Remembering intentions

HOW TO REMEMBER FUTURE ACTIONS AND EVENTS

By Dr Fiona McPherson

www.memory-key.com

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1 Introduction

Memories are made of this

Memories are codes

Memory is commonly portrayed as if it was a photographic record, as if everything we have ever experienced is faithfully recorded, blow by separate, exquisitely detailed, blow. But this is not true, and if you are to improve your memory skills you need to understand that this is not true. You need to understand that memory is not complete, and not a replication.

Memory is selected.

Selected, twisted, constructed, and re-constructed.

And very personal.

I like to talk of "memory codes" rather than "memories", because it constantly reminds us that memories have been created. That *we* have created them.

Memory is a network of codes. We create the codes, and whether or not we can find them again (remember them) depends on how well we constructed them.

My memory code for "cat" is different from your memory code for "cat", although both of us agree on what a cat is. Mine will include information about Pushti, a black part-Persian, with a lovely fluffy tail, that was the first family cat I remember. It includes memories of Dinah Pyewacket, my grandparents' cat – a Siamese who had farex (a sort of baby porridge) for breakfast, and used to sit on my grandfather's knee in the evening. It includes my opinions of cats (kittens are of course adorable, but I'm more of a dog

person), my (limited and probably inaccurate) knowledge of Egyptian cat-goddesses, the kinesthetic memory of a cat's claws, as well as "general knowledge" about cats — that they're mammals, that they're furry, that they come in numerous varieties, etc.

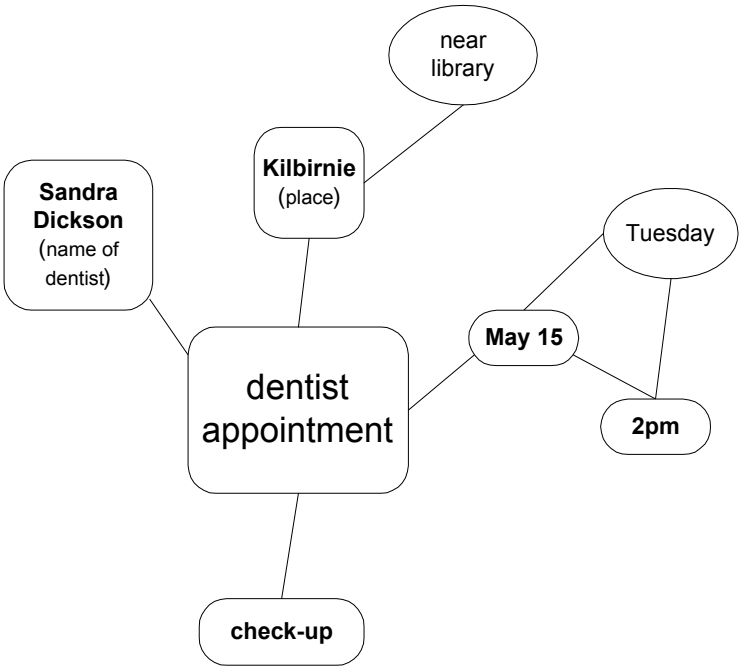
You and I will share much of that general knowledge, but it will all be colored by those individual, personal experiences of particular cats. If you have a cat of your own, then your memory code for "cat" will probably be dominated by those personal experiences. My personal experiences of cats are neither strong nor recent, and accordingly, in most circumstances, "cat" brings forth general rather than specific knowledge.

In particular, remembering depends on the links we make between codes — for no memory code exists in a vacuum, and we find a memory code by traveling the trails formed by the links.

But circumstances are important. If I see a Siamese cat, I'm more likely to think of Dinah. If, as I did the other day, I see a cat sharpening her claws on a rug, I'm more likely to remember instead, Pushti, clawing our heavy livingroom curtains to bits.

Memory codes for intentions – an example

You can see an example of part of a network of memory codes below. This is a possible memory code for a dentist appointment:



This is of course a simplified representation, selecting the main points — in this case: place, time, other person involved, purpose.

What will trigger my remembering of this memory code? It could be the place — since the dentist is one of the few things I go to Kilbirnie for, I never fail to be there without some awareness that my dentist is there. On the other hand, since I have few reasons to go there, what are the chances of being there to trigger this memory?

The name of the dentist might trigger remembering — if I ran across someone with the same first name or the same last name, for example. But again, what are the odds of that?

The core attribute of this memory code — dentist — is likely to be the strongest and most probable trigger. Seeing or hearing about anything to do with teeth or

dentists is likely to trigger this memory code (i.e., remind you that you have a dentist appointment coming up). However, this is not necessarily all that useful.

For a memory code of this nature, an intended action, it is not enough to remember it. You must remember it at a particular time. It is the time part of the code then, that must be strong enough to trigger remembering.

What makes a code strong?

Links that are recent will be more easily remembered (if you make the appointment two days before, you are much more likely to remember it than if it was made a month earlier).

Links are strengthened through repetition (the “cat” memories are so accessible because you have seen cats innumerable times; the “dentist” part of the code is much more easily triggered than the other parts of the code).

Codes are strengthened by being linked to other strong codes (the “dentist” part of the code is also strong because it is linked to so many other memory codes, such as memories of specific experiences at the dentist, and the strong codes you have for teeth).

Improving your remembering is about building strong codes and strong links.

How easily a memory code is found then, depends on the strength of the memory code, which in turn depends on the particular information you have selected to encode, and the links you have made to other codes.

Why people fail to remember

Memory failures don't occur simply because of the difficulties of the memory task. Nor do they occur because the person is incapable of remembering — although we are probably all guilty of berating ourselves or others as "hopeless at remembering (birthdays / appointments / errands)".

Recognizing when we need to use a memory strategy is the first and most important step in improving our memory.

But humans have a remarkable capacity for remembering and we all demonstrate that capacity repeatedly every day. Moreover, we all know at least *some* memory strategies that could help us remember.

The main problem isn't that we have a "poor memory", or that we don't know how to help ourselves remember. The main problem is that we *fail to realize we need help*.

Monitoring your memory

Monitoring your memory is an important memory strategy that underlies all memory skills. If you can't reliably gauge when information is properly stored in your memory, if you can't judge how well you have encoded it in memory, and how easily it will be retrieved when required, then how will you recognize when you need to take further action to remember something?

Children in particular, are extremely poor at monitoring their memory. While they are frequently confident of their ability to remember, this is not matched by their actual recall. Nor do they seem to recognize the need to take some action to help

themselves remember. They remember it *now*, they reason, so why shouldn't they remember it later?

With time, they understand the fallibility of memory, and learn strategies for dealing with it. But of course, some people are better than others at developing an awareness of their needs and working out more effective skills. Even among college students, as many as a third may use no memory strategies in circumstances when they need to (not even a strategy as simple as repeating the information to themselves)[1].

To improve your memory, you must recognize when your memory needs help.

Believing in your own abilities

There is another reason for failing to recognize the need for some sort of memory strategy — when the person is convinced that their memory failures are because they have a "bad memory". This may be because they were repeatedly told this as a child and consequently their "bad memory" is simply, inescapably, part of who they are. Or it may be that this is something they feel has come upon them at some point in their lives. Older adults, in particular, are inclined to regard any memory failures as a result of their increasing age, and therefore inevitable.

Interestingly, there is little relationship between the degree to which someone complains of their memory, and their memory performance. **People who feel they have a general memory problem forget things no more frequently than people who *don't* see themselves as having a problem**[2].

On the other hand, there is reason to think that we are actually quite accurate when it comes to making

judgments about our abilities at specific memory tasks[3].

Know thyself: a quiz

So, what are *your* beliefs about your ability to remember plans, intentions, future events? Clearly you have some concerns, or you wouldn't be reading this book! But have you thought about the specifics of what you remember and what you don't? The following questionnaire is designed to help you think about the specific memory tasks that involve intention memory, and to help you assess your memory performance. You may find it useful to add a priority rating to those memory tasks that are important to you.

I have provided a printable version in Appendix E.

In conversation with others, do you forget to bring up some point or question that you had intended to mention	never occasionally often
Going to the supermarket to buy several items, do you forget at least one of them	never occasionally often
When going out to do some errands, do you forget to do at least one of them	never occasionally often
When taking medication, do you forget to take it at the right time	never occasionally often
Do you forget appointments	never occasionally often
Do you forget special dates (birthdays, anniversaries, etc)	never occasionally often
Do you forget promises you have made to other people	never occasionally often
Think about the various people you might make promises to. How often do you forget promises made to: your spouse/partner your child(ren) other close relatives friends workmates your boss/client	 never occasionally often never occasionally often never occasionally often never occasionally often never occasionally often never occasionally often
Do you forget to return library books/videos/DVDs on time	never occasionally often
Do you forget routine chores (e.g., to water your plants, to take out the rubbish, to pay bills)	never occasionally often
Do you keep forgetting to do infrequent personal tasks before finally doing them (e.g., renewing a passport, making an appointment to see the doctor/dentist, stopping newspaper and mail before you go on holiday)	never occasionally often

Do you forget personal goals (e.g., setting aside time everyday for some fitness/study activity, intentions to achieve some personal/home/garden maintenance goal within a certain period)	never occasionally often
Do you forget work goals	never occasionally often
Do you have trouble remembering ideas	never occasionally often
If other people expect you to remember for them, do you forget other people's intentions	never occasionally often
Do you sometimes find yourself in a place and know that there is something you meant to do there, but can't remember what it is	never occasionally often
Do you remember an intended action at an inappropriate time or place, and then forget it when the time / place is appropriate	never occasionally often
If so, does this happen within quite short time-spans (e.g., walking from one room to another)	never occasionally often
Do you forget to pass on messages / information to others	never occasionally often
Do you forget to terminate actions (taking things out of the oven; turning a hose off, picking up drycleaning, etc)	never occasionally often

This isn't the kind of quiz you pass or fail, so I haven't provided a way to score. The object of this questionnaire is to get you thinking about your memory performance in this particular area — intention memory. You may look over your answers and think, "Oh dear, I'm worse than I thought!" Or you may think, "That's not so bad, I'm better than I thought I was!"

Part of the point of this exercise (a small part) is to demonstrate how specific details often give quite a different picture from your global impression. The main point, however, is to get you thinking about the kinds of memory tasks there are, and in particular, the kinds of memory tasks that you specifically want to improve. With these in mind as you go through the book, you'll be better able to focus on what *you* need.

Later on, when we've looked at the domain of intention memory and how it works, and looked at effective strategies for remembering intentions, we'll come back to these tasks, and work out the most effective, very specific strategies, for dealing with these very specific tasks.

Main points

There is no such thing as a "bad memory".

People who believe their memory is poor are generally no more forgetful than other people.

To remember well, you need to have faith that you can.

To remember well, you need to recognize when your memory needs assistance.

To remember well, you need to learn how to build effective memory codes.

2 Remembering to do things

Memory for future actions is different from other types of memory

You may remember the names of all the latest Olympic gold medallists, but this doesn't make you reliable at remembering to pick up milk on the way home. Or at remembering your spouse's birthday. Or at remembering to make a dentist's appointment.

There is no relationship between your memory for facts, and your memory for future actions and intentions[4].

Memory is not a thing

Memory has been compared to a filing cabinet, a library, a computer. But memory is not simply a storage system. Memory is not a *thing*. Memory is a *process*.

Different types of information are treated in different ways. Does it make sense that the information *A Siamese is a type of cat* be processed and recorded in the same way as the memory of a piece of music? As the memory of the smell of Christmas lilies, that recalls to my mind my grandmother's house? As the knowledge that 1010 comes after 1009? As the memory that I planned to make quiche for tea?

We have memories that involve different senses. We have memories that involve the past and memories that involve the future. We have memories for facts,

and memories of people, memories of our likes and desires and the things that have happened to us, memories of joy and grief and hunger and boredom.

Memories are of different types, and belong in different classes. These classes are termed **domains**.

There is a domain for facts, and a domain for people, and a domain for events, and a domain for skills, and a domain for future actions and events.

Remembering intentions is different from other types of remembering.

To learn how to improve your memory for future plans, you need to understand how this sort of memory is processed.

Remembering the past relies on triggers

Remembering information you have learned, or experiences you have had, people you have met, usually involves **retrieval cues** — things that trigger your remembering. The sight of a familiar face triggers your memory for whose face it is. The question "What's the capital of Australia?" triggers the stored information: "Canberra". Seeing your old school brings back memories of childhood days.

Occasionally, a memory seems to pop into our heads for no apparent reason, but even then, there has probably been some triggering event — a barely noticed object, a casual thought.

Remembering your intentions is harder.

There are fewer triggers to help you remember the future

Remembering future actions and events cannot always wait upon cues to remind us. If we need to buy something, we can't always wait until we happen to be in an appropriate store and happen to see the desired object. We usually need to take action to get ourselves to the right store. We need to *look* for the object.

Remembering the future is about remembering out-of-the-ordinary events and needs. Remembering to feed the cat isn't usually a problem, because you do it every day. It's part of your routine. Remembering to feed the neighbor's cat when they're on holiday is harder.

Forgetting routine actions is not a failure of intention memory

Forgetting routine actions isn't so much a memory failure as a failure of attention. "Action slips", as such examples of absentmindedness are called, include such types of error as:

- actions you've forgotten doing, such as going to lock the door after you've already locked it, or taking pills twice
- substituted actions, such as putting the butter in the dishwasher, or driving in a familiar direction instead of the required one
- confused actions, where you mix up the order of an action sequence or omit parts of the sequence, such as when you put an ice-cube

tray into the freezer empty, or leave out an ingredient when you're making a familiar recipe

- discrimination errors, such as mistaking yogurt for milk, or a magazine for a book
- "program assembly failures", such as erasing the wrong letter from a misspelled word[5]

None of these are caused by memory failure as such, particularly the latter four types of error. Clearly you know what you *should* be doing as soon as you notice what you *are* doing. The first type of error — doing things twice, or simply wondering if you've done something — does seem to be a memory failure of a kind, but it is not a memory failure of the kind we are considering here. You are not failing to remember to do something; you are failing to remember whether you *have done* something. It occurs when the action is part of your habitual routine, and it occurs because we pay little attention to our habitual routine.

The obvious remedy for this type of failure is to pay attention, but the whole advantage of habitual actions is that we *don't* need to pay attention, so this is not a strategy I recommend, except perhaps in particular situations (such as locking the house when you leave). What I do suggest is that you think about the instances of absentmindedness you are prone to. Now decide which ones are regular and irritating. For these, you should try and think of something you can use as a memory cue to the completion of your action. Let me give you an example.

Every morning, I begin the day with two glasses of warm water with lemon juice. Remembering to have these is no problem, as it is a part of my regular routine. Where I come unstuck is knowing whether I've had *both* glasses, or only one (I know, this sounds painfully forgetful, but I am doing other things at the same time). So what I make sure I do, is to remove the squeezed lemon from the bench as soon as I've used it the second time. That way, if I'm uncertain whether I've had both glasses or only one, I simply have to look at the customary place on the bench and see if the lemon is there. If it is, I haven't had my second glass; if it isn't, I have.

I do the same sort of thing when I wash my hair. Because I tend to be lost in thought in the shower, I always make sure I put the shampoo bottle down in one particular, different, place when I've used it the first time, and back in its usual place when I've finished with it. Otherwise, I sometimes lose track, and can't remember whether I've washed my hair twice, or only once.

The type of forgetfulness we are considering in this book, however, are not failures to remember your familiar routine. They are failures to remember actions that are *not* part of your routine — an errand to run, someone's birthday, a modification to the way you habitually do something. Part of the reason it's a problem is that there are rarely cues to remind us that something different is required.

Remembering future actions and events is made difficult by the lack of natural triggers.

Remembering future intentions is triggered easily

Perhaps because of the paucity of retrieval cues, future memory tends to be more easily triggered than

"normal" memory. The cues that remind us of future actions and events are often only marginally related to the task we're reminded of[6]. Seeing a container of flaxseed oil on the kitchen bench reminded me I had to ring my partner at his office (because the oil is something he takes). Seeing a post-paid envelope with a Suzuki logo on it reminded me I needed to pay the bill for my son's piano lessons.

Even distantly related things are often enough to remind us of future actions and events.

Why planning memory is more challenging than other memory tasks

Although the principal reason future memory can be problematic is the lack of reminder cues, there are other complicating factors as well. A major one is time. The length of time you need to remember for, and the specificity of time.

Remembering an intention over an hour, or a day, or a month, is not simply made harder by the passage of time, but also by the fact that during that time you will be engaged in other actions. You are not sitting waiting for the appropriate time to carry out your intention; you are busy with other tasks. These activities will of course use your memory as well. In some cases, they will even use that same memory domain. Thinking about these other activities, planning them, remembering them — all this will interfere with your remembering of this other intention.

Intentions must be remembered for an often lengthy period of time.

And then there's the other complication: part of remembering a future action is not simply remembering the action, but also, remembering to do it *at a particular time*.

You are often required to remember intentions at a specified time.

Main points

Your memory deals with different types of information in different ways.

Future actions and events are remembered differently from past events and facts.

Stored information is triggered by appropriate retrieval cues when required.

You cannot rely on the fortuitous appearance of appropriate triggers for the remembrance of intended actions.

Remembering an intention is further complicated by the need to remember it at a specified or an appropriate time.

3 Structuring your goals

A hierarchy of goals

Part of the problem of remembering intentions over time is that we are usually holding in memory lots of intentions, with a variety of characteristics.

For example, as the primary caregiver of a family, at almost any time I have a shopping list going. This might start as soon as I leave the supermarket, with the vexed “I forgot to get rice! I’ll have to get it next time”, and accumulates as time goes on and more items are added to the list (which may be a mental or a physical list). In addition, I will have a whole host of short-term and long-term intentions, some of them involving only myself, others involving family members, friends, or people I work with. Recently, for example, my list of personal goals included:

- make an appointment at the dentist for my son (which has the additional corollary, “arrange for my other son to go to a friend at that time”);
- renew expired passports;
- meet friends for lunch on Tuesday (and remember to remind the forgetful one on the day!);
- produce newsletter for a voluntary organization I belong to (this includes a number of sub-goals relating to content, finalizing the subscriber list, etc.);

- complete this e-book (which of course also includes any number of sub-goals);
- start making plans for Christmas;
- think of something for dinner tonight.

Goals include:

- activities that must occur at specified times
- activities that simply must be accomplished "some time"
- activities that are required almost every day
- activities that include a number of sub-tasks
- activities that are themselves part of a larger goal
- activities that vary in importance

Ordering your goals

To keep track of all these plans you need some way of organizing them. People use a variety of strategies to order the many goals they have in memory. Common prioritizing rules include:

- achieve the most important goals first
- achieve goals that have approaching deadlines
- cluster goals that are geographically close

Flexibility in ordering

However, the order of accomplishment changes as circumstances change — if you suddenly realize that an unimportant goal can be accomplished in a particular location, you will usually stop and do it then and there.

There's no problem with goals accomplished ahead of schedule, but what about the converse? Often you intend to perform a task in a particular place or at a particular time, only to find that circumstances are against you (you might go to the bank and find it closed for staff training, for example). In such circumstances, the intention may well drop way down your priority list, to the extent of being almost completely forgotten.

For example, when I made the dentist appointment for my son, it seemed a bad time to phone the mother of my other son's friend. And then, of course, I forgot to ring her later. As a general rule, if I can't accomplish a particular task at the time I think of it, I make a note of it, or arrange for some other environmental cue. In this case, however, the cue was for the appointment itself (a note on the calendar), not for this related arrangement. The note on the calendar works fine for the appointment, in that I am sure to notice it there in the immediately preceding days, and on the day itself. But by then it might be too late to arrange for my son to play with a friend.

When circumstances change, intentions are more likely to be forgotten.

The problem of suspended intentions

It's particularly important in the case of suspended intentions that you give some thought to re-

scheduling. Because they are already in memory, it's easy to assume that you will remember them again. However, the very fact that they *are* in memory may well hinder their later recall. Because the information you have stored may now be wrong.

For example, say you intended to use your lunch-break to post a parcel, visit the bank, and buy some stationery. You intend to buy the stationery at the post office. However, when you go there, you discover they don't have the actual stationery you need. There's no other stationery supplier nearby, so you leave it for the moment. *I'll do it some other time*, you promise yourself. And promptly forget about it.

When you formed the intention *get stationery*, you linked it to *post office*, which was linked with *post parcel*. But the parcel has been posted now, and you have no reason to visit the post office. Even passing a book and stationery shop may not remind you of your intention, because the intention was linked to *post office*, not *place that sells stationery*. Depending on how urgent the need for stationery actually is, the intention may lie dormant in your mind for some time. Until its need becomes more urgent, or you are actually faced with the particular type of stationery you require, or until you once again have a need to go to the post office, and think, "now, wasn't there something else I had to do here?" — the situation triggering an intention that might, now, be weeks old.

When an intention is postponed, you may need to form new memory links.

Main points

Intentions come in varying types:

- activities that must occur at specified times
- activities that need to be accomplished “some time”
- activities that need to be done regularly
- activities that include a number of sub-tasks
- activities that are themselves part of a larger goal
- activities that vary in importance
- activities that involve others.

Different types of intention require different strategies.

Intentions that have to be postponed may need to be re-framed in memory, with new links

To remember well, you need to learn how to build effective memory codes.

[1] Intons-Peterson, M.J. & Newsome, G.L. III. 1992

[2] Self-reports on various questionnaires have shown little correlation with actual performance on memory tasks in most studies (Herrmann, 1982). People's perceptions of how their memory has changed over time has also shown little correlation with actual changes in performance. It has been speculated that memory questionnaires may indicate the *trust* people have in their memory, rather than their memory performance. Similarly, it has been speculated that perceptions of memory change with age reflect the person's beliefs about how memory changes with age, rather than any actual change.

Memory beliefs also seem to be influenced by social relationships. One study found that husbands' self-reports of their memory performance agreed completely with the reports from their wives (Hertzog & Dunlosky 1996). However, there was little agreement between the husbands' reports of their wives' memory performance and the women's self-reports. Does this indicate a lack of knowledge or a lack of influence? Perhaps a little of both!

[3] Hertzog et al. 2000.

[4] In general, studies have reported little correlation between performance on prospective and retrospective tasks (e.g., Einstein & McDaniel, 1990; Kvavilashvili, 1987; Maylor 1990; Wilkins & Baddeley, 1978). Indeed, one study found that those who performed poorly at a task where they were required to recall a list of words (a retrospective task) performed better on a prospective memory task than those who performed well on the recall task! (Wilkins & Baddeley 1978). It is common to find little correlation in the performance of different memory tasks (see e.g., Morris 1984), and this is considered to support the view that there is not a general memory ability.

For that matter, performance on different types of retrospective memory task also varies. For example, a study of performance on 31 laboratory memory tasks found separate factors for free recall, paired-associate learning, memory span, and verbal discrimination (Underwood et al. 1978); a questionnaire study of everyday memory abilities found at least eight different memory factors (Herrmann & Neisser, 1978). Today, researchers tend to talk about different memory skills, rather than someone having a "good" memory.

[5] Reason 1984.

[6] Morris, P.E. 1992.