figures 4 and 5.

Area 3: The shops

In these variations you aren't going to Waterloo for a train at all, but to visit the shops. After you walk through the entrance, past the shell falling on the mime, there are two shops immediately to the side: a bookshop and an express supermarket.

First let's visit the bookshop.

11. You walk into the ***bookshop***, seeking both a book and a calm experience. You see a lion perusing the shelves, stroking the books with its whiskers. A beautiful shell is perched on a pile of books for customers to use as a paperweight. You pick it up – which is a big mistake, for the lion was using it to keep track of the pile books it wants! The lion *roars* and pounces, crushing the *shell* beneath its terrible claws.

Now, instead of visiting the bookshop, let's get a snack from the express supermarket.

12. To your surprise, the ***confectionery aisle*** is full of smoke – it has been turned into a shisha bar! This time the *shisha* hose is wrapped around a spiral *shell*, scraping it on the floor and tanning its surface with smoke.

13. You grab your favourite chocolate and head to the **self-checkout** to pay. A *mole* and a monopod (*foot*) want to use the self-checkout, but the mole is too small and the monopod can't get close enough because its big foot is in the way. They work as a team: the mole scampers up the monopod's hairy foot, up its leg, and onto its head. The mole swings from the monopod's hair until it lands on the self-checkout, scans both of their purchases together, and then, unnecessarily but true to its instincts, digs a hole into the self-checkout's interior.

If you have been visualising each composite image, good work! We are exactly halfway through the memory palace. Take a break before returning for the next 13 scenes.

Area 4: The back of Waterloo Station

On the opposite side of Waterloo Station to the overground platforms, there is a short escalator that leads down to a back exit (by Waterloo Road), fast food shop, and entrance to the London Underground.

In the memory palace, we enter this area after taking advice from the two books of lore at the information booth. (The other option was to head to the ticket dispenser.)

14. Just as you are about to get on the short **escalator** to go down, a jester arrives at the same time. After a moment's awkwardness, you usher the jester onto the escalator ahead of you. Typically, he doesn't stand still, but performs headstands and other tricks – rather dangerously, you feel. At that moment, you hear a thudding noise approaching from behind you. Someone has dropped their football-sized pearl, and the gleaming white object is bouncing down the escalator. You dodge out of the way, but the *pearl* bounces up onto the jester's (*lol*) stomach and knocks him over, eventually landing on top of him.
15. At the bottom of the escalator, a book of lore wants to reduce its competition by destroying the **newspaper stand**. Using its pages like papery-hands and bracing itself against the wall with its spine, the book of *lore* pulls levers and presses buttons on the *machine* to cut the newspaper stand into small pieces. Sparks fly everywhere.

After the newspaper stand, you can turn left to the London Underground – but this time we will turn right, to the fast food outlet.

16. You walk up the **fast food counter** to order a meal. The server looks like a humanoid robot – in fact it is Mir space station! On the counter is another football-sized pearl. With sudden inspiration, you throw the pearl to Mir as your payment. But to your horror Mir fails to catch it; instead the *pearl* crushes *Mir*'s robotic head.
17. Putting this out of your mind, you go to the **condiments** shelf for ketchup. An *airship* pilot is also making a visit. Apparently she has decided to walk her *dog* without getting out of the airship. She floats the craft into the shop, the dog below her on a lead that dangles from the airship cabin. The dog wants some condiments. It rubs against your legs and barks, until the *airship* bumps into the condiments and releases a blob of ketchup onto the *dog*'s nose.

Backtracking two locations, now let's take a London Underground trip to West Ham instead of getting waylaid by the fast food outlet.

Area 5: Underground journey to West Ham

Only one area to go. Area 5 is the largest, but it is a simple linear shape with no branches.

18. At the top of the long escalators down to the London Underground, there is an **elephant sculpture**. But today, the elephant's head has been replaced by a menacing-looking skull. In its grimacing teeth it is holding a plane. When it sees you, the *skull* shakes (with a rattling sound) and launches the *plane* like a glider at your head. You duck and sprint away down the long escalator, as the plane crashes into the handrails.
19. On the **underground platform**, a shark is flapping about, slamming into the glass that guards the rails, terrifying passengers. A *judge* judges the *shark*, chasing it around the platform, whacking the shark's fins with her hammer.
20. You walk along to the very end of the platform to the **train tunnel**. Inside the tunnel, lit by the fluorescent underground lights, is a

disturbing site: another *shark* is munching its way through a jester (*lol*). The shark braces its tail against the side of the tunnel for grip. Bells from the jester's hat roll over the tracks with a sad last jingle.

21. The **tube train** arrives. You get on, and immediately regret it. A lion tamer is inside, with his pet lion on a lead. The tamer tries to show off how docile the creature is by lighting a *match* (by scraping it against a seat) and burning the lion's mane. The mane catches alight completely, the lion *roars* and bites one of the poles. You can barely breathe through the heat.
22. In a short time the tube train arrives at the outdoor **West Ham platform**. A *frog* is sitting placidly on the concrete, chewing and blowing a bubble from *gum*, which bursts and leaves sticky goo on the platform. As you step off the train into the gum, with a squelch, the frog hops past you into the tube train.
23. When leaving West Ham Station, you cross a **bridge** that is naturally lit through frosted glass. Two of your fellow commuters overtake you. First comes a samurai in thick armour. Behind him is a vampire – Count Dracula himself. The *vampire* jumps on the back of the *samurai*, knocking him into the frosted glass with a shout, and bites the samurai's neck.
24. You reach the **automatic doors** to leave West Ham Station. The doors are unable to close because a skull lies in the middle of the exit, being feasted on by a leech. The doors keep attempting to close, squishing the leech more each time, but the *leech* remains stubbornly attached to the top of the *skull*.
25. Directly outside the station is a **taxi rank**. What is this – a flying piece of toast!? As the toast flaps past you, you realise it is a *dove* with a square piece of *toast* on its beak. The dove lands on a taxi, much to the taxi driver's annoyance, and proceeds to rip apart the toast, spreading crumbs all over the road.
26. Beyond the taxi rank is the **bus stop**. An airship is moored there, its anchor rope tied to the seats and its nose bumping against the bus stop sign. The *airship* pilot is playing badminton, hitting a

shuttlecock out of the cabin window. It hits you on the nose and gets stuck on the bus route map.

Reviewing

This is the end of the memory palace. How did you find it? If you are an experienced mnemonist, you probably remembered almost everything on the first attempt. If this is your first time, it will feel very strange. Some images will come back clearly, while others will be murky and indistinct.

This is okay! Use the guide in Chapter ?? to troubleshoot any images you got wrong. It might be my fault: the scenes I described might not be memorable for you. If so, take the picture words and location, and make a new composite image to your own tastes. Every time you review you will remember a little more. Very soon the whole palace will stick.

Extending the palace

As you continue playing and learning the Schliemann, you may wish to add new moves to your memory palace. If you want to add a new option for *yourself*, we will see in Chapter ?? how to add options using a ladder. If you want to add new variations initiated by your *opponent*, these can either be extensions to paths at the edge of your memory palace, or new paths branching out from existing paths in the middle of your memory palace.

Adding new moves to the end of an existing variation is easy: you just need to extend your memory palace path with a new location. For example, perhaps after *shell foot* (9...Bf5 10.O-O) in the **train carriage**, I want to memorise what to do if my opponent plays *five* (10...O-O): I plan to respond *roar* (11.d4). Can I find a new location beyond the seats? Yes, there is the **train luggage rack**. So I would visualise a seahorse (*five*) pushing its luggage into a lion (*roar*).

If I wanted to memorise even more moves in this variation, I could continue into the centre of the carriage, then the gap between the carriages, then perhaps the guard room, the engine, break out of the engine onto the train roof... I can always add an extra location.

Adding a new variation early in your repertoire is not too hard either,

but you might need to be creative with the setting. For example, after *judge shark* (8...Nf6 9.f4) on the **underground platform**, about 90% of masters continue with *shark* (9...Qxf4), which I already memorised on the **train tracks**. However, about a third of amateurs play *frog* (9...Qh4+) so I might want to memorise the best continuation: *gum, vampire lol* (10.g3, Qh3 11.Ne5+).

This is a bit awkward because I am on the London Underground, so there isn't a natural branching point in the setting. However, in my imagination I can create a new path that doesn't exist in reality. Perhaps the next location will be one of the **adverts**, where a *frog* is chewing *gum*, and then I will break through the advert to a **secret tunnel** beyond, where a *vampire* bites a jester (*lol*).

In reality, I wouldn't memorise this sideline because the moves are fairly obvious. That is why I put the long forcing variation in a linear area of the setting (the London Underground) in the first place! I am more likely to add new variations back in Waterloo Station, or onwards in West Ham Station where, not by coincidence, it is easier to add new memory palace branches.

Notes

Chapter 4

1. *The Schliemann Transit Line*: It is helpful to give your palaces (and even locations) names. This makes their contents more memorable.

There is some research to suggest that verbal knowledge of openings and plans is more predictive of chess skill than standard chess position memory, perhaps because the verbal knowledge encodes plans, although causation is unclear. Douglas Pfau & Martin Murphy (1988) Role of verbal knowledge in chess skill. *The American Journal of Psychology*

Many indigenous peoples are also meticulous about naming every location in their environment and song lines. Lynne Kelly (2016) *The Memory Code*. Allen & Unwin, chapter 1

2. “*In this computer age*”: Junior Tay (2018) *The Schliemann Defence move by move*. Everyman Chess, page 7
3. *example memory palace*: Not many books contain entire ready-to-use memory palaces, with the notable exception of Ed Cooke (2008) *Remember, Remember: Learn the Stuff You Thought You Never Could*. Penguin UK

It appears that authors (including the author of the ancient *Rhetorica ad Herennium*) are reluctant to share too many images, because images are most memorable when you invent them yourself, based on your own associations and experiences. This is certainly true, but only if (a) you would actually make the effort to design your own

images and memory palace, (b) your images would be comparable in effectiveness to the author's, and (c) there is no social value in sharing a memory palace with others.

This third condition is the most interesting. I have personally seen the benefits – both for my memories and for my friendships – of preparing for exams by building memory palaces with friends, just as the Italian Jesuit priest and missionary Matteo Ricci (1552-1610) created memory palaces with his friend Lelio Passionei, and still reflected on them two decades later. Jonathan Spence (1984) *The Memory Palace of Matteo Ricci*. Elisabeth Sifton Books, page 135

Similarly the locations, ceremonies and songs of Aboriginals are shared among groups, even though each performer brings their own slightly novel interpretation. Margo Neale & Lynne Kelly (2020) *Songlines*. Thames & Hudson, page 93

I have suggested picture words in the Appendix to facilitate sharing memory palaces, or at least sharing tree diagrams labelled with picture words. The hardest aspect of sharing memory palaces is the setting, as two strangers are unlikely to know any shared settings except for generic places like airports.

4. *a "pure main line" repertoire*: To be precise, playing the most popular White reply to every Black move that has been played 50+ times, in the Lichess Masters Database as of 1 August 2022. Not every White move is the computer's top choice.
5. *take a break*: The Primacy Effect and the Recency Effect describe how we remember better the information presented first and last in a study session. Amongst other benefits, taking breaks creates more beginnings and ends to take advantage of these effects.
6. *fluorescent underground lights*: The *Rhetorica ad Herennium* teaches that the locations should be neither too dark nor too bright, so that the objects are obscured by neither shadows nor glare.
7. *90% of masters ... a third of amateurs*: According to the Lichess database, August 2022.