

Close up and interpersonal

Gail Kinman meets **Anna Machin** to discuss close relationships, fatherhood, and more

Your research focuses on close human social relationships, but you didn't originally train as a psychologist. What was your background?

I began my academic life doing a general anthropology degree, and I would still consider myself an anthropologist. My PhD was not on living things at all – I used archaeological records to explore the evolution of social and sexual behaviour in the Lower Palaeolithic period, about 500,000 years ago. I then moved to Oxford to work with Robin Dunbar, whose main focus is on relationships and social networks, and developed a strong interest in understanding how people operate in close dyadic relationships characterised by trust and obligation.

Anthropologists are magpies – we pinch ideas from other disciplines. I gradually started drawing on psychological theories, measures and techniques, as well as ideas emerging from other fields, such as neuroscience and biochemistry, to gain insight into how people develop attachments within a dyadic relationship and how these relationships are maintained over time. My research now covers several aspects of close human relationships – kinships systems, best friendships, romantic relationships and new fatherhood, as well as prosocial behaviour, attachment and bonding.

The importance of a multidisciplinary approach to understanding the human condition is gradually being recognised.

The only way you can study humanity is from a multidisciplinary perspective. In my cross-cultural work, I draw heavily on ethnographic techniques I learned during my training in anthropology. Having a wide range of experimental techniques to choose from also makes conducting research much more interesting. I keep my eyes open for new techniques arising from other disciplines that might be useful. Sometimes it is a steep learning curve, but ultimately it keeps things challenging.

You have a particular interest in the evolutionary origins of kinship. How did this develop?

Social anthropologists have written a great deal about why human kinship systems are different, but nobody had really explored why every culture in the world has a kinship system and why individuals adopt that kinship system and its descriptive terminology into their world view at a very young age. This must have conferred some evolutionary advantage, but what might this benefit be?

Our theory is that kinship systems reduce the cognitive load involved in maintaining close relationships. Reciprocity is what makes relationships endure – if you are in a relationship where you are always giving and the other person is always taking, it is likely to break down. But keeping track of the reciprocity is very cognitively demanding. You have to think 'When was the last time this person let me down? Have they ever lied to me, belittled me, abandoned me, etc?' Neuroimaging studies suggest that keeping track of reciprocity involves not only working memory, but also areas of the brain that influence social cognition. Moreover, relationship dilemmas are not like maths problems: people have to weigh many different possibilities, and there can be high costs if they get it wrong. We thought that the cognitive load involved in maintaining relationships may be reduced when people are dealing with kin. We already know that we are less likely to expect reciprocity from our kin, as helping somebody you are related to is beneficial for your genetic fitness. In other words, kinships confers a shortcut to trust, which reduces the cognitive load involved in deciding whether to help people or not. There is also a reputational effect where if you don't help your kin, the rest of your relatives will probably find out about it.

What sort of experiments do you conduct to examine these effects?

We present people with social problems or moral dilemmas involving kin and

non-kin and measure their response time. For example, you find out that your relative or your friend is leaving their 10-year-old child home alone. What do you do? Do you do nothing, do you confront them, or do you inform the appropriate authorities? We find that people respond much more quickly if the hypothetical person is a relative than a friend, supporting the view that such dilemmas involve considerably less cognitive processing.

We argue that the evolutionary advantage gained from the release in processing power from the reduced cognitive load conferred by the kinship schema has allowed us to expand our social network to the 150 individuals (made up of relatives and friends) that people typically have in their social networks today. We also have evidence that larger functioning social networks enhance the capacity for survival. People with more social capital recover better from chronic illness and have lower mortality rates.

You have also looked at genetic variation as a cause of difference in prosocial behaviour.

Yes, this research is ongoing. Previous studies showed that variations in genes relating to the production, transportation and operation of neurotransmitters, such as oxytocin, dopamine, serotonin and beta endorphin, influence the extent to which individuals instigate social relationships and how they behave in these relationships. Several studies show that the oxytocin receptor gene, in particular, is highly polymorphic, and that this is related to individual variation in empathy, altruism and emotional vulnerability. Beta endorphin is a naturally occurring opiate that appears to influence experiences of love and feelings of social acceptance. There is a version of the opioid receptor gene associated with beta endorphin, which has been labelled a 'gain of function' variant. People with this version of the gene tend to wear their heart on their sleeve; they fall in love very hard and tend to experience love passionately and euphorically. They also feel social rejection much more intensely and tend to have more powerful negative reactions when relationships break up. Interestingly, there are also differences at the cultural level – for example, the frequency with which versions of the oxytocin receptor gene are found in any population seems to be linked to whether countries are classified as collectivist or individualist. We are not saying that these relationships are deterministic – there is a major gene–environment interaction –

but it is another piece of the jigsaw. We are about to start on a large-scale study collecting genetic and psychological data to increase our understanding of the genes that might underpin individual variation in behaviour within and experiences of relationships.

You talk of 'single badge groups' in your research – what does this mean?

An element of similarity between people that might mimic a kinship relationship. If you meet someone and learn that they have something in common with you – for example, you might support the same football team, be members of the same political party, or both be psychologists – is this a short-cut to trust in the same way that a kin relationship would be? If we are presented with a moral dilemma, would we be more likely to help people that we perceive to be 'pseudo-kin' – members of the single badge group – than those we may feel we have no connection with? We haven't yet examined these issues experimentally but plan to do so in the future.

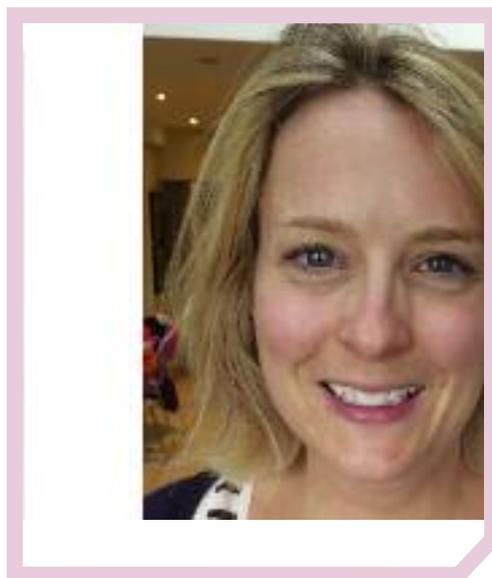
You've also researched how people select partners and best friends.

People choose romantic partners within a 'mating market': the most successful relationships are those where people mate with others of similar 'value' to themselves. Interestingly, although similarity may drive attraction initially, we have found that women tend to put their male partner on a bit of a pedestal. They will score him above themselves on a wide range of personal attributes such as physical attractiveness, sense of humour, kindness and intelligence. Unfortunately for women though, men also tend to rate themselves more highly than they do their female partners on these attributes. Men also differ in the way they see their romantic relationships; they don't tend to define themselves in terms of the success or failure of their love life, but this has a major influence on women's self-esteem and confidence. In terms of 'best' friendships, we have found that people are more similar to their closest friend than they are to their romantic partner. Both men and women also tend to be more intimate with their best friends than their partner and are more likely to disclose emotional vulnerability. We found this effect in cross-gender as well as same-gender best friendships, supporting the view that male/female friendships are not a 'proxy' for romantic relationships.

Your work on the development of the

bond between new fathers and their babies sounds novel.

In collaboration with the National Childbirth Trust, I conducted a study looking at 15 first-time fathers to examine the bonding process. I followed the fathers from seven months gestation until the baby was six months old. Nowadays, healthcare and the media promote an idealised view of 'involved' and 'hands-on' fatherhood and I wanted to explore the realities of their bonding experiences and



Anna Machin, Postdoctoral Researcher, Department of Experimental Psychology, University of Oxford (anna.machin@psy.ox.ac.uk)

their role transition in general. Our findings suggested that, in relation to fatherhood, men are where women were in the 1980s: they are told 'you can have it all' and then suddenly discover they can't without experiencing a considerable negative impact on their physical and mental wellbeing. Our fathers tended to shun the traditional authoritarian qualities associated with fatherhood, such as being the financial provider and administering discipline, and strongly endorse being involved with the baby's practical care and emotional development. Sadly, their high expectations were not realised – this led to feelings of guilt, deep disappointment and emotional pressure engendered by trying to juggle different elements of their life without any support.

Few men are taking up the option of extended paternity leave, and some studies show that employers and colleagues see those that do so as less

committed to the organisation and less worthy of promotion.

Exactly. It isn't enough for policies to pay lip service to the importance of fathering. Childbirth tends to occur at times in men's lives when they are building a career – they feel they have a lot to lose if they neglect their work. During paternity leave, fathers have been given a glimpse of 'baby world' and felt really involved and empowered, but then had to return to a very different role where they may only see the baby for an hour a day. Also, the fathers were deeply worried that they didn't immediately experience bonding and the great flash of deep, warm, wonderful love. It was only when the baby became less reliant on the mother that bonding with the father started to occur... for many, this took a long time.

Fathers want their voices heard.

I was surprised that I had no problems recruiting men for this study – in fact it was massively oversubscribed. Hopefully, the growing evidence for the importance of the father's input into development will increase resources and change attitudes so that men can be helped through the transition to fatherhood and be deeply involved in their children's lives.

I know you're keen for your research to have real impact. How can your findings improve the quality of relationships?

Dysfunctional relationships have a major cost economically and socially, across generations. For example, people brought up in a dysfunctional parenting relationship are much more likely to have mental health problems and addictions and to perform antisocial acts. We need to understand what makes a relationship functional and healthy, as well as maladaptive. That is why I feel the work I am doing with parents is so important – you need to get in as early as possible. We know that touching, holding and stroking babies and maintaining eye contact promotes the growth of the areas of the brain that are involved in enhancing bonds, which, in turn, helps them build functional social relationships when they are older. We also know that adolescence is a time where we get a second chance to intervene and hopefully reverse any damage that may have been done. The power of interdisciplinary research is that understanding gained at the neurochemical, genetic and behavioural level will help us develop effective interventions to reduce risks and enhance the quality of interpersonal relationships at all ages.