



RESEARCH
ARTICLE

Is it Possible to Wake Sleeping People and Non-Human Animals by Staring at Them?

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SUBMITTED March 28, 2024

ACCEPTED July 31, 2024

PUBLISHED December 31, 2024

<https://doi.org/10.31275/20243359>

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HIGHLIGHTS

A study of 340 accounts suggests the possibility of waking up either sleeping people or non-human animals by staring at them, and in some cases, the people or animals looked directly at the starrer on waking.

ABSTRACT

Some people say that they can wake sleeping people or sleeping non-human animals by staring at them. We investigated the natural history of these claims by examining more than 240 accounts submitted to us over a 30-year period by informants in the UK, US, Germany, and several other countries. Most of these reports, 145 cases, concerned waking sleeping dogs and cats by staring at them; some described waking people up by looking at them, and some accounts were from people who had been woken by looks from animals or by other people. When animals were woken by people's stares, 26% of them were said to have responded directionally by looking straight at the person who was watching them. Some people said that they themselves responded directionally to the stares of animals or other people as they woke, but the proportion of directional human responses was significantly lower (11%) than animal responses. Several informants said that animals were harder to wake when staring at them while they were dreaming. In most cases, possible explanations in terms of subtle sounds or chance coincidence seem unlikely. The ability to be woken by stares may involve a form of perception that is yet unrecognized by science, for which we suggest the name *scopegersis*, from the Greek roots *scop* = "look at" and *egersis* = "awakening". This putative ability seems closely related to the ability of people and many species of animals to feel the looks of unseen others when they are awake, known as the sense of being stared at or *scopaesthesia*. In both cases, these responses may depend on the activity of the superior colliculus, a mid-brain region concerned with orientation towards environmental stimuli. These sensitivities may have evolved in the context of predator-prey relationships. We suggest experimental tests for investigating *scopegersis* in more detail.

KEYWORDS

Directional responses, dreaming, non-human animals, predator-prey relationships, *scopaesthesia*, sense of being stared at, superior colliculus, *scopegersis*, waking by looks.



INTRODUCTION

Many people say they have detected when someone is staring at them from behind, turning round, and meeting the eyes of the looker. Conversely, many people have found they can make others turn around by staring at them (Sheldrake, 2003). This ability is known as the sense of being stared at, or stare-detection, or *scopaesthesia* from the Greek roots *skopein* = “to look at”, as in a microscope, and *aisthesis* = “sensation”, as in anesthesia (Carpenter, 2005). Surveys have shown that most adults and children say they have experienced it (Braud et al., 1993; Coover, 1913; Cottrell et al., 1996; Sheldrake, 2003). Tens of thousands of randomized experimental trials by 38 investigators have given results that suggest this ability really exists. Taken together, these positive results are highly significant statistically ($p = 1 \times 10^{-20}$) and cannot simply be explained in terms of peripheral vision or subtle sensory cues (Sheldrake, 2005). A meta-analysis of a subset of ten of these studies specifically designed to preclude the implicit learning of sensory cues showed a mean effect size far beyond the mean chance expectation ($p = 5 \times 10^{-17}$) (Radin, 2005).

Scopaesthesia seems to be widespread among humans, mammals, and birds (Sheldrake, 2003; Sheldrake & Smart, 2023); both humans and non-human animals seem able to detect when they are being watched from behind or above, when the looker is invisible to them. However, within contemporary science, no one appears to know how this ability might work, even in principle. There is no known physical or sensory means by which looking at someone from behind could enable that person to detect the stare and respond by turning around in the absence of sensory cues. The very existence of scopaesthesia is controversial precisely for this reason.

According to the philosophy of mechanistic materialism, minds are no more than the activity of brains and are confined to the insides of heads (Sheldrake, 2020). Hence, scopaesthesia, like other psychic phenomena, is deemed impossible (Reber & Alcock, 2020). Brugger (2024), a leader of the organized skeptical movement in Germany, asserts that “scopaesthesia does not exist”; it is “a mere object of belief (and not a perceptual or attentional phenomenon).” He concludes that the only interesting scientific questions concern the brain mechanisms responsible for this irrational “folk belief”.

We agree with materialists that scopaesthesia is unexplained, but for that very reason, we find it an intriguing subject for scientific enquiry. Scopaesthesia implies that minds extend beyond brains; they are not confined to the insides of skulls. There seems to be an extramission – a sending out – of attention that can affect a person

that is the object of this attention (Gomez-Marin & Sheldrake, 2023). This extramission is directional by its very nature; in some unknown way, both people and non-human animals can detect it and respond directionally by turning and looking straight back at the looker (Sheldrake & Smart, 2023). The process of stare-detection is non-visual, in that it can happen when the looker is behind or above the person or animal looked at and outside their field of vision. It does not depend on sensors in the skin because it occurs in animals with thick fur coats and in people who are fully clothed, wearing gloves, and with long hair or a scarf or coat collar covering the back of their neck (Sheldrake & Smart, 2023). Moreover, in most experimental tests for scopaesthesia, the participants were blindfolded. In addition, several randomized experimental tests have shown that when people are looked at through closed circuit TV (CCTV), there are significant changes in their electrodermal activity, suggesting that they can detect physiologically when they are being watched by a remote person, even though they may be unconscious of this response (Schmidt et al., 2004).

The non-visual detection of staring raises the possibility that animals and people might be able to detect when they are being looked at, even when they are asleep. Such an ability would make good evolutionary sense. Scopaesthesia may have evolved in the context of predator-prey relationships: a potential prey animal that could detect the look of a hidden predator would stand a better chance of surviving than one that could not (Sheldrake, 2003). Animals are generally at their most vulnerable when asleep; an ability to detect when they are being watched when sleeping would be of serious survival value and favored by natural selection.

Here, we explore the natural history of waking sleeping animals and humans by staring at them, based on a collection of nearly 250 accounts in our database. As far as we know, this phenomenon has not previously been investigated scientifically or named.

We cannot conclude from these reports that the phenomenon definitely exists. Rather, this collection of accounts provides a preliminary natural history of people’s experiences. Patterns that emerge from the analysis of these accounts suggest that systematic experimental investigations would be worthwhile.

At our request, the classical scholar David Bentley Hart has suggested a name for this putative phenomenon: *scopegersis*. As in scopaesthesia, *scop* means “look at”; the Greek word *egersis* means “awakening”. It is pronounced *scop-egg-ersis* (adjective, *scopegertic*).

METHODS

For 30 years, we have been collecting stories about unexplained human and animal abilities in several broad subject areas, including the sense of being stared at, telepathy, premonitions, precognitions, and the sense of direction, subdivided into more than 100 categories. These stories have been sent to us in response to appeals for information by RS in his books, lectures, media appearances, website, and social media. To start with, these appeals did not specifically mention waking people and animals by staring, but people sent in stories about these subjects anyway. RS then appealed through newspapers and social media for information about waking sleeping animals and people, which resulted in new influxes of stories. These accounts in our collection have mainly come from the UK, the US, Canada, Australia, and continental Europe, especially Germany and Switzerland. Stories in German and other languages were translated for us by native speakers of those languages.

All the people who submitted these stories were aware that we were collecting them for research purposes and consented to our putting them on our database. Many were willing for us to use their real name when quoting their stories, but some preferred to remain anonymous. In this paper, in the interests of uniformity, we have anonymized all accounts.

Most of our informants were women. We do not know if this is because more women than men saw and responded to our appeals, or whether more women than

Table 1. The total number of cases describing waking or being woken by the stares of a non-human animal or person, the number and percentage of cases that included a directional response, and the number of reports concerning dogs, cats, birds, and other species.

	Total Cases	Directional (% of total)	Dogs	Cats	Birds	Others
Waking Animal	145	38 (26%)	71	60	7	5
Woken by Animal	65	10 (15%)	34	30	0	1
Waking Person	18	1 (6%)				
Woken by Person	20	0 (0%)				

men noticed whether animals or other people woke in response to stares.

Our collection of stories was archived on a FileMaker Pro database, and the accounts were assigned to one of four categories: animals woken by people's looks, people woken by animals' looks, people woken by other people's looks, and people who woke others by looking at them. In preparing this paper, we read all the accounts in each category and recorded the total number in each category. Necessarily, we have had to choose a limited number of examples to illustrate the phenomena we discuss. We tried to make a representative selection. We also quote only the most relevant parts of people's accounts, some of which include stories about other kinds of unexplained behavior as well as extraneous personal details.

Anyone who wants to study our full collection of anonymized cases for themselves is welcome to do so: the complete database is available online as Supplementary Information at <https://www.sheldrake.org/wakedata>.

RESULTS

The Overall Picture

Table 1 shows the total number of cases in our database in four different categories of waking by looks. The largest number of cases, 145, concern people who said they woke non-human animals by staring at them. Nearly all these animals were domestic pets, predominantly dogs and cats, along with several birds, including parrots, a budgerigar, and a pigeon. There was also one each of the following species: horse, rat, rabbit, piglet, and hand-reared lamb, making up five in the "others" category.

There were 65 cases in which people said they were woken by an animal: 34 by dogs, 30 by cats, and one by a horse.

There were fewer reports about person-person interactions, with 18 cases of waking a person by looking at them, and 20 of a person being woken by the looks of another person (Table 1).

In waking life, scopaesthesia is usually directional, in the sense that the person or animal looked at from behind or above turns and looks straight at the looker (Sheldrake & Smart, 2023). A similar orienting response was said to occur in some of the sleeping people and animals when woken by being stared at. In the cases where animals were woken by people staring at them, 26% of the reports described a directional response (Table 1). The other three categories in Table 1 refer to people being woken by looks from animals or by other people, with lower percentages of directional responses.

Non-Directional Reports

In most cases, our informants did not explicitly mention directional responses of the animal or person who woke up in response to being looked at. However, this may not have been because the response was non-directional, but because the reports were generalizations, lacking detail, as in the following examples.

Animals Woken By People

I've noticed that my dog always wakes up when I am looking at him while he is sleeping. I have two dogs right now and have had dogs for years, and I can state unequivocally that dogs will often awaken if you stare at them, but it's most likely to occur if you are thinking about them, less likely if you happen to be looking at them but are thinking of something else. I can wake my cat up when she is sound asleep if I look at her. I have done it many times. I have woken my cat up by just briefly looking at her while thinking of her.

People Woken By Animals

My greyhound wakes me in the night by staring at me. I sleep heavily, and noises have little effect, but the dog staring at me in the dark does. Each time he's done this, I've also had the strong impression that I need to get up and let him out. The first time, when I was a little slow, he was sick all over the bedside rug, so now I respond quickly.

I woke up if my beautiful Collie stared at me (I don't know for how long) having some particular need.

My dog wakes me up at night by staring at me. I've had more than one dog who has done this. It's usually when they need to go out. They don't make a sound, just stare intensely. I wake up and know immediately what's going on.

My animals (mostly cats) can certainly stare me awake and they can stare their thoughts into me. For example, I will be sleeping and I will be stared awake and I will answer the cat by saying, "OK, let's go and get some water from the tap."

I have frequently been woken by animals staring at me. I have known this to happen with horses.

As the report about the Collie makes explicit, the

person who is woken generally does not know how long the animal has been staring, so we cannot tell from these reports how promptly people respond. However, when people are staring at sleeping people or animals the reports are more informative; in some of the cases in the next section, people woke soon after the staring began.

People Woken By People

When my sister and I were small, still going to primary school and sharing a room, I came to realize that when she was sleeping, all I needed to do to wake her was to look at her. This would happen almost invariably, so when I didn't want to wake her when leaving or entering the room I strictly avoided looking at her.

When I was a child, I would often wake up to my mother's face in my bedroom doorway. One day I asked her how she woke me in the morning to get ready for school because I realized I had never heard her say anything to me, or touch me, or even come near me. She replied that she just stopped at my door and looked at me and I would wake up.

My mother tells me that when I was little, probably around 3 years old, I used to come into her bedroom and stare at her when she was asleep. She would wake up and I would be standing there just staring at her. I didn't make a sound and don't know how long I was there before she woke up.

My husband spent the first year of our relationship waking me in the middle of the night by watching me. His stare pulled me right out of a sound sleep several times. It was like a magnetic pulling sensation that brought me to consciousness.

As I was in love with him, I liked to look at my sleeping friend, but I soon discovered that this was not possible if I didn't want to wake him up immediately. After just two seconds my deeply sleeping and loud breathing friend woke rapidly up and opened his eyes, irritated, looking for who or what had disturbed him. As I didn't want to steal his sleep, I avoided looking at him when he was asleep – but even if I forgot about that and looked at him by accident it was always the same result – he woke up immediately.

[From a woman in Germany] My husband and I sometimes play the game of gazing at the other who is sleeping until he or she wakes up. We call this “wachgucken” which means literally “to stare someone awake”.

I found that I could wake a sleeping colleague by staring at him during his afternoon naps. He had the habit of taking a large hot lunch each day, and then becoming lethargic in the afternoon. He would doze off in a sitting position. As his boss, I was not happy with this, and would be sure to give him deliberate, scornful glares. He would normally wake up as soon as I turned to stare at him.

In addition to these examples of waking someone from sleep, we received one account of waking from anaesthesia, describing a similar effect:

I am a recovery room nurse working and living in Alberta, Canada. People will wake from anaesthesia by being stared at. At least I find that happens with some of my patients.

Directional Responses

Some of our informants mentioned that they looked at a sleeping person or animal while thinking about them, and as quoted above, one person wrote that her cats “can stare their thoughts into me”, in accordance with their needs. This raises the possibility that, at least in some cases, waking occurred because of a telepathic influence, rather than because of staring itself.

However, one way in which scopaeesthesia seems to differ from telepathy is that responses to staring are usually directional, whereas telepathic responses are generally non-directional (Sheldrake & Smart, 2023). For example, in telephone telepathy, a person may know who is calling, but not know where that person is. Hence, when people are woken when they are being stared at if they respond directionally, this would suggest that they are reacting to the gaze itself rather than merely to thoughts or intentions associated with it. In our collection, there were 53 reports of directional responses. Animals and people were said to wake up in response to being looked at and look straight back at the looker.

In 38 cases in which animals were said to be woken by people staring at them, the reports described a directional response, and so did 15 cases where people were woken by the stares of an animal or another person (Table

1). Directional responses by animals made up 26% of the total, a higher proportion than the reported directional responses by people. Taking together the categories in which people were woken by animals or by other people (the lower three rows in Table 1), the human directional responses were only 11% of the total. A 2x2 chi-squared test showed that the proportion of directional responses reported for people was significantly lower than for animals ($p < .005$). We do not know whether this suggests that people are less directionally sensitive than animals, or whether it reflects a bias in reporting. Probably, people have more opportunities to wake animals than other people. Moreover, people may be less aware of their responses when woken themselves, and hence less able to notice the details.

Here are some of the reports of directional responses.

Dogs Woken By People

My dog sleeps in his bed at night, which is beside mine, and if I am awake in the night (which is quite often as I don't sleep particularly well) I sometimes look at him while he is sleeping. However, in doing this I seem to wake him up. He will suddenly open his eyes and turn his head to look straight at me. I just pat him, and he will then settle back down and go to sleep.

In my experience with my dog (mix between golden retriever and cocker spaniel and almost 10 years of age) it is possible to wake him up just by staring at him for a while. This happens fairly regularly, although not always. When he is asleep and I'm sitting on the sofa, some three meters away, staring at him, he frequently opens his eyes and looks straight at me. Although not successful all the time, it seems to work better when I'm consciously staring with the intent to wake him up.

I find that whenever I look at my dogs, they will lift their heads from sleep to look back at me and perhaps wag their tails. Not that I was intentionally trying to wake them, but as though they have a “sense” of the fact that my eyes were trained on them.

Cats Woken By People

I loved to watch my cat sleep because she assumed the most amazing positions, and often when I would watch her for a little while, she

would wake up and look right at me. Other times, when I would stare at her, she would utter her little acknowledgement murmur without opening her eyes, as if to say, “I know you are watching me, but I’m too sleepy to wake up.”

I can look at my cat from a distance, careful not to make any movement or noise which could alert him to what I’m doing and with hand on my heart, I can say he truly knows I’m thinking about him. His eyelids will gradually open to reveal beautiful green eyes, which will look sleepily in my direction before he groans, then snuggles down again, the interruption not seeming to be too much of a disturbance, just accepted as the mingling of our minds.

As my cat was lying fast asleep on the carpet, I decided to try waking him by staring. At first, nothing much happened, though I noticed that each time I stared at him and mentally said his name, his tail would twitch and start waving about. When I looked away and continued working on the computer, I saw – from the corner of my eye – that his tail would stop. After three tries of him lashing his tail without opening his eyes, I left him in peace for about five minutes. Then I turned my attention on him again, mentally thinking his name. The result was amazing. His whole body jerked awake and he turned his head and looked straight into my eyes accusingly, as if I’d physically shaken him awake.

This is the only example in our collection describing one animal waking another animal by staring at it. The response was directional.

Our cats Seymour and Sylvia had a very distant relationship. Seymour would crawl up and snuggle in my grandmother’s lap and go sound asleep. Sylvia would walk into the room and see Seymour asleep. She would stand in the doorway just staring at Seymour. He would awake in a start, look over his shoulder, see Sylvia staring at him and jump off my grandmother’s lap and run out of the room. Sylvia would then saunter into the room and claim some place of desire to her, but not on my grandmother’s lap.

Farm Animals Woken By People

This report is from a woman who farms in Britain.

I had a tiny piglet I was hand rearing. She slept in a tea chest by the cooker. I passed by it constantly going to the kitchen and bathroom, and as long as I didn’t look in, she would stay asleep, but every time if I looked in the box as I passed, she would grunt, and immediately be wide awake looking up at me. I have had the same experience with hand-raised orphan lambs, but they’re not so quickly lively as the piglet. I have also had pigs in their pens wake as soon as I pause and look at them.

People Woken By Animals

Almost all the example in this category concerned cats. With dogs, most people woke to find the dog looking at them, but the accounts did not make it clear whether this was because they turned to face the dog or because the dog positioned itself in such a way that it looked at the sleeping person’s face. This was also the case with most of the stories about cats, but in some cases the person seemed to have responded directionally, as in these examples:

A few years ago, my then partner and I lay on the sofa sleeping. The light was subdued. At some time during the night, I woke up. My look turned upwards/behind and I was startled. My partner’s cat sat at the bed-head and looked at me.

When the cats want to come in at night, they sit on the windowsill right outside my bed and they must simply sit there and stare at me. Without fail, I wake up in the middle of the night, look at the window, get up and let them in. My kids say a bomb could go off and I wouldn’t wake up. But I wake up without fail for my cats.

People Woken By People

This is the only example in our collection of a directional response by people woken by someone staring at them:

When travelling on subways I look at sleeping people. When I look at them with love, they wake up smiling and know instantly I’m the one staring at them. Then sometimes I look with hate, and they look up directly at me with fear in their face.

In most cases, these accounts suggest that the ani-

mal or person woke first, and then turned towards to the looker. However, in some cases, the orienting response seemed to happen while still asleep, or at least before opening the eyes. Here is a case with a dog:

I have a 3-year-old Catahoula Leopard dog who is lovable and loyal to a fault. He is so alert even while sound asleep. I can disturb him simply by focusing on him in his bed. When I've silently fixed my gaze on him, he cautiously opens one eye, already aimed directly where I sit or stand, regardless how he is positioned. He then waits for instructions and obeys appropriately, whether going outside or simply back to sleep, as told to do.

Likewise, with a cat:

My sleeping cat would wake when I stared at her. Sometimes she'd turn to face my direction before opening her eyes.

In this case, a woman found herself facing her cat when waking:

I had a cat who could wake me up in the middle of the night for food just by sitting in the doorway and staring at me. There were two strange things about this. The first is that I'm the kind of person who could sleep through Armageddon; the second is that when I woke up, I'd be staring straight at him.

Taken together, these accounts suggest that, at least in some cases, the orienting response usually associated with scopaeesthesia in waking animals (Sheldrake & Smart, 2023) also occurs in scopegersis and may be an integral part of the process. It is not as if animals or people are woken by stares and then look around to find the source of the stares, but rather the detection and direction of the stares go together, and in some cases, the orientation response seems to precede the opening of eyes upon waking.

Differential Sensitivity

Some of our respondents noted that some people or animals were more sensitive than others to being woken by staring.

My youngest male dog is extremely responsive in all circumstances and my oldest male responds

differently depending on timing. An example of this would be late at night when it's time for him to be put outside. If I try to wake him by staring and he's not ready to go outside, it will fail.

When my first baby was born, I used to love staring at him when he was asleep, but I would not do it with my second baby because he would wake up straight away.

When my son was little, he could wake me in the middle of the night by coming to the bedroom door and staring at me. He knew that would wake me but not his father.

I have two Norwich Terriers. My older dog doesn't seem to notice me or anyone else stare at her either awake or asleep and never has, however my other dog does. He is 18 months old, and often while he's asleep if I look at him for a minute or two, he'll suddenly open his eyes and look straight at me no matter how close I am to him or where I am in the room.

In addition, some of the accounts suggested that animals were less sensitive to being woken when they were dreaming, as judged by their bodily movements. In six cases with dogs and one with a cat, our informants (all women) mentioned that their animals' sensitivity depended on whether they were dreaming or not. We did not ask about sensitivity in different states of sleep, so all these accounts were unprompted. The first example, from an Australian woman who kept several dogs, is the most detailed:

I have found that I can wake my dogs by staring at them with various determining factors. These include the sleep pattern: dream state (least likely), deep sleep (moderately likely) or napping through inertia (very likely). My feelings and intentions prior to and during the stare also seem to impact. Warm, loving feelings tend to rouse them more efficiently and they are ready for a pat pretty quickly. If I'm cross with them, they seem to ignore me but can often ear-twitch and even rearrange themselves to face away from me in their bed. If they've been excited or perceive a threat prior to their nap, e.g. we have a visitor, they are much more likely to wake up. (I don't know if they get to deep sleep state with visitors in the house).

My dog Pooka is more psychic than I am, and I am a professional. She definitely wakes up when I stare at her. However, she does not wake up if I stare at her when she is having a hunting dream. That is, when her legs are running and her eyes rolling.

I have a young black female German Short-haired Pointer who is incredibly sensitive and will wake when I stare at her unless she is in deep sleep dreaming.

I am owned by a five-year-old male Patterdale Terrier. Unless he is in a dream state, I can always wake him by staring at him from across the room.

I can wake my small poodle by staring, unless she is very deeply asleep and dreaming. I've been careful not to do anything but raise my eyes, if I've been reading for example, and look directly at her, and her eyes open within 30 seconds, and she focuses on me.

In the following case, a British woman found that she could wake up one of her dogs even when it was dreaming, and saw this as a sign of unusual sensitivity:

I have two Brittany Spaniels, Bryn and Honey. Honey is deaf so we rely on eye contact to communicate. Both of them, if asleep, will wake up if someone is looking at them. Honey is most likely to wake up first if someone is looking at her and she will even wake up if she is in a dream or deep sleep. Bryn also wakes up when someone is looking at him, but he is not so sensitive to people looking at him as Honey is.

Here is an account from Canada of a cat that was less likely to wake when dreaming.

My cat not only knew when I was staring at him, he knew when I needed to know that I was staring at him! He would hardly open one eye – acknowledging my inquiry – and close it again. When he was in a deep sleep – dreaming or twitching – it was more difficult to communicate. The staring thing seemed to have a window.

If further research confirms that dogs, cats and other animals are harder to wake by staring at them when dreaming, this could suggest either that dreaming reduces their ability to detect that they are being stared at, or

that it inhibits their ability to respond, or both, as discussed below.

DISCUSSION

Inevitably, our collection of cases is biased in favor of situations in which people or animals were or seemed to be, woken by staring, as opposed to being stared at and not woken. As with field observations in general, we cannot be sure that these responses involved causation rather than correlation. It could be argued that people happened to look at a sleeping animal or person who just happened to wake up at the same time, perhaps by mere coincidence. If people forgot the occasions on which sleepers did not wake when stared at, remembering only the occasions when they appeared to do so, then an illusion of waking by staring could be created in people's minds.

It is also possible that sleeping animals or people really did wake when looked at, not because they detected and responded to looks, but because of subtle sounds caused by the movements of the people or animals staring at them. Then, the problem would be to explain why sleeping animals and people only wake in response to some sounds rather than others, and why faint sounds that might be caused by turning to look at them would have more effect than all the other sounds in the environment. However, most people are aware that sleeping people or animals can be woken by noises. The reason our informants thought that waking was owing to stares rather than sounds was because there was little or no accompanying noise. The fact that some of the responses were directional implies that that they were indeed a result of being looked at.

When people and animals are awake, their response to being stared at is usually directional: the person or animal stared at turns to look straight at the looker (Sheldrake & Smart, 2023). This feature of scopaeesthesia supports the idea that the response is indeed to the visual aspect of staring, rather than a kind of telepathic response to the focussing of attention. Telepathy is generally non-directional: for example, people may feel who is calling them on the telephone or emailing them (Sheldrake, 2014) but not know from what direction the call or email is coming. Moreover, it is possible to focus auditory attention on someone by listening to them, but in experimental tests, people were unable to tell when they were being listened to on the telephone, compared with periods in which they were not being listened to (Sheldrake & Stedall, 2023).

It is, therefore, of particular interest that more than a quarter of the reports of animals waking in response

to stares responded directionally (Table 1), immediately turning towards the looker. Similar directional responses were reported in 15% of the descriptions of people being woken by the looks of animals. In our appeals for information, we did not ask about the directionality of responses, so our informants were not prompted to mention them, and some may have omitted these details. Hence, the percentages in Table 1 are probably underestimated. In future appeals for information, it would be worth including a question about directionality.

According to several of our informants, animals' sensitivity seemed to vary according to the state of sleep, differing during dreams and in sleep without dreams. Experimental studies in which sleeping animals or people are filmed and watched at randomized times could provide quantitative data on these points. At present, however, in this preliminary exploration of the natural history of *scopegersis*, the only information available is people's personal accounts.

Several of our informants commented on the variation in sensitivity between individual dogs, cats, and people, for example, "My older dog doesn't seem to notice me or anyone else stare at her either awake or asleep and never has, however my other dog does." People and animals differ in their sensitivities to sounds, smells, visual cues, and other stimuli, and the same might be expected with *scopaesthesia* and *scopegersis*. In general, both when awake and asleep, it seems likely that *scopaesthesia* depends on the intensity of the stimulus and on sensitivity to it. Low-intensity stimuli or low sensitivity may result in no effects or subliminal effects; overt responses may occur only when the stimulus and sensitivity are above a threshold level. This threshold may change according to attentional and physiological states and seems to be higher when dreaming.

Although the accounts we describe in this paper strongly suggest that people and non-human animals can be woken by staring at them, this finding needs to be explored experimentally. The first step could be to use straightforward, non-invasive methods carried out in the animals' normal environment. The simplest tests would involve filming them when asleep and staring at them at randomly chosen times to find out whether they wake in response. Several dog owners have, in fact, already carried out preliminary filmed tests at our request with positive results, but so far, these experiments have not been done with rigorously randomized timings. The best-case scenario would be for a scientifically minded dog or cat owner to train their animal to wake in response to stares by rewarding them for doing so, and then to conduct filmed tests in which they stare at the animal at randomized times through a soundproof two-way mirror or a

window covered with two-way mirror-film.

The ability to detect staring seems to be both widespread and evolutionary ancient, at least among mammals and birds, suggesting that it has been favoured by natural selection (Sheldrake & Smart, 2023). The most obvious possibility is that it plays a role in predator-prey relationships. A prey animal that could detect the looks of a hidden predator would stand a better chance of escaping than one that could not (Sheldrake, 2003). Animals are especially vulnerable when they are asleep, and therefore, the ability to detect stares might be particularly helpful for sleeping animals. Because this type of stare-detection is non-visual, it does not depend on the eyes being open. The cases described in this paper suggest that *scopaesthesia* does indeed occur in sleeping animals and humans and can lead to their waking up, for which we use the new word *scopegersis*, literally "look-awakening". A German term, suggested by one of our informants, is *wachgucken*, "to stare awake".

Although almost nothing is known about the way in which stares are detected, responses seem likely to depend on regions of the brain that are concerned with alertness to potential threats and orientation towards salient stimuli. In this connection, a recent suggestion by Bettinger (2023) is very relevant. He proposes that the brain region most likely to be involved in *scopaesthesia* is the superior colliculus, located in the dorsal posterior midbrain. The superior colliculus, also known as the optic tectum, is a visual processing and attention-control center for orienting the body, head, and eyes, directing defensive behavior (King, 2004), and detecting evolutionarily significant stimuli that require immediate action, such as approach and avoidance behavior (Castro-Alamancos & Keller, 2011). This brain region's function is largely conserved in vertebrates, including fish, amphibia, reptiles, and birds. It is the oldest visual-processing area in vertebrate brains and plays a major role in unconscious "attentional capture" (Fuchs & Ansorge, 2012). Once stares have been detected, it seems probable that this brain region plays a major role in animals' responses to them both when they are awake, as Bettinger suggests, and also in the process of being woken up.

In this context, the observation by some of our informants that their animals seemed less sensitive to being woken by stares when dreaming is of particular interest. If confirmed by further investigations, this could mean that the animals are either less able to detect stares or respond to stares when dreaming. The visual regions of the brain, including the superior colliculus, are known to be activated during rapid-eye-movement sleep associated with dreaming (Bókkon & Mallick, 2012; Cohen & Castro-Alamancos, 2010). If the superior colliculus does

indeed play a key role in scopaesthesia, its involvement in dreaming may inhibit its ability to respond to the detection of staring.

An experimental investigation of the brain regions involved in scopaesthesia would be difficult to carry out with domestic dogs and cats because most pet owners are unlikely to want their pets to be wired up for EEG measurements, or for their animals to be immobilized in brain scanning devices. However, it might be possible to study sleeping human subjects while monitoring their brain activity using an EEG in order to try and detect changes in activity when the person was being stared at. If it were possible to study scopaesthesia with laboratory rats or mice, more detailed studies might be feasible. In a laboratory setting, sleeping rodents could be observed through a two-way mirror to avoid any possible auditory, olfactory, or visual cues. In the first phase of this research, the effects of looking at randomized times by human observers could be compared with looking by cats, which may be more effective at waking the sleeping rodents. If they can be woken by staring under these controlled conditions, it should be possible to study the rodents' brain activity during scopegersis and investigate the role of the superior colliculus when they are dreaming and when they are not.

Our case collection is largely based on experiences with humans, dogs, and cats, with only a few examples of other mammalian and bird species. Almost nothing is known about scopegersis in reptiles, amphibia, fish, and invertebrates. A wider exploration of its natural history would be possible by appealing for information from people who keep unusual pets, including reptiles, such as snakes and lizards, and insects like stick insects, as well as from people who work in zoos or aquaria. For example, can sleeping octopuses be woken by staring at them?

This is an almost completely unexplored area of scientific inquiry. At this stage, we do not know how widespread scopaesthesia and scopegersis are in the animal kingdom, or when they might have evolved. Fortunately, much of the preliminary research could be done inexpensively in student and citizen science projects. Such research could help in developing an understanding of scopaesthesia itself, which may depend on a new understanding of the nature of vision (Gomez-Marin & Sheldrake, 2023). Scopaesthesia also implies a new type of non-visual sensory system that detects the directional attention of others, perhaps through some kind of biofield extended around the body. Simple, though this research may be, it has profound implications for our understanding of minds and sensory abilities. It could play an important part in a shift of paradigm from minds locked inside heads to minds extended beyond brains and bodies into

the wider environment, capable of direct interactions with other minds and bodies.

IMPLICATIONS AND APPLICATIONS

The ability of sleeping people and animals to detect when they are being stared at and respond by waking up may be widespread in the animal kingdom and may have evolved in the context of predator-prey relationships. It seems to be closely related to scopaesthesia, the ability of animals and people to detect when they are being stared at by an unseen looker when they are awake, and to respond directionally by turning to look at the looker (Sheldrake & Smart, 2023). Our preliminary results suggest that this phenomenon, which we call *scopegersis*, would be well worth investigating experimentally. Like scopaesthesia, it implies that an influence flows outwards from the eyes of lookers and can be detected non-visually by an unknown sensory system, which may be a kind of biofield surrounding the body.

ACKNOWLEDGEMENTS

We are grateful to all our informants for sharing their experiences with us and to the Planet Heritage Foundation, Naples, Florida, and the Watson Family Foundation, London, for financial support. We thank Alex Gomez-Marin, Merlin Sheldrake, and our anonymous referees for their helpful comments on the drafts of this paper.

Author Contributions

Rupert Sheldrake: Conceptualization, Data analysis, Writing – original draft, review and editing, Funding acquisition. PS: Data curation and analysis, Writing – review of draft.

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