"It is fundamentally

the confusion between

effectiveness and efficiency

that stands between doing

the right things and doing

things right. There is surely

nothing guite so useless as

doing with great efficiency

what should not be done

at all. (DRUCKER 1963)"

REACHING OUR GOALS EFFECTIVELY – A WORK IN PROGRESS

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Wouldn't it be nice to magically create time? Many of us have an e-mail "In Box" that is constantly full. Deadlines disappear only to reveal new ones. During the day, we might rush from one fire to another. "I just don't have enough time," pervades our lives as an unwelcome guest. Unfortunately, even the best magicians have not created time and the best that we can do is to manage how we use it. How we invest our time is critical. Good time investment pays immense dividends. We can discover new things, create new theories, achieve our goals, and interact profitably with colleagues, family, and friends. In contrast, poor time investment tends to foster an attitude of, "Poor me, how do I deal with this insane world?" It negatively affects our relationships, health and work environments. Ineffective use of time also limits our full potential, which is, after all, what we get paid for.

ACHIEVING OUR GOALS

Successfully reaching our goals starts with having "the end in mind" (Covey 2013). If you are working towards an important goal that is

satisfying and interesting then you are more likely to be engaged in the process. Experts recommend planning where you can use your strengths to reach long-term goals. This topic fills the shelves of career and personal psychology books (e.g. Rath 2007; Bolles 2014).

As researchers, we commonly take a circuitous path to reach a goal because we deal with complex problems that can be hard to define, have many input parameters, and might not have a definitive or unique solution. In turn, this makes many scientists avoid time management just in case it gets in the way of an elusive "eureka" moment. In fact, the eureka moment is much more likely if we can focus on our research, having ensured that we have the time to do it. A scientist's work trajectory is generally quite different from the sequential pathway

taken by project managers and business leaders who advise us on "time management". Standard workflow methods are not necessarily applicable for researchers, where our goals are defined and change as we go along. Therefore, we need to modify mainstream "time management" methods to suit our own work situation.

TECHNIQUES FOR DECIDING WHAT TO DO

A simple place to start is to decide what you need to do on a given day. Covey (2013) breaks daily tasks into categories of important, not important, urgent, and not urgent (see Table). The "not important" row includes time-sapping tasks that do not add to an overall goal. The "important" row includes urgent tasks that need to be done now ("fires"); non-urgent tasks are those that move us forward towards our goals. Covey (2013) argues that maximizing the time spent on important, non-urgent (quality) tasks allows us to better reach our goals and be more creative.

SO, HOW ABOUT STARTING HERE?

Once your goals are clearer, it is easier to use time more effectively by following some simple tips.

Balance your goals across all areas of your life: career, family, personal, physical and mental. Create a daily plan with small tasks to help keep track of commitments and expect Murphy's Law to rule (i.e. if something can go wrong, it will).

When you have urgent tasks due, use a "do not disturb" sign or work in a secluded location.

1 Research School of Earth Sciences Australian National University, Canberra ACT 2601 E-mail: penny.king@anu.edu.au TABLE A TIME MANAGEMENT APPROACH THAT MAY BE USED TO PRIORITIZE TASKS (Following Covey 2013).

	URGENT	NON-URGENT
IMPORTANT	 Crises Pressing problems Deadline-driven projects	 Prevention Production capability exercises Relationship building Recognizing new opportunities Planning Recreation
NOT IMPORTANT	 Interruptions, some calls Some mail, some reports Some meetings Proximate, pressing matters Popular activities 	Trivia, busy workSome mailSome phone callsTime wastersPleasant activities

Try using bursts of time (e.g. pomodorotechnique.com or 3030.binaryhammer. com), mini-deadlines throughout the day, and electronic task tracking (e.g. culturedcode.com/things), or apply peer pressure by working with a group (e.g. a writing group). Batch similar tasks together to work more efficiently (e.g. attempt to complete e-mail in one or two sittings).

Make sure you factor in time for "important" interruptions, and try scheduling "interruptions" by providing office hours when you are available. Also, schedule time to write, complete specific tasks (e.g. lab work), answer e-mails, and return phone calls. Turn off social media sites and e-mail when you don't need them.

Tame that e-mail box! Prioritize messages that align with your responsibilities and goals. Recognize more complicated e-mail issues may warrant a phone call or may be listed as a task on its own. Establish a system for filing and storing e-mails so you can find them easily; consider using folders organized by topic or date or using one folder and the search function. Decide on how you will flag e-mails that need to be followed up.

With regard to meetings, decide what you hope to achieve and set an agenda, finish on time, and, after meetings, summarize the results. If you have no valuable contribution to make, then why are you there?

When you complete a task, make a point of noticing. There can be a lot of satisfaction in ticking things off a list and throwing it away, or rewarding yourself when you reach a goal.

Don't underestimate the usefulness of taking a break before revisiting a problem. Many creative moments happen at the beach, the supermarket, during exercise, or after a good sleep.

IN THE END

Everyone has a busy life. Make it less busy by avoiding worry! It is inevitable that life's complications may wreck your best laid plans and make you late. One strategy is to confess and try to figure out a reasonable deadline. Also, recognize that it is not possible to always have days with highly creative and intelligent thought, but that it is still important to be moving forward; use those days for other types of useful, if mindless, progress. Above all, enjoy what you are doing and it will all work out!

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