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Vision and visual experience in European Celtic Art: towards new interpretations from neuro-atypical perspectives

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Abstract

Analysing ancient art offers views into the visual worlds of its makers. The cusps and swirls typical of European Celtic Art have been interpreted as abstractions of faces and creatures inspired by earlier, more naturalistic art. Yet as 21st-century visual communicators used to 'reading' abstract emoji, we may be over-interpreting this aspect at the cost of other, still hidden dimensions. While humans share inalienable universals across space and culture, such as recognizing friendly or hostile faces, persons who lack facial recognition are diagnosed with autistic spectrum condition. However, their condition enables them to recognize embedded figures easily within crowded images or to focus on pattern instead of faces. My initial assessment indicates that some imagery of European Celtic Art would be compatible with an autistic idiom, similar as suggested for Palaeolithic art. This paper investigates these different ways of seeing European Celtic Art and opens new pathways for future research.

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Asking new questions about European Celtic Art

This paper investigates the visual properties of European Celtic Art, dating to between the 5th century BC and 3rd century AD. In a fresh approach, it explores new thoughts on the cognitive aspects behind what can be seen in its designs and why. Existing studies range between archaeological, art historical, and anthropological methods and have explored what can be recognized in these lines and swirls, voids and cusps that are so typical for this art from Scotland to Continental Europe (Fig. 1; e.g. Jacobsthal 1944; Hunter 2015; overview in Hunter 2016). Studies have searched for the representation of an encoded knowledge or found a playful way of identifying hidden creatures and faces in a spirited negotiation of the real and surreal (e.g. Megaw and Megaw 1989/1991; Olivier 2014; Wendling 2018; Ginoux 2020; see review in Romankiewicz forthcoming). These perspectives see the art as enchanted, “powerful objects” (Hunter 2015; Frey 2017; Wells 2017). As Jacobsthal put it in 1941: “But to the Greeks a spiral is a spiral and a face is a face, and it is always clear where the one ends and the other begins, whereas the Celts ‘see’ faces ‘into’ the spirals or tendrils: ambiguity is characteristic of Celtic art.” (Jacobsthal 1941, 310). The application of anthropological-behavioural research (Gell 1998) and consideration of technological and art theoretical aspects have helped to understand what this art ‘did’ in different social settings (Garrow & Gosden 2012; Wells 2012; Joy 2020). There is, however, an underlying assumption the objects were made for an initiated few, either as narrators of myths or apotropaic talismans for a Celtic elite (Frey 2002; Rieckhoff 2010; Bagley 2014; Müller 2014: 37). I have concentrated on the creative processes involved in making and seeing this art, and argued that these complex designs are not just creations of the past, which now remain silent, but that they are still active today to detect new meanings and to provide transcendental experiences when immersing oneself in these designs (Romankiewicz 2018). Similar to other complex art forms, arguably it does not only matter what the artist intended to create at the time, but each new experience of an artwork is equally valuable – whether designed as such originally or not (Freeland 2001: 117–8; D’Alleva 2012; Gosden 2020: 10–3). In my interpretation, European Celtic Art is a levelling art, accessible across different perspectives, experiences, as well as social and cultural contexts, but also across time.

In order to take this research further and to approach how prehistoric people without written records conceptualised this art, I need to study it as a material expression of their worldviews. Colin Renfrew defined this as ambitious and not without challenges, but essential for reaching into the minds of the makers of European Celtic Art, using methods from Cognitive Archaeology (Renfrew 2017: 23–4; compare Casson 1933). This is the objective of my new research, of which this paper forms a first step towards identifying specific research questions and proposing first answers that need systematic testing. A key aspect will be to differentiate vision from visual experience, what Wittgenstein’s paradigm discerned as “seeing that” something exists in contrast to “seeing something as” being a certain way (Anaya and Clarke 2017; Clarke and Anaya 2019). Following a review of existing interpretations of European Celtic Art, I will briefly summarize key aspects of cognitive scientific research relating to cultural, biological, but also neuro-atypical visual abilities and experiences.

More specifically, this paper aims to initiate a re-analysis of objects of European Celtic Art with a “different” eye to ask for the potential of artists with autistic spectrum conditions within its idiom –

as has been argued for Palaeolithic cave art (Spikins 2009, 193–5; Spikins and Wright 2016; Spikins et al. 2018). By opening a new layer of seeing, my enquiry wishes to approach new visual qualities of the art as well as understanding the visual talents of the ancient designers. Aware that I am affected by my seemingly neuro-typical observation patterns and my modern-western acculturation, it is important to develop new perspectives beyond these limitations for a new study and understanding of designs and the designers of European Celtic Art that expands our perspectives. This is my future direction for this research.

This paper is, however, also about limitations. Two-and-a-half thousand years between our present day and the people living in Iron Age Europe may limit what we can test and how we can answer these questions. This paper is therefore also a speculation – and an experiment, because its other limitation is the pathway of the research itself. The work is only in its infancy and this paper considers testable hypotheses that still require substantial further research. Some questions are also important to ask, even if they cannot be fully answered.

No genesis of European Celtic Art?

At the beginning of the art historical discourse on European Celtic Art, Paul Jacobsthal postulated that it “has no genesis” (Jacobsthal 1944: 157). What he meant, according to the Megaws, was that it appeared in several places at around 475/450 BC as a new art style, in France, western Germany, and Bohemia, but without a “learning stage” or developmental sequence (Megaw and Megaw 1989/1991: 25–49). Instead, Jacobsthal identified three areas and their arts as influences (Jacobsthal 1944, 155; compare Megaw and Megaw 1989/1991; Gosden et al. 2020). One came from the Mediterranean, from Late Geometric, Archaic, and Early Classical Greek art of the 8th, 7th, and into the 6th and 5th century BC – in particular from frieze decorations and animal depictions on painted pottery. Influences also lead to Etruria, providing characteristic examples such as the *Schnabelkannen*, i.e. the beaked jars (Guggisberg 2018; Romankiewicz forthcoming). The second strand can be traced to the enchanted animal styles further east, of Thrace and the Steppe people (Megaw and Megaw 1989/1991; Gosden et al. 2016; O’Sullivan and Hommel 2020; Wells 2020). Finally, there are of course local influences, in particular the northern art theme of water birds known since the Bronze Age (Kaul 2014) and the Situla art of the Alpine area (Armit et al. 2016: 12–3). These three strands fused with the geometric styles of the local Hallstatt art of the 7th and 6th centuries BC – particularly known from pottery (Megaw and Megaw 1989/1991: 29–34, 42–5), but took on more curvilinear designs, in which triangles and lozenges merged into tendrils and conflated into key themes of this Early Style: heads and circles, voids and relief.

How can we explain that a new art form sprang into being without an experimental stage and appearing simultaneously in several places? Based on recent finds around the Heuneburg, Baden-Württemberg, SW Germany, Dirk Krausse reiterated that a “genuinely new art” was developing in southwest Germany in the 6th century, which he links to a small group of what he calls “avant-garde” artists” (Krausse 2020, 152). However, his argument somehow implies developmental stages as he revives Alfred Haffner’s idea of an early proto-La Tène phase, which also included developments elsewhere, particular in France, where “some artists had already moved beyond [the] geometrical, traditional style art” of the Later Hallstatt period, prior to the 2nd half of the 6th century (Krausse 2020, 152; see Haffner 1991). Overlapping circles on a lance head from the Gießübel-Talhau cemetery in the immediate area of the Heuneburg, dating to around 530/520 BC, related lines and circles so they appear connected, which is not seen in the earlier Hallstatt art. A similar connection between circles, lines, and dots can be recognized on a chamfrein from the

Bettelbühl grave from the same area. However, these circles do not yet interconnect like the intricately woven knotworks of the Early and Vegetal Styles of European Celtic Art. They only explore a departure from static circles to dynamic spirals and still lack the complexity and dynamics typical of the later La Tène art styles (Guggisberg 2018).

In contrast, Rudolf Echt and Felix Müller proposed a model for the sudden genesis of European Celtic Art based on artistic abstraction. While Echt refers to Greek imports from the east for inspiration for this abstraction (Echt 2014), Müller finds Classical examples from Apulia, such as the ceramic vessel from a grave context with the direct representation of a human head associated with tendrils (Müller 2014, 29, fig. 4.6a). He argued that such images had been abstracted into minimalist face-scheme designs in European Celtic Art such as the one Müller recognized on the European Celtic Art sword scabbard from Filottrano, also from a grave context (Fig. 2a and c; Müller 2014: 29, fig. 4.6b). Echt and Müller see this as a “selective borrowing” of motifs as Kruta described it (Kruta 1988), from Classical ‘realistic’ plant friezes with vegetal wave tendrils (“Wellenranke”) translated into the abstract curls of the Early Style or Waldalgesheim style of European Celtic Art with its characteristic tendrils (compare Fig. 1; Verger 1987: 299).

Laurent Olivier has used art theoretical models to explain this difference between the Mediterranean and the Celtic art forms (Olivier 2020). He discerns an “intellectual realism” in European Celtic Art from a “visual realism” of Mediterranean art styles, in which the former produces analogical representations in contrast to the naturalistic imitations of the latter. Like Echt and Müller, Olivier’s model would explain why a new art form appeared suddenly and fully developed in different areas – as these artists were operating within different modes of visual experiences and expressions compared to Mediterranean Art. However, Olivier’s interpretation may only apply to later Mediterranean art, in particular to Hellenistic and Roman styles, which he and Müller specifically draw upon. The complexities and ambiguities of Early Greek art, especially of the 7th to 5th century Archaic and Early Classical styles, cannot easily be equated with a formal naturalism (Romankiewicz forthcoming). Recent studies have questioned Ancient Mediterranean arts as the archetypes of naturalist representations, especially in this Early Greek context, which chronologically sits earlier than European Celtic Art and so could have influenced its earliest development, rather than the 4th century and later Hellenistic style, which is contemporary with later European Celtic Art styles such as Waldalgesheim. These recent analyses of Early Greek art emphasize its ambiguity, and with this, the “otherness” of Early Greek art to our modern understanding of it as naturalistic – and to our modern understanding of naturalistic art more generally (Neer 2010; Platt 2011; 2014; Dietrich 2013; 2018; Romankiewicz forthcoming).

Beside the questions raised above, that is how different the artistic intentions about depicting reality between Early Greek and European Celtic Art actually were (Romankiewicz forthcoming), the general arguments contrasting these two art forms assume that there is a similar way of seeing between the artists of the different styles. The only difference is in their ways of expression, using different levels of abstraction, i.e. analogical or physiological conceptions. What I would like to explore here, is whether the differences between Celtic and Mediterranean art could have involved a different way of seeing – a neuro-atypical vision.

Abstraction or translation – or turning ways of seeing on their head?

Müller in particular argues for European Celtic Art to have been an *ideoplastic* art, which is the expression of an idea into a tangible object, the expression of an intellectual understanding into art.

Using Barasch's 1998 model, Müller contrasts this with the *physioplastic* art of the Mediterranean world, which he sees as dominated by reproductions of "what the eyes see" (Müller 2014: 29; Fig. 2b; compare Romankiewicz forthcoming). But what do the eyes see? And whose eyes are these?

What if we turned this whole argument "on its head", literally by 180 degrees? Then the Filottrano scabbard design of European Celtic Art mentioned by Müller becomes indeed an abstraction, but turned by 180 degrees it is an abstraction of a *plant* rather than of a head (compare Fig. 2a and 2c). Similarly, whoever saw an original Classical Acanthus leaf "inspiration" could have seen a Greek frieze upside down as a ruinous fragment (Fig. 2b and 2d), so-to-say "heads-up", in a way which then "revealed" abstracted faces or in this particular instance, beaked faces, possibly of birds. For these up-side-down examples, it is far less of a leap to translate such shapes into faces or similar imagery. The argument becomes even more compelling for portable objects that can be turned around in a viewer's hand, such as the palmette frieze on the Attic volute krater dating to 490-460 BC, where this motif was shown as mirrored already (Fig. 3). Items like the Archaic painted pottery plate from Kamiros, Rhodes, expand this theme further, since the central ornament of abstracted coils, palmettes, tendrils, and circles joint by a triangular chequered pattern "grows" into a face of almond-shaped eyes, eyebrows, nose, even freckles, complete with helmet and its nose piece. (Fig. 4; see Squire 2018: 12–5). Following Michael Squire, if his interpretation is indeed what the Early Greek beholder saw, they, too, would have seen "faces into the spirals", similar to what an artist of European Celtic Art may have seen in these motifs (contra Jacobsthal 1941: 310). Even more tangible as a direct stimulus is the so-called upside-down palmette on the handle attachment of the bronze bucket (*situla*) from the Waldalgesheim burial. This import appears alongside locally made objects of European Celtic Art, whose tendrils could be seen as reflections on the upside-down Mediterranean motif (compare Fig. 5 with Fig. 1 and Fig. 2d; Guggisberg 2018: 272; Gosden 2020).

Modern interpretations of European Celtic Art highlight the abstracted or mythical character of its imagery, presenting an ideoplastic interpretation of this art, when it is equally possible that its designs could have been much closer to their apparent Mediterranean influences – if these "originals" were already seen with a different eye that connected abstract shapes into animated figures. We cannot assume that the European Celtic artists saw the Early Greek art with the same eyes than their Greek counterparts – or similar to us today. Therefore, their depictions could have been much more "realistic" or "imitating" not to what we see, but to what *they saw* in the Greek art – or even close to what the Greek artists saw as well given the more imaginative reading suggested by Squire. We need to explore alternative interpretations that allow for these images to be more closely related to the Iron Age understanding of the world rather than concentrating on explanations that are influenced by how their imagery appears so enigmatic to us today.

A modern way of seeing

The exhibitions by the British Museum in London and the National Museum of Scotland in Edinburgh in 2015 and 2016 on *Celtic Art and Identity* demonstrated the popularity of this topic (Farley and Hunter 2015). People today are still fascinated by Celtic Art, but also alienated by what it is supposed to show or what it means, especially those spectacular Iron Age objects made from precious metals (Fig. 1). As modern, western beings our acculturated aesthetics arguably show affinity for naturalistic art such as Classical art, yet this affinity is heavily influenced by Renaissance paradigms, which only revisited the art of Classical Greece and Rome without seemingly reflecting on their inherent ambiguities (Palladio 1570). Our own acculturation can easily curtail our

understanding of art that is different or “other” (Berger et al. 1972); and this otherness is difficult to quantify (Gell 1998).

In the 21st century, we are living in a world of increasingly visual communication. Icons, symbols, and emoji are replacing the written word, which positively helps to circumnavigate language differences. On the other hand, they emphasize the representational aspects of images. The visual world is becoming one of signs and we are trained to seek their meaning (Preucel 2006). If we are part of the domain of these visual worlds, we can read and understand the icons. If we are not, they remain silent to us (Sawyer 2012: 59). Despite its ostensible enigma, however, the iconography of European Celtic Art is far from silent. It reaches out, it fascinates, although its meaning puzzles us – as we are not part of its domain we struggle to understand it (Romankiewicz 2018: 47). Are we as modern visual readers poised to recognize patterns, faces, and animals everywhere to the extent that our modern affinity to semiotics increases our potential to “read” European Celtic Art? Or does this over-focus on faces and symbols obscure another, as yet unseen dimension within this art?

Further art-theoretical analysis is needed beyond the scope of this paper to address these aspects, building in particular on existing works on the semiotics and image praxis of European Celtic Art and their archaeological context (Bagley 2014; Rebay-Salisbury 2016). However, it is important to address the deeper interpretation of these visual worlds via art theoretical and psychological aspects (Huth 2003; Wells 2012; Robb 2015).

“Hidden(?)” faces and homologies

Our visual experience of European Celtic Art as a gradual and growing recognition of hidden faces of human and animals or mythical creatures suggest this is a crowded art with hidden messages. The processes of discovery and cognition can generate agency for the object, it “does” affect us, transforms our perception, and draws us in further (Gosden 2020: 10–3). This phenomenon is known from traditional ethnographic art, such as the Trobrian Island canoe prows from Oceania with their abundant faces that aim to mesmerize the viewer (Gell 1998; Garrow and Gosden 2012). If even people far removed from modern emoji iconography such as the Pacific Island tribes see abundant faces in their art and in the art of their opponents, this suggests a shared theme that builds on a common denominator – seeing faces everywhere. Such phenomena are known as “homologies”, i.e. that certain “features [are] possessed by humans and their relatives by virtue of their common descent” (Fessler and Machery 2012: 505). Cognitive philosophers speak of basic traits and instincts, which they describe as “psychological universals” that are inalienable beyond contemporary cultural, social, or environmental context (Fessler and Machery 2012: 505). How far these universals can be applied and how deeply they reach into our conscious and subconscious behaviour is still hotly debated within the discipline of Cognitive Philosophy. One example of such a homology that can be described for small-scale hunter-horticulturalist communities as well as modern, technologically complex societies is the “approximate number sense” (Hauser and Spelke 2004). This trait allows humans to judge the approximate number of individual items without needing to count them – and provides the ability to compare quantities. Another trait is the phenomenon of “shame” – an emotion that may have very different triggers and expressions in different cultures, but describes a basic emotion and underlying brain activities that are the same in all humans and even in various animal species (Fessler and Machery 2012: 505).

Such shared traits like assessing the number of adversaries or recognizing socially sanctioned behaviour are important for interpreting the world around us to inform our decisions. They help us

survive and to act as social beings. Such traits also are arguably evolutionary conditioned, which means natural selection has favoured a standard response that is not culturally or environmentally dependant. This means that a standard, non-culturally determined response, if successful, will persist and in this way become a "single optimally adaptive variant" (Waddington 1940, *passim*). Successful strategies are therefore in some way self-selecting.

The recognition of a human face is another of such traits, in fact a survival strategy.

Not-so-hidden faces

Recognizing a fellow human with whom we can engage and procreate is the most basic strategy of human survival as a species. Recognizing a friendly face, an angry face, whether somebody approaches us with fear, wrath, or calm is also important for surviving as an individual. This is, however, nothing specifically human, as animal survival strategies operate on similar traits. These become particularly apparent when certain triggers for one species (i.e. upright tail, wagging) signal excitement (dog), but mean apprehension and aversion for another (cat). Another important aspect which humans again share with animals is the emotional engagement activated by a "Schlüsselreiz", an impulse which initiates an innate releasing mechanism. This reaction is particularly well studied for the instant affinity and the impulse to care when certain visual markers related to facial recognition trigger this reaction (Glocker et al. 2009). This phenomenon is known as the "Kindchenschema" – the baby schema, first described by the Austrian ethologist Konrad Zacharias Lorenz when researching animal behaviour (Lorenz (1943). He defined certain characteristics of visual features and movement patterns associated with young animals, babies, and toddlers: a large head and large eyes combined with a certain narrow distance between these facial features. This impulse to care can easily be simulated (and manipulated) by varying these distances, distributions, and dimensions which seemingly works even at the most basic level of abstraction (Fig. 6).

Recognizing facial expressions is therefore part of our socialization, communication, and survival strategy. This may explain why we are poised to see faces everywhere, and this would render this impulse independent from a cultural or chronological context. Recognising faces within European Celtic Art is therefore something we are poised to do – and arguably the artists at the time may well have played with this Schlüsselreiz, stimulating our impulse for seeking such recognition within deeper and more abstract representations (Fig. 7).

Seeing European Celtic Art

Being able to interact at this non-verbal level of facial expressions is seen as so important in our culture that persons who lack this skill are described as atypical. As these reactions are triggered and communicated within our brain via neuro-connections, these persons are described as neuro-atypical (Baranek et al. 2019: 100). In medical terms, such persons are often diagnosed with a condition on the autistic spectrum (ASC).

Above, I have discussed that for relational-ontological interpretations of modern art, it is secondary whether an artist had intended any particular reaction or stimulus deriving from their artwork. If a beholder engages with this work, and has a certain reaction, experience, thought, or recognition, then this is a similarly valid result from this artwork than any intended effects by the artist. There is in a very basic sense, no right or wrong in art interpretation. I would argue that there is therefore, also not a right or wrong with the visual sense more generally. Out of cultural and social necessities,

we have developed certain definitions to agree on what is red, blue, dark, or straight, but do we all see the same red and the same curvature? Beyond colour-blindness or astigmatism (a refractive eye condition which distorts straight lines), differences in our visual apprehension cannot be ignored. Do you see what I see? In this line of argument, and following the conclusions about the inspiration for some of the imagery in European Celtic Art, a neuro-atypical way of seeing would simply be a *different* way of seeing, a different *focus* of what is seen.

Clinical tests have demonstrated that persons with neuro-atypical aspects do not fixate on the same facial features than so-called typically developing persons (TD) – and therefore are diagnosed as having difficulties with recognizing human faces. The TD group focuses on eyes and mouths (Fig. 8a–d), while the eyes of people with a fragile X syndrome (FXS) – the most common genetic cause for autistic spectrum condition – wander around and are comparably less focused on typical facial features (Fig. 8e–h; Farzin et al. 2009; compare Cohen et al. 1991; Cohen et al. 2005). If there is a fixation within the observation patterns of the FXS group, it appears around the nose, the objectively most prominent part of a human face. Because of this lack of general focus and disproportionate frequency of looking at noses, the tracking patterns of atypical eye-movements have been interpreted as avoiding eye contact. More generally, persons with ASC are identified as having problems with recognizing faces.

How then would a person with difficulties in identifying eyes and mouths of real-life faces see European Celtic Art – apparently abundant with hidden faces? If we recall Jacobstahl’s statement that “the Celts ‘see’ faces ‘into’ the spirals or tendrils” and how he identifies ambiguity as a key characteristic of European Celtic Art, two aspects pointing in opposite directions arise: (1) if there are so many hidden faces – have we detected them all? It is possible that we, compared to the Iron Age artists, are neuro-deficient by not seeing everything that is there – since scholars continuously discover more hidden designs. Or, on the contrary, (2) our over-focus on facial recognition could over-emphasize faces in these designs, while the ambiguity of the art does not necessarily mean these were all intentionally created as faces originally. Are we under- or over-interpreting European Celtic Art?

Not seeing European Celtic Art

The Celts exhibition sent a key message to its visitors: there is not one Celtic Art – but many (Hunter 2015). On one hand, this may explain our difficulties in tracing its origins and developments, and on the other means that there is not one “way of seeing” European Celtic Art, which needs to be deciphered, but several ways of seeing, and in consequence a multitude of ways of cognition and interpretation. There is also not one way of designing and making European Celtic Art.

For example, the highly representational coins of Philip II of Macedon, which show his portrait in profile have seen many “Celtic” reinterpretations or abstractions. Some of these mimic the original relatively closely; others are highly abstract, somehow obscuring the face in favour of the pattern created by the curls of hair which instead dominate the design (Fig. 9). John Creighton has highlighted links between some of the abstract or seemingly mythical Celtic coin designs with imagery created by altered states of consciousness (Creighton 2000, 40–54). His argument shows that some artists producing European Celtic Art on coins seem to have had neurologically different visual foci from the original Hellenistic artists, and perhaps from other contemporary artists working within European Celtic Art as well. Whether this can be traced to temporarily altered states of mind or to genetically different neurological experiences, these depictions on Celtic coins suggest they

show what the artists' eyes saw – and this took a different emphasis to what we would see today, or even what neuro-typical persons would have seen at the time. Instead of focussing on facial features, their attention was drawn to the curls of hair and their stylized patterning. This is a typical trait associated with autistic spectrum condition (ASC). These specific coin images may suggest that some artists perhaps were subject to similar conditions.

The frequent appearance of these abstracted coins does not necessarily need to imply a widespread occurrence of ASC artists, or indeed ASC coin users who preferred these images. Their frequency could simply suggest that many contemporaries in western temperate Europe where these coins circulated had accepted this different visual focus – different from those in southern Europe, and from us today. This could be explained by a greater cultural affinity with this way of seeing – trained in seeing European Celtic Art, these people were familiar with these images and could quickly recognize their features. Therefore, this art may have been far less enigmatic to people whose mental map was attuned to its imagery (Romankiewicz forthcoming). The coin example highlights that neurological context as well as acculturation need to be considered in order to understand different forms of visual interpretations.

Another example can be discussed for the handle-attachés found on the two vessels in the Kleinaspergle burial in SW Germany; one on an Etruscan *stamnos* (storage jar), the other on a *Schnabelkanne* (beaked jar) in the Early Celtic Art style (Fig. 10a and b). The Etruscan example suggests that the artist broke down the individual components of a human face into similar geometrical elements and created new elements such as the eyes by overlapping similar-sized circles (Romankiewicz forthcoming). In the *Schnabelkanne* design, the bearded face is somehow obscured by decreasing the size of its stacked circles – with the largest not representing the eyes, but the eyebrows instead. It may be that this was a deliberate deconstruction of a face or that the visual focus of the *Schnabelkanne* artist emphasized other aspects, such as geometric form and patterning (Romankiewicz forthcoming). Similar to the artists of the coins, they may have been less focused on recognizing the face on the *stamnos* handles in what could be identified as the original inspiration; these artists may instead have focused on something different: bulbs, cusps, and swirls rather than eyes and moustaches (see Romankiewicz forthcoming for a detailed design analysis of the two objects).

Autistic spectrum conditions in European Celtic Art?

We can attempt to understand the neurological context of European Celtic Art because human evolution has not significantly changed the neuro-physiological aspects of vision; the typically developed person in the 21st century sees, neurologically, in the same way as a typically developed Iron Age person saw 2500 years ago. These are the premises on which modern experimental studies on ancient art, mostly in a Palaeolithic context, operate and yield scientifically valuable results (Pettitt 2016; Hodgson and Pettitt 2018). Similarly, Neolithic studies in Britain have provided useful methodological foci on art and understanding it in terms of its (thought) processes (Robb 2015; Thomas 2016; Jones & Cochrane 2018).

On the other hand, research by Penny Spikins and her collaborators has shown that there is potential for neuro-atypical elements within prehistoric art (Spikins 2009; Spikins and Wright 2016). Within autistic spectrum conditions, occasional talent appears of extremely naturalistic drawing skills (Humphreys 1998; Spikins et al. 2018). While European Celtic Art is anything but naturalistic, the drawing behaviour pattern of these exceptionally artistic children with ASC creates layers of

crowded imagery in which one feature develops into another and in which different, unrelated elements can be fused into new ones. This rather blurs the initially naturalistic image for typically developed persons. A similar aspect has been demonstrated for Palaeolithic cave art as a two-dimensional art. The crowded imagery and merging features are, however, also prevalent in the three-dimensional European Celtic Art, especially in such objects as the Maskenfibeln, the fibulas blending human and animal faces and features or the scabbard designs of the so-called Sword-style. While studies have shown that children with ASC cannot depict invented creatures, such as monsters or fabulous beings as newly imagined compositions, they can replicate a fantastic creature if they have seen an example of it (Scott and Baron-Cohen 1996; Craig et al. 2001). Within the idiom of European Celtic Art, this means an artist affected by ASC could not “invent” the image of a sphinx; however, they could reproduce one seen on a Mediterranean import. This could combine with the trait of layering and superimposing different features and creatures, to explain the genesis of a Maskenfibel or the Weiskirchen belt hook as the workings of an ASC mind, not the creative reflections by an abstracting mind. The question is therefore whether the imagery represents something impossible – or whether the image is a densely layered combination of possibles.

Apart from the aspects of facial recognition discussed above, another recognition pattern often associated with ASC is the trait identified as local processing bias. Persons affected by such visual patterns focus on intricate details in crowded images instead of the overall composition (Jolliffe & Baron-Cohen 1997; Sucksmith et al. 2013; Tavassoli et al. 2014). This trait could explain the dense and interlinked imagery known as the two-dimensional Sword-style of the later La Tène period or the mirror decorations particularly known from Iron Age Britain. These images somehow overwhelm typically developed persons, who struggle to pick out the fabulous beasts from the curls and swirls surrounding them, while this should present less of a challenge to individuals diagnosed with ASC (Fig. 11).

While there is not one but many European Celtic Arts and manifold variations of expressions and experiences even within one object category such as coins or fibulas, there is seemingly an idiom in some of these designs that would correspond with traits described for ASC. Some of the enigmatic and unexplainable imagery in European Celtic Art becomes more realistic and more explainable from our modern position, if understood as a different way of seeing and linked to neurologically atypical ways of perception and cognition. We may still not understand the meaning of these designs – if there was a specific one – but this interpretation allows an answer for why certain designs were created in their complexity, and why these could be less enigmatic than a first glance may suggest.

Making European Celtic Art: a new pathway for future research

As with Palaeolithic art, it is important to research the possibilities for neuro-atypical artists and to raise awareness that such conditions existed since our earliest human past and are not a recent development. Of course, not all items of European Celtic Art were made by neuro-atypical persons; however, it is important to think about some unexplainable traits in Celtic Art as potentially explainable if we move beyond neuro-typical ways of seeing. Not all cases would necessarily need to be deferred by quoting a different cultural context for Iron Age Europe that we simply cannot understand anymore. The possibilities for new interpretations involving neuro-atypical visions and experiences explored here have opened a new pathway for further testing and investigation, using methods from Design Theory, Cognitive Science, and Philosophy of Mind. As predicted when

setting its scope, this paper raised many questions but the aim is to test its answers with future research.

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