



University
Campus
Oldham

SPARK

ISSUE 5 | APRIL 2022

ISSN 2516-4287

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The background of the page is black, featuring dynamic, abstract patterns. On the left side, there are several bright yellow streaks that curve upwards and outwards. On the right side, there are cyan-colored swirls and loops that appear to be part of a larger, flowing design. The overall effect is one of movement and energy.

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EDITORIAL

The background of the page is a solid black. It is decorated with several dynamic, abstract elements. On the left side, there are several bright yellow, curved, brush-like strokes that sweep upwards and outwards. On the right side, there are similar strokes in a vibrant cyan color, some of which are more tightly coiled into loops. These strokes create a sense of movement and energy, framing the central text.

Editorial

This is the 5th issue of Spark providing an insight into some of the research and scholarly activities undertaken at University Campus Oldham (UCO) and Oldham College (OC) over the last academic year. Within these pages you will find papers and summaries which were presented at our annual UCO Research Symposium alongside other research and creative outputs from a wide range of subject specialist areas. Following Oldham College's strategic plan (2019-24), which highlights the importance of Specialism and Reputation; High Performance; Digitalisation and Technology; and Community, you will find these elements running through this publication.

For our last symposium, June 30th 2021, we were fortunate to have Simone Eringfeld as our keynote speaker. Simone is an educationist, artist-researcher, writer and edu-coach who had recently graduated with a Master's degree at the University of Cambridge. More about Simone and her research can be found on her website:

<https://www.simoneeringfeld.com/>

This year's publication includes some fascinating research by Ben Whitworth about the travel journals and long walks of James Barry in the years 1819 and 1821; Paula Litherland presents her master's research into a new psychometric tool for measuring lifestyle factors for the fitness industry to improve mental health; Les Stott provides a review of artificial intelligence (AI) software in photography; Emma Morgan provides a brief summary of her research into Joint Enterprise and the role of juries; and there is a review of a performance – based research project which the author carried out with final year Performance students working on the theme of poverty.

Within the pages of Spark you will also find photographic images of creative outputs from final year Photography students and Games Art & Concept Design students of 2021.

We hope you enjoy learning more about the wide range of research activities undertaken at University Campus Oldham and Oldham College, please join us at our next annual UCO Research Symposium. If you would like to present your own research for publication or you would like to be involved in a research project, please get in touch.

Tray Wilson

Chair of the UCO Research and Scholarly Activity Group.

TWICE ROUND EUROPE



Twice round Europe: transcribing James Barry's travel journal

Dr. Ben Whitworth, UCO Library Assistant, presented this research at the UCO Research Symposium, 30 June 2021

My paper is about two long walks undertaken by James Barry in the years 1819 and 1821. When I call the walks “long”, I mean that Barry was walking for months at a time, covering more than 3000 miles over the course of the two trips.

Who was this prodigious pedestrian? James Barry was born in 1790, in the Orkney Islands off the North coast of Scotland. His father was the Church of Scotland minister at St Magnus Cathedral, in the town of Kirkwall. James pursued a military career, and reached the rank of Lieutenant in the Royal Marine Artillery. This was the time of the Napoleonic Wars, and Barry saw active service on “bomb vessels”, not only in European waters, but also in the United States of America and Brazil. The wars were brought to an end by Napoleon’s defeat at the Battle of Waterloo in 1815, and the most adventurous Britons were quick to take advantage of the re-opened travel routes. Walter Scott, for example, visited the battlefield of Waterloo just a few weeks after Wellington’s victory.

Why did Barry tour Europe at this time? The opening words of his journal give us a partial answer to that question. Barry wrote:

To one who is master of his own time, and may go where he may judge proper, there cannot perhaps be a more rational, or a more agreeable manner of passing his days than in travelling thro’ foreign countries, while a portion of health and youth remains. It is not transient like many of our enjoyments but lays in a store of information which cannot fail to be useful to us during life. It was this consideration added to the entreaties of my friend Mr W[illia]m B[urnet]t of E[dlin]k which induced me to undertake a pedestrian tour on the continent in 1819. (Barry, 1824, p. 1)

Acquiring useful information might not seem sufficient motivation for walking three thousand miles; though the prospect of an adventure with a friend could be more of an inducement. William Burnett was also a Scotsman (about ten years younger than Barry), who was on a sort of gap year before going out to India to start his own military career. On the second tour in 1821, Barry was the leader of a small group of acquaintances – a doctor friend, and three other British officers – so there was a social dimension to both these tours.

Barry had other motives too: like many of his generation, he was discovering the sublime beauty of mountain scenery, under the influence of Romantic poets and artists

like Scott, Byron, Wordsworth and Turner. Even more, I think, he wanted to explore the human landscape of Europe. He had been halfway round the world fighting for Europe – he had a natural curiosity to see what he had been fighting for. The traces of the late war were visible everywhere – cannon balls embedded in walls, new military roads, monuments to famous generals, and disabled soldiers begging at the roadside. Re-assertions of national independence, and new popular, or, conversely, *unpopular* governments, were also changing the political landscape. Barry was particularly drawn to Switzerland, a country that had recently recovered its ancient freedoms and democratic institutions, after a decade of subjection to Napoleonic tyranny. Everyone Barry met still had an opinion about Napoleon – it was love or hatred, never indifference; and Barry himself was frequently interrogated about the precarious state of British politics. In an Antwerp tavern, he heard, with horror and disbelief, reports of the Peterloo massacre in Manchester; and like so many travellers, he was to find that his experiences abroad lent him deeper insight into his own country.

Yet it was the unfamiliar that fascinated him most. He savoured local traditions in dress (and brought back a little French print of a water carrier: see figure 1), as well as regional diversities in music, manners and food – though he disliked frogs' legs, and drew the line at eating bulls' testicles. As his father and one of his brothers were ministers of the Church of Scotland, it is not surprising that he was interested in the religious life of the continent. For a British Protestant of the time, Barry was remarkably sympathetic towards the Catholic Church, fascinated by the monks and friars that he encountered. He also took an interest in Judaism, and although he found a synagogue service in Amsterdam baffling, he denounced the antisemitism that was apparent in some cities. Napoleon's conquest of most of the territory traversed by Barry, was driven not merely by the Corsican's gigantic personal ambitions, but by a project to integrate the nations of Europe (Woolf, 1991); and what Barry saw was a continent rapidly – and with mixed feelings – disintegrating back into its diverse constituent parts.

The pedestrians started out from Paris. The route was not planned out in detail, but Barry and Burnett headed South-East to Lyon, then through the Swiss Alps and into Italy, back through Switzerland by a different route, north into Germany, before touring the main cities of the Netherlands, visiting the battlefield at Waterloo, and finally returning to Paris. The second tour followed the route of the first quite closely, though it cut out the Dutch section of the itinerary.

In 1819, Barry and Burnett travelled about 3000km (roughly 1800 miles), mostly on foot – though they took public transport, by land or water, in some places. The longest day's walk took them 37 miles from Campo Dolcino in Italy to Cazis in Switzerland. In 1821, the route covered around 2500km (1500 miles).

The actual notebooks that Barry carried around Europe have not survived. Instead, what we have is his fair copy, written up in 1824, and filling 227 pages of Crown Folio size; that's somewhat larger than modern A4. The manuscript was passed down through Barry's family, and is now held in the Archives of the Breckness Estate at Skail House, Orkney. I transcribed the journal initially for conservation purposes – so that its contents can be read without unnecessary handling of the manuscript. However, having transcribed it, I believe it is well worth editing and publishing.

A few passages will give the reader just a flavour of Barry's writing.

Walking is hungry work, and Barry describes many meals, exposing the great culinary diversity and inequalities of Europe. Here he is being entertained to dinner by middle-class friends in Lyon:

Dinner ... consisted of the following dishes, and served up in courses as follow, viz 1st. Soup and boiled beef – a standing dish on every table in France from the Prince down to the Peasant, 2d. radishes and butter, 3d. pork chops and fried potatoes, 4th. chickens and green peas, 5th. roasted veal and cauliflower, 6th. roasted pigeons [sic] and sallad [sic], 7th. cheese, strawberries, cherries and sweet cakes, 8th. coffee and liqueurs. Each person had a tumbler to drink out of ... which served for both ordinary and fine wines. The conversation during dinner was chiefly upon Napoleon. (Barry, 1824, p. 18)

Contrast that with dinner in the guest house at La Grande Chartreuse, a remote and austere monastery in the Savoyard Alps. "Meagre" or "*maigre*" means "vegetarian":

About 6 o'clock we began to be uneasy, fearful that we were to have no dinner, for by the rules of the convent one can ask for nothing, but take what they get ... however, about seven o'clock, the cloth was laid on the table, and a few minutes afterwards the servants brought in soup meagre, fried potatoes, spinage [sic], eggs, butter, bread, cheese and wine. ... [next morning] At 5 o'clock a.m. we were called by the same brother ... who held in his right hand a bottle of brandy and in his left two glasses. He insisted upon our taking two drams each and a crust of bread, as we had sixteen miles to walk before we could get any refreshment. (Barry, 1824, p. 30)

The custom of abstaining from meat on Fridays was very strictly observed in the Catholic regions of Europe, to Barry's obvious regret:

Upon entering the Crown [Inn at Arth, Switzerland] ... we were told that being Friday we must eat meager diet ... I remonstrated with the landlady ... but to no effect. ... "Sir (replied she), ... nothing earthly shall induce me to break through the rules of my church in my old age." We could not help admiring the honest woman's sentiments, and sat down in peace to our omelet, tho' ... it would not have tasted the worse from the addition of a bit of bacon. (Barry, 1824, p. 124)

And, talking of bacon:

[In Lyon] ... we were accosted by a man who entreated us to see his spectacle [his show], and that it would only cost us two sous each. He then told us that he had come from Savoy and was on his way to Paris to exhibit two Pigs, the largest that had ever made their appearance in France, and added if we were not gratified, that he would return us our money. We accordingly followed the fellow and certainly did not grudge our money. One of them was black and white, got by a wild boar on a French pig, and weighed 900 lbs., ... and the other entirely white, weighing 1200 lbs, and so fat that it required three men to assist in rising. (Barry, 1824, pp. 19-20)



Figure 1. Coloured print of a "porteur d'eau" (water carrier).

These chance encounters are what gives Barry's narrative its charm and human interest. We meet so many memorable characters, such as the eccentric Signor Suggiani, who becomes their guide in Milan:

We had scarcely sat down to drink [our wine], when there came in a man dressed in nankeen jacket, and trousers, with a green silk foraging cap on his head, and asked us in broken English if we were Englishmen. ... He told us then in bad French, that he had commanded a transport up the Mediterranean for several years; that he had been frequently during that time under the orders of Lord Nelson, who had treated him well, & out of respect to the memory of that distinguished man, he made a point of being useful to every Englishman whom he encountered at Milan, & would be happy to show us the City. We did not however like to accept of his services, till we enquired something about him, and B[urne]tt went out for this purpose to put some questions to the landlord, who informed him that he was deranged but perfectly harmless, very kind, and possessed of considerable property both at Milan and at Strasbourg in France; that we must be careful not to offer him money, or he would leave us immediately ... B[urne]tt had scarcely returned and made his report when ... Signor Suggiani went out and in a few minutes returned with a small band, which he had picked up in the street, telling us that as we had treated him to wine, he would treat us to music. (Barry, 1824, pp. 97-98)

The following passage might be of interest to the ethno-musicographer, or the historian of inland water-borne transportation; but it also gives us an insight into the writer himself. We find him in the Tête Noire Inn at Rolle:

The view from the front windows of this Inn is delightful. We see here the broadest part of lake Lemane, and on the opposite side the mountains of Savoy covered with eternal snow, at the foot of which are a number of small villages. A great many boats were passing down the lake at the same time, some with parties of pleasure, and others carrying female peasants with the produce of the country to the markets of Geneva. The songs of those people had something wild and plaintive in them, the lake was smooth as glass, and the rowers, joining in chorus, mixed their bass voices with the shrill notes of the female singers. While beholding the grandeur of the opposite mountains, upon which the sun happened to be shining at the time and listening to the music of these apparently happy people, I thought of home of which I had taken leave for many years, and of those friends whom I should never again see in this world. All rushed on my mind at the same moment, and I became of a sudden deeply affected. There are times when I am as weak as an infant,

and I have often wished that my heart had not been made of such soft materials, for I think that the man is truly to be envied who can meet and part with country, friends, and acquaintances, and feel indifferent upon the occasion. It is however not a crime but a weakness, and those who can enter into my feelings, will pity but not condemn me. (Barry, 1824, p. 40)

Barry's journal could be useful to students of many different aspects of history. Thinking of some of the subjects we teach at UCO: historians of health and social care might be interested in how Barry was treated for a severe rheumatic attack on his second tour; historians of performance might be able to use his accounts of operas at Paris, Lyon, Frankfurt and La Scala in Milan, not to mention dozens of references to folk music and dance; criminologists will value Barry's accounts of crimes and punishments, from the theft of some luggage in Lauterbrun, to his sharing an awkward meal with three condemned prisoners and their guards, outside Lyon.

Finally, I would like to offer some reflections on the process of editing; some of the problems involved in that process; and how I have attempted to solve them.

There are several spellings that will strike the modern reader as odd. In the manuscript we find "cigar" spelled "segar"; an American is a "yankey"; and "salad" is written thus: "sallad" (Barry, 1824, pp. 17, 58; 101, 183; passim). My approach has been to preserve the spelling as it appears in the manuscript, as there are only a handful of cases where the original spelling would be an obstacle to comprehension. Again, I would leave the spelling of place names as Barry gives them, even though they are inconsistent, and even though his spellings often differ from those found on modern maps. For example, Bergzabern, in Germany, appears in the journal as "Berrichsanger" (Barry, 1824, pp. 156-57). I think the best approach will be to provide a full itinerary as an appendix, using twenty-first century spellings to help anyone who wants to trace the route on a modern map.

Another dilemma concerns Barry's use of existing travel literature. *Most* of the manuscript is Barry's own story, recorded in his own words. However, in many of the cities, we find descriptions of public buildings and institutions, presented as if they were Barry's own observations. But in many cases, they are not: they are lifted from published guide books. Not that Barry would have been troubled by accusations of plagiarism, and indeed the guide books of the day were often stitched together from previous accounts; this was before the development of copyright law. The borrowed passages can be easily identified – should they be cut out? That would reduce the length of the journal from 105,000 words to about 80,000 words, and lift the pace of the narrative. If modern readers *are* interested in the number of steps in the tower at

Strasbourg Cathedral, or the precise ethnic breakdown of the population of Frankfurt, most of Barry's sources are available online, through Google Books or archive.org.

Most of the individuals that Barry meets are private citizens of a relatively undocumented age, and perhaps this diary is the only surviving record of their existence. However, Barry makes frequent reference to places, people, and events, that he expects his readers to know about. Today's readers are not likely to have such knowledge at their fingertips, so it will be imperative to provide explanatory notes, anticipating questions such as: What *were* the five free cities of Germany? Who were Pergami, Kotzebue, and General Desaix – household names then, but not now? And where, when and by whom were fought the Battles of Bellinzona, Sempach, and Grandson?

But where should the notes go? Barry's page is already crowded (see figure 2). Each section is headed by a large title. At the top of the page there is a running head, telling you which country Barry is in, and the year. The page number is given at the outer, upper corner of each page. Within the left-hand margin, Barry writes the names of towns or buildings, as an aid to finding a specific location. And at the bottom of many pages, there are Barry's own footnotes. Of course, Barry himself made editorial decisions when writing up this fair copy. One of those decisions was to recount the 1819 tour as the main body of text; while the 1821 tour is described in a series of long footnotes.

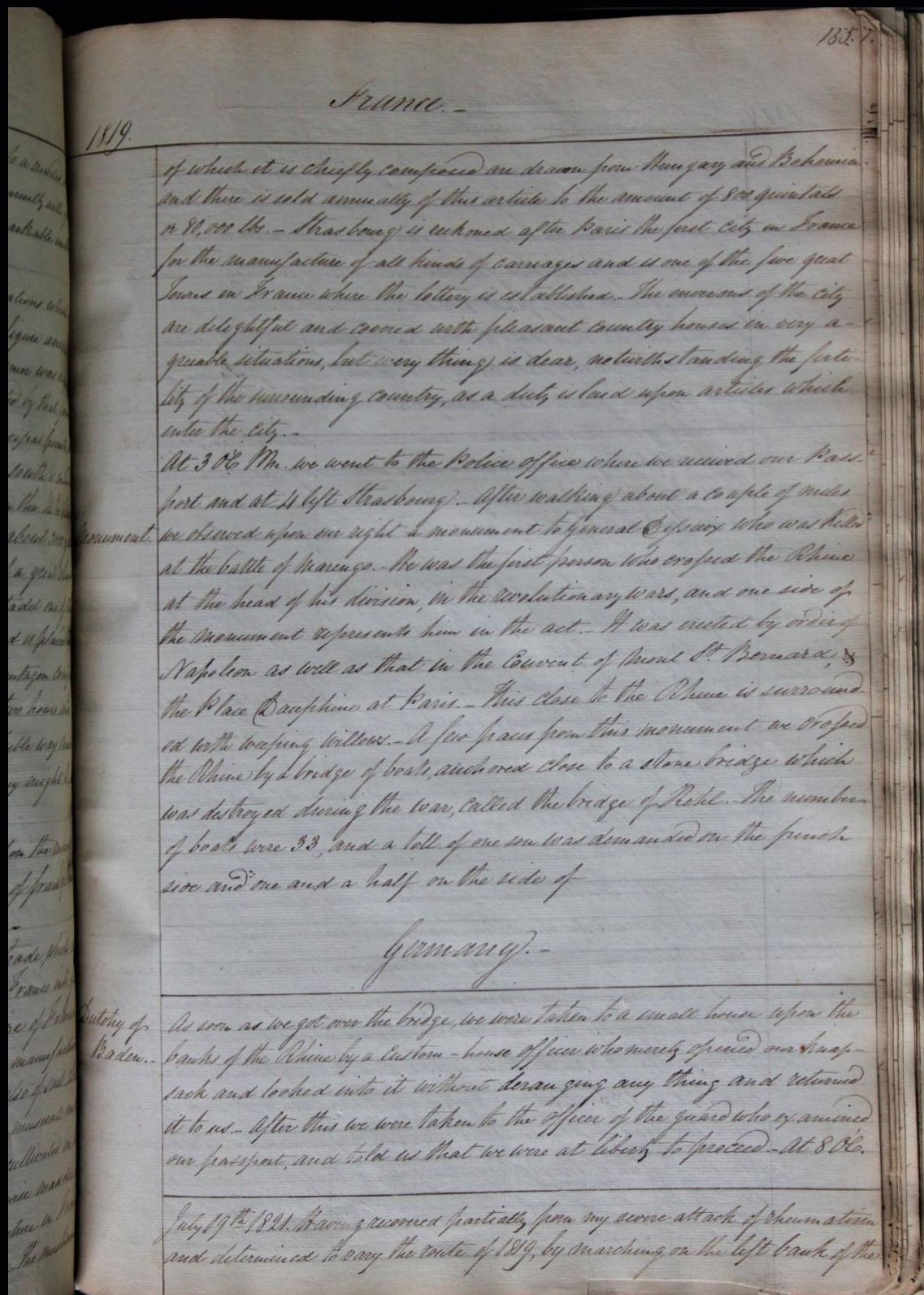


Figure 2. Page 155 of the manuscript, showing the apparatus of Barry's page layout.

In my initial transcription, I have tried to reproduce the layout of the manuscript; but it could be simplified. For example, the tags for specific places, rather than occupying the margin, could be indicated by bold type or small capitals, within the body of the text. And the account of the 1821 expedition could be extracted from footnotes, and presented as a continuous narrative following the 1819 tour. That's not what the author intended, but I think it would make life easier for the reader.

There is a further complication. At some point after 1839, an editor identified only by the initials CP annotated the manuscript throughout. Most of his interventions (and I think, from the tone of many of the comments, that it probably *was* a man) were stylistic changes, which I consider unnecessary. Of greater interest are a number of remarks written in the margin, in which CP comments on Barry's experiences and attitudes. These remarks provide a critical, sometimes sarcastic counterpoint to Barry's own voice. I'll give you an example: at Thun in Switzerland, Barry notes that "The charges at this inn were most exorbitant and we could not bate them down a copper; we were therefore obliged to pay what they asked" (Barry, 1824, p. 78). CP leaves *this* comment in the margin: "The worst of a tour of this kind is, the reader is constantly *bored* by accounts of the prices of eatables & beds at pot houses. They were Scotchmen – that is *one* thing – and poor ones – *that's another* – in extenuation" (Barry, 1824, p. 78). I am not sure how best to incorporate these comments in an edition of the journal, but I certainly would not want to leave them out!

I would like to conclude my paper by tying it into one of the themes that has emerged in this year's Research Symposium, which is the use of performance *in* – or *as* – research. How can Barry's journey be presented to a twenty-first-century audience? We could, to quote *Educating Rita*, "Do it on the radio" (Russell, 2007, p. 29). Barry's home county of Orkney has a local radio station, BBC Radio Orkney, with a pedigree for producing drama and documentary programmes on local themes. An hour of dramatized selections from the journal could be very effective. Similarly, Barry's gift for anecdotal narrative lends itself to live-action performance. The ideal venue would be Skail House in Orkney, where the manuscript has spent most of its two-centuries-long existence; where Barry's portrait hangs in the dining room; and where one of his distant relatives is the current laird. Orkney's annual festivals of Science, Storytelling and the Arts could be occasions for such a performance.

However, the most complete “performance” of Barry’s pedestrian tour would be a full re-enactment. In other words, to retrace Barry’s footsteps, to see the views he saw, to discover how much the places have changed (or not), and to meet the citizens of today’s Europe, whose commonalities and divisions might seem very different from those of 1819. If I do ever manage to retrace Barry’s pedestrian tours, I would hope to “[lay] in a store of information”, which I will be glad to share at a future UCO Research Symposium.

Illustrations

Figure 1. Coloured print of a “porteuse d’eau” (water carrier), presumably a souvenir of one of the tours, now pasted into the bound manuscript. Photograph by the author.

Figure 2. Page 155 of the manuscript, showing the apparatus of Barry’s page layout: running head, year, page number, section heading, marginal notes, and footnote. Photograph by the author.

Acknowledgments

I am indebted to Malcolm Macrae, the twelfth Laird of Breckness, for permission to publish extracts from Barry’s manuscript; to Cormac Grogan, the Manager of Skail House, for supplying photographs of some pages; to my wife Rachel Boak, for support and suggestions, especially ideas for *performing* Barry; and to all my colleagues who have encouraged this work, especially Angela Appleby, Kat Seddon, Tray Wilson, Tina Crowe, Baz Armstrong and Suzanne Atkins.

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NEW PSYCHOMETRIC TOOL FOR MEASURING LIFESTYLE FACTORS?

Can a new psychometric tool for measuring lifestyle factors be used by the fitness industry to improve mental health?

Litherland, OC Programme Tutor in Sport. This research forms the basis of a Master's Degree successfully obtained at Edge Hill University

Health and fitness professionals are an occupational group that strive to improve individuals' physical health by conducting personal consultations using positive health behavioural change theories to evaluate lifestyle habits (Michie et al., 2011; Prochaska et al., 1994). The consultation process conducted with a client is a professional discussion that reflects the credibility of the fitness professional's practice (Brick Foundation, 2020). Strategies developed from the professional discussion include prescribing physical activity (PA) using the World Health Organisation (WHO, 2020) recommended guidelines and agreeing to lifestyle targets developed to help individuals achieve their personal health goals (Prochaska et al., 1994; Rosenstock et al., 1998). The consultation is an integral part of improving personal health goals, as the interventions include exercise prescription and bespoke strategies to modify the wider determinants of health. Research suggests that modifying the wider determinants of health and prescribing PA may improve the trajectory of physical and mental health (MH) (Sederer, 2016), especially if early lifestyle strategies are applied as an integrated, preventative healthcare model (Joy et al., 2012; Walsh, 2011).

Studies suggest MH is an adaptational consequence of individual behaviours and attitudes, which affect health-related qualities of life (Das & Horton, 2012; Dimirchi, 2018; Hu et al., 2015). Research recognises MH is not just the absence of mental ill-health but further defines it as a state of psychological wellbeing (Das & Horton, 2012; Dimirchi, 2018; Hu et al., 2015). MH disorders represent an estimated 28% of the total burden of disease in the United Kingdom and are significant predictors of physical health conditions and future mortality (Bell et al., 2019). Therefore, measuring the wider determinants of health (Brug et al., 2017) will provide a more robust insight (Hernandez et al., 2017) into individual behaviours and attitudes, as they are important markers for developing preventative early intervention strategies (Stewart-Brown, 2015; Department of Health and Social Care, 2021; Klimentidis et al., 2018). The wider determinants of health include sleep (Afonso et al., 2017), stress (Liu et al., 2017), motivation (Sheehan et al., 2018), resilience (Davydov et al., 2010; Hu et al., 2015), physical activity (BPS, 2018; Klimenditis et al., 2018; Schnohr et al., 2018) and nutrition (D'Andreamatteo et al., 2016). Unhealthy lifestyle choices (Davey et al., 2011) or health harming behaviours (Sederer, 2016) provoke physical stress to the body, triggering alterations to internal homeostatic systems. Homeostasis is a term that describes the internal balance of hormones and

chemicals that are threatened by perceived internal physiological, psychological, or environmental stressors (Batman, 2021; Boschi, 2020; Liu et al., 2017). Homeostasis imbalances caused by perceived threat and long-term accumulation of stress hormones lead to inflammation (Liu et al., 2017), and contribute to 90% of non-communicable diseases (NCDs), such as stroke, heart disease, and high blood pressure, depression, anxiety, atherosclerosis, obesity, and non-alcoholic fatty liver disease. Furthermore, sixty-five percent of people exposed to significant stress responses are likely to develop dementia (Boschi, 2020). NCDs are the leading cause of death globally (Joy et al., 2012), and can be used to measure stress, anxiety, depression, and MH (Hamer & Stamatakis, 2010). Therefore, improving physical and MH by implementing lifestyle salutogenic strategies: focusing on the origins of health, rather than the cause, may contribute to improving public health concerns (Walsh, 2011),

In the United Kingdom (UK), the New Office for Health Promotion (Department of Health and Social Care, 2021) has recently asserted that 80% of public health concerns linked with NCDs are not associated with health care systems and recommends that physical and MH outcomes may improve by implementing strategies that manage or modify health-harming behaviours. The UK New Office for Health Promotion proposes strategic plans to tackle health concerns such as reducing obesity, increasing PA, and reducing MH by implementing early salutogenic intervention strategies that will be managed by health care services, including physicians and psychologists using the wider determinants of health as subjective markers to monitor progress. This study asserts that the efficiency and reliability of health care may improve if health care departments and associated professionals collaborated with health and fitness professionals rather than working in a silo (Joy et al., 2012).

The proposed collaborative concept may increase focus on the origins of health to develop a more preventative and nuanced salutogenic approach that could close the gap between non-clinical and clinical practices. Indeed, health and fitness professionals could widen their scope of practice and expertise by undertaking MH training to provide a sufficient understanding of the association exercise and lifestyle factors have on MH outcomes (Brick Foundation, 2020; BPS, 2018; Klimentidis et al., 2018). The notion of merging the fitness industry with clinical services to improve public health is not a revolutionary or modern concept; in fact, this collaboration was previously suggested by Chodzko-Zajko et al. (2009), Joy et al. (2012), and Walsh (2011), who proposed that the existing wealth of evidence of promoting exercise as a form of medicine to improve health encourages collaboration of organised medicine with the fitness industry. Furthermore, a report produced by The Brick Foundation (2020) asserts that 89% of published research finds significant positive relationships between PA and MH and concurs that PA is a feasible treatment for improving MH outcomes. Brick (2020) adds

that the improvements of MH outcomes derived from PA prescriptions are even more effective when supervised by fitness professionals in individual or group settings. According to Anand et al. (2019), diagnosed individuals allocated to clinical services that treat MH symptoms are potentially beyond early intervention, and that increases in health conditions cannot be solved by clinical professionals alone (Joy et al., 2012).

Seminal studies recommending early intervention strategies suggest that obstructed progress may be attributed to the lack of evidence and fragmented research (Foley et al., 2021) associated with non-clinical lifestyle interventions and the trajectory of MH (Guthold et al., 2018; Maheswaran et al., 2012; Soundy et al., 2014). The lack of evidence and inconsistencies may have contributed to the delays in a collaborative approach between health and fitness professionals and clinical services (Hamer & Stamatakis, 2010). However, existing research supports the notion that early intervention strategies may contribute to the relief of NHS pressures and thus reduce the economic-financial burden (Anand et al., 2019; Department of Health and Social Care, 2021; WHO, 2019). Firth et al. (2019) have the same opinion that lifestyle interventions would be more effective if evidence collected included the measurement of subjective indicators. Walsh (2011) contends that the cost of lifestyle interventions remains underestimated and for this reason, strategies continue to be underutilised despite evidence of effectiveness (Ekkekakis et al., 2018; Schuch et al., 2016; Walsh, 2011).

Managing Director of NHS Employers, Rebecca Smith (2021), recognises that the NHS faces challenges in health care and that reforming the structure of workload and breaking out of professional silos may contribute to the transformation of care and have a positive impact on wellbeing. Similarly, in previous research, Sederer (2016) suggested that controlling the costs of health inequalities would improve health longevity, achieved by integrating non-clinical strategies outside of medical and pharmaceutical treatments and strategies that form traditional medical practices. Considering this evidence this study identifies a significant gap; this lacuna is that while there are measures available to analyse objective physical health markers in the fitness industry, there is no suitable, valid, robust psychometric tool to measure or assess the subjective determinants of health that may impact MH. Therefore, this study proposes a solution by designing and validating a mental health questionnaire (MHQ) to introduce into the health and fitness industry so that health and fitness professionals may use it to evaluate subjective lifestyle factors that influence the trajectory of MH. The MHQ may be introduced and integrated into the consultation process to offer a more holistic, nuanced approach within a non-clinical environment. This study suggests that health and fitness professionals are in a pivotal position to use a new psychometric tool

for measuring lifestyle factors to improve mental health, and to gather more robust data following applied early preventative interventions (Liu et al., 2017; Sederer, 2016, Walsh, 2011)

Method

Ethical approval for the study was obtained before collecting data and aligned with the British Psychological Society (BPS) code of conduct and ethical guidelines.

Participants

Participants were accessed via a survey on a web based Qualtrics link to industry contacts in the UK. The inclusion criterion was that participants were required to be over 18 years of age. Additional responses were collected from the general population using a published online survey link on the social media platforms Facebook and LinkedIn. The first sample collected 261 responses from the general population (male n=49, females n= 212) with an average age of 40. The youngest participant was 18 years old, and the oldest participant was aged 80. The second set of data collected responses from 196 participants from the general population (male n= 57, females n= 141) with an average age of 46 years. The youngest participant was 20 years old, and the oldest participant was aged 74.

Procedure

The questions proposed for statistical analysis were presented in a framework which were inspired by the biopsychosocial model developed by Engel (1977), which includes biological, social, psychological, and behavioural health determinants (Lehman et al., 2017). The biopsychosocial model was used as a backdrop to contextualise and design appropriate original questions that reflected indicators of physical and MH outcomes. The framework consists of three categories (Table 1: behavioural, psychological, and social determinants of health) with subsections that included questions proposed for statistical analysis.

Behavioural determinants of health	Psychological determinants of health	Social determinants of health
Nutrition	Emotional	Environmental
Sleep	Self-esteem	Financial
Physical activity	Self-image	Occupation
	Motivation	Age
	Resilience	Social Isolation/ Social Integration
	Stress	Family / relationship

Table 1: Selected constructs for the study's validity and statistical reliability analysis.

The data collected included responses from participants who completed the initial questionnaire of 101 items (which took around ten minutes to complete). A second set of data was collected using the refined questionnaire of 73 items after statistical analysis (which took around five minutes to complete). The time each survey took to complete was identified in the outreach information to eliminate the chance of missing data due to unfinished surveys. Data from incomplete surveys were extracted before entering onto SPSS for statistical analysis.

Materials

The 101-item questionnaire and the subsequent 73-item questionnaire contained questions related to lifestyle factors which may influence the trajectory of MH. Participants answered questions in response to how they felt during the last month. Responses were in the form of a 1-5 Likert scale, as research suggests that multiple-choice formats provide more stable results and are more reliable than dichotomous responses responding to yes-no or true-false answers (Clark & Watson, 2019). The MHQ Likert scale ranged from 1 = 'None of the time', 2 = 'Rarely', 3 = 'Some of the time', 4 = 'Often', 5 = 'All of the time' (Appendix 7). An example item in the subscale for sleep is 'I struggle to stay asleep', 5 = 'All of the time'. IBM SPSS, version 25, was the chosen method for statistical analysis.

Design

The study was designed with a nomothetic approach for quantitative analysis to validate the psychometric questionnaire and a specific validation process was adhered to, ensuring that researchers can replicate the protocol in further studies (Perry et al., 2013). The validity of the questionnaire is crucial to ensure that it measures what it intended to measure and assesses how well the collected information aligns with the investigation (Taherdoost, 2016). The protocol consisted of content face validity, construct validity using factor analysis, and reliability tests. Examining latent factor correlations and internal consistency was analysed by Cronbach's alpha, with scores of approximately 0.7 and greater considered acceptable due to the diversity in the score (Samuels, 2017). Face validity is a subjective judgment of the constructs to evaluate whether the items in the questionnaire appear relevant and allow for the elimination of ambiguous questions during the process. The format of face validity is considered the weakest form of validity (Taherdoost, 2016); however, it is also a recommended process and supports eliminating questions at this stage, which was viewed as reasonable. Furthermore, the suitability of the questions was agreed upon to measure the psychological, social, and behavioural determinants of health.

The study set factor loading significance scores of > 0.5 and eigenvalues of 1, and a significance level of > 0.7 for Cronbach's alpha. Coefficient values above 0.7 indicate the validity of psychological constructs, and the validation process avoids invalid and uninterpretable data (Hinkin et al., 1997).

Results

Face validity

Face validity of the MHQ occurred during two meetings with industry professionals, with one meeting highlighting that a fitness club was already using an existing psychometric questionnaire with its customers. During meetings the proposed questions were discussed which led to the deletion of any questions that were considered ambiguous or unnecessary. Selected questions were uploaded onto Qualtrics with coded answers to correspond with the Likert scale and distributed for data collection.

Statistical analysis: Clean collected data

The first set of data extracted from Qualtrics was entered onto an Excel spreadsheet, then screened for univariate outliers. A final sample size of 216 was established for the first statistical analysis and loaded onto SPSS.

Principal Components Analysis

Principal components analysis (PCA) with varimax rotation was considered the most appropriate statistical analysis to use for this study to assess how much variance there is between the items with results expressed with eigenvalues (eigenvalues of 1, loading at least 0.5, items that load on posited constructs). The scree plot (Figure 1) presented the eigenvalues against the component numbers to illustrate a single factor or variance.

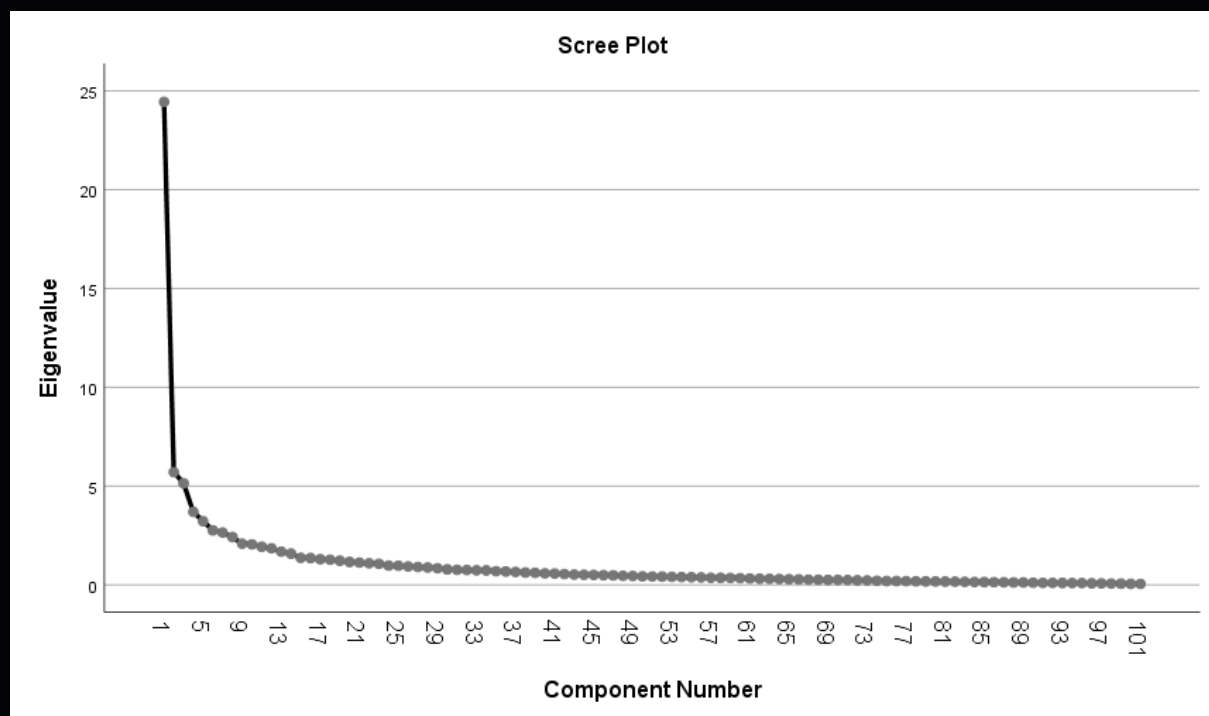


Figure 1: PCA extraction of components

Twenty-three items were extracted as principal components and will remain as the key questions and should not be removed from the questionnaire in further statistical analysis (appendix 1). Each question listed in the scree plot (Figure 1) correlated with components 1 to 23 in a correlation matrix and allowed the questions to be identified. A varimax rotation method with a significance value of 0.5 was used in all analyses which highlighted the associated questions. The Kaiser-Meyer-Olkin and Bartlett's Test (Table 2) showed the data was significant $p = 0.000$.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.883
Bartlett's Test of Sphericity	Approx. Chi-Square	18380.02
	df	5050
	sig.	0.000

Table 2: KMO and Bartlett's Test, df = degrees of freedom, sig. = significance.

The data was analysed on the correlation matrix to identify questions loaded above 0.5 as these could be considered for further analysis. Four items were deleted during this stage (Q34, Q48, Q66, Q94) due to values of less than 0.5 in the correlation matrix and therefore no associations were found with the 23 PCA items.

Cronbach's alpha: Internal consistency

Once the four items had been removed, the data was subjected to an internal consistency statistical analysis using Cronbach's alpha, which resulted in a score of $\alpha = 0.67$ (Table 3). The significance was set at 0.7. Therefore, this result was not deemed successful, and further analysis took place by referring to the Cronbach's alpha total statistics table which suggested scores above 0.67 could be deleted ($n = 24$). Removing 24 items produced a Cronbach's alpha score of $\alpha = 0.83$ which demonstrated excellent internal consistency (Table 4).

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.67	0.65	97

Table 3: Analysis 1 – Cronbach's alpha reliability statistical data

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.83	0.84	73

Table 4: Analysis 2 – Cronbach's alpha reliability statistical data

The internal consistency score was accepted ($\alpha = 0.83$), however, the 73-items remaining in the questionnaire were distributed for a second time to gather data for further analysis to check consistency. The data collected from the 73-item questionnaire yielded 196 participants from the general population (male $n = 57$, females $n = 141$) with an average age of 46 years. The data was subjected to a Cronbach's alpha analysis which produced a score of

$\alpha = 0.83$ (Table 5), demonstrating the questionnaire items are reliable. However, the intention is to introduce the MHQ into fitness industry, and 73-items may not be user friendly. Therefore, the data was further analysed against the Cronbach's alpha total-item scores as these suggest where items could be removed to improve the score, $n = 10$ (6, 27, 28, 30, 36, 83, 84, 86, 87, 88, $\alpha = 0.88$ Table 7). The 63-item MHQ shown in appendix 1 is the refined version

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.83	0.84	73

Table 5: Analysis 3 – 73-Item Cronbach's alpha reliability statistical data

	Mean	Minimum	Max	Range	Max Min	Variance	N of Items
Item Means	2.95	1.52	4.55	3.03	2.99	0.431	73

Table 6: Summary item statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.88	.88	63

Table 7: Analysis 4 – 63-Item Cronbach's alpha reliability statistical data

Discussion

This study aimed to design and validate the MHQ that could be introduced into the fitness industry for fitness professionals to use in individual health consultations. The study proposed a significant gap; this lacuna is that while there are measures available to analyse objective physical health markers in the fitness industry, there is no suitable, valid, robust psychometric tool to assess the subjective determinants of health that may impact MH. The study's findings suggest that the MHQ psychometric measure has acceptable construct and convergent validity for 63 lifestyle questions that assess the trajectory of MH outcomes. The results of the study revealed excellent criterion-related validity, but the internal factorial structure of the test could have undertaken a more comprehensive examination with a more significant participation sample. The lifestyle questions proposed were statistically assessed for validity and reliability to produce a psychometric measure. The study reviewed existing literature to understand how individual lifestyle factors influence the trajectory of MH. Selected lifestyle factors were contextualised into a framework suitable for behaviour modification recommendations within fitness professionals' scope of practice (Table 7).

Existing research was drawn upon in relation to lifestyle intervention strategies including suggestions for a collaborative healthcare model. A collaborative concept may focus on the origins of health to develop a more nuanced salutogenic consultation that could close the gap between non-clinical and clinical practices. Having a more robust understanding of an individual's lifestyle by measuring subjective health indicators will better inform early preventative intervention strategies that can improve MH outcomes (Sederer, 2016). In theory, the expression of strategies using the wider determinants of health is required to improve the nation's health (Brug et al., 2017) and a transformed health care model that refrains from working in a silo and incorporates the occupational group of fitness professionals.



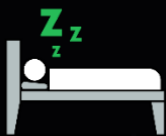
Physical Inactivity

Low Motivation (*P*)
Obesity (*B*)
Low Self-Esteem (*P*)
Low Self-Image (*P*)
Low Mood (*P*)
Occupation (long working hours: *S*)
Financial worry (*S*)
Disrupted sleeping patterns (*B*)



Nutrition

Eating too much (*B*)
Eating too little (*B*)
Obesity (*B*)
Self-Esteem (*P*)
Self-Image (*P*)



Sleep

Too much sleep (*B*)
Too little sleep (*B*)
Alcohol (*B*)
Increased stress levels (cortisol, adrenaline: *P*)
Occupation (long working hours / no job: *S*)
Financial worries (*S*)



Stress

Inflammation (*P*)
Sleep (*B*)
Eating (too much or too little: *B*)
Isolating (*S*)
Substance misuse (*B*)
Emotional symptoms (*P*: anxiety and depression)
Inadequate immune system (*P*)
Reduced resilience (*P*)

Key: Behavioural (B), Psychological (P), Social (S)

Low MHQ scores: book in with your fitness professional



High MHQ scores: ask for advice from your GP.



Table 7: Subjective risk factors, indicating signs and symptoms of MH.

Currently, fitness professionals in the UK use a Physical Activity Readiness Questionnaire (PARQ) at the outset of an individual health consultation, asking a series of questions about heart conditions, bone and joint issues, blood pressure, and any other factors that may affect participation in exercise. Fitness professionals use the PARQ to assess any underlying health conditions, and if any are identified, the client receives a referral to a GP for further advice on participating in PA (Warburton et al., 2011). Clients who have complex health conditions are then referred to an exercise referral specialist if the doctor feels exercise is a suitable solution to improve their health. Implementing the MHQ into a health consultation will provide a more nuanced holistic approach as the information provided will explore beyond the physical indicators of health by measuring lifestyle behaviours which are necessary for the integration of salutogenic interventions to reduce early signs of MH issues (Brick, 2020; Firth et al., 2019; Sotos-Prieto et al., 2021).

However, ultimately, the MHQ cannot replace the PARQ. Therefore, the study proposes that the MHQ should be used alongside the PARQ as an enhanced strategy to design effective personal health plans. Moreover, physicians would be advised to continue referring patients to specialist exercise referral professionals where complex health conditions identify on the PARQ. If a client is cleared from the PARQ a fitness professions would suggest ways to increase PA participation. However, research suggests that health improvements are more pronounced when integrated with simple changes to lifestyle, as these changes would have a favourable effect on inflammatory markers (Niedzwiedz, et al., 2020) which in turn reduce the risk of non-communicable disease, stress-related disease, and MH disorders (Liu, 2017).

This study suggests that the MHQ salutogenic holistic model offers an alternative interpretation of the theory: genetics load the gun, and the environment pulls the trigger as it develops a positive lens that changes the negative viewpoint. Interpretation

of this phrase usually relates to adverse physical and MH outcomes that emerge from environmental contributions of lifestyle behaviours. The MHQ model suggests that whilst genetics may load the gun, the environment that pulls the trigger can be adapted to positively impact health through preventative lifestyle interventions (illustration 1).

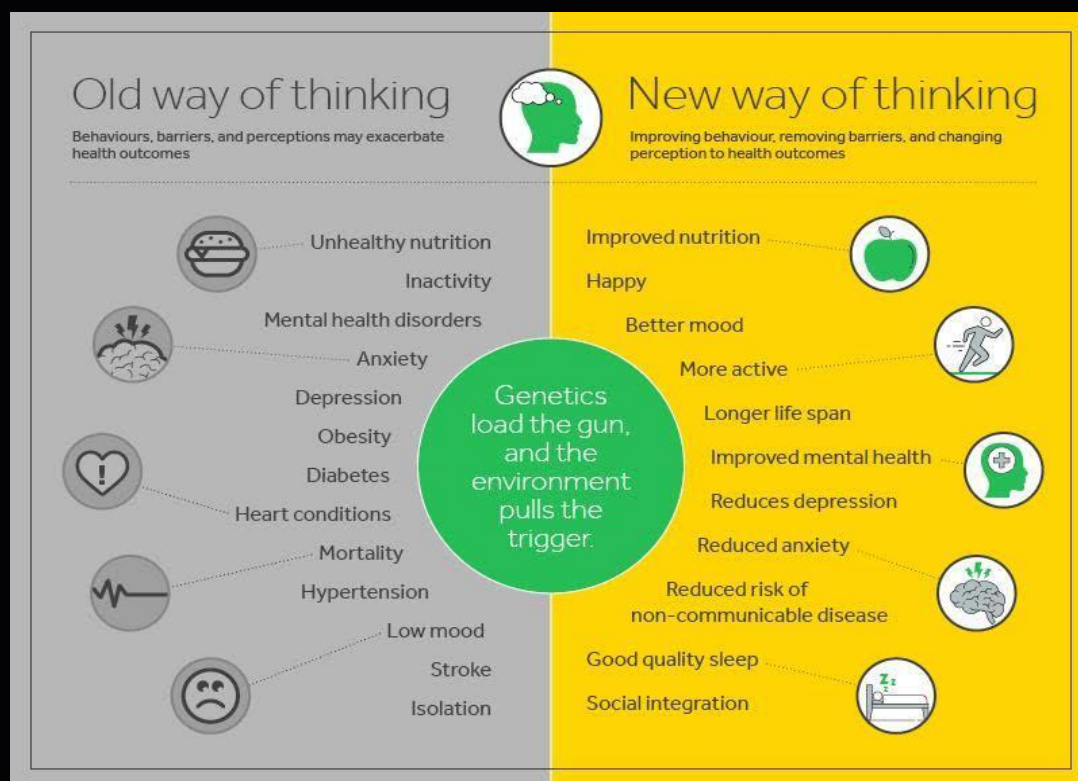


Illustration 1. Title: The MHQ salutogenic holistic model ©.

Conclusion

The purpose of this study was to validate a psychometric questionnaire and to test its reliability so that it can be introduced to the fitness industry. This study concludes that the MHQ psychometric measure has been statistically validated and has significant internal reliability using Cronbach's alpha ($\alpha = 0.88$). However, it is acknowledged that PCA results could be used combined with other evidence, for example, construct validity (Perry et al., 2013) and adding this process may have strengthened the data. Nevertheless, the statistical analysis of the items proposed for the questionnaire was deemed valid and reliable, and that the 63-item MHQ is deemed suitable for introducing into the fitness industry to transform individual health consultations. Further testing would be beneficial to reduce the items further to enhance the usability producing a minimal viable product for commercial use. The success of the MHQ will rely on gathering robust data from early preventative lifestyle interventions. Therefore, it is suggested that the MHQ should be further used in research as a longitudinal study to test the effectiveness of the interventions.

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Appendix 1. Principal Components

23 Extracted Principal Components

	Component	Mean	Std. Deviation	Communalities
Q1. I comfort eat.	1	2.91	.85	.75
Q5. I eat takeaways every week.	2	2.47	1.12	.65
Q9. I am happy with my current eating habits.	3	3.24	1.04	.74
Q13. I struggle staying asleep.	4	2.87	1.16	.82
Q17. Once I wake up in the night, I find it hard to get back to sleep.	5	2.82	.95	.73
Q21. I wake up feeling tired and sluggish.	6	3.63	.98	.70
Q25. I feel like I over-react to situations.	7	2.65	.82	.73
Q29. I feel that I need to do physical activity.	8	4.18	.79	.61
Q33. I want to make physical activity a new lifestyle habit.	9	4.04	1.21	.68
Q37. I have days where I just cannot motivate myself to do daily tasks	10	2.82	.96	.69
Q41. I frequently have low mood and cannot be bothered.	11	2.77	.95	.75
Q45. Setbacks affects me.	12	2.90	.80	.73
Q49. I feel that I experience positive feelings.	13	3.62	.79	.72
Q53. I am in control of my emotions.	14	3.51	.73	.74
Q57. I have people to confide in.	15	3.75	1.06	.63
Q61. I do physical activity, amongst other people but still feel that I am on my own.	16	2.03	1.00	.58
Q65. I am talkative	17	3.60	.90	.73
Q69. I am confident in most situations.	18	3.51	.82	.77

Q73. I feel comfortable looking at myself in the mirror.	19	2.92	1.09	.75
Q77. I feel confident with my body image.	20	2.79	1.09	.87
Q81. I worry about losing my job.	21	2.26	1.17	.66
Q85. I only do my job to get by, I do not really like it.	22	1.99	1.08	.72
Q89. I find it difficult to switch off from work	23	3.11	1.26	.76

Appendix 2: 63-Item Mental Health Questionnaire: MHQ©

Over the last two weeks how often have you been bothered by the following problems:

The rating scale is as follows:

1. None of the time
2. Rarely
3. Some of the time
4. Often
5. All of the time

Statements	1	2	3	4	5
Behaviour					
1. I comfort eat.	1	2	3	4	5
2. I feel that I am currently overeating.	1	2	3	4	5
3. I eat when I feel stressed	1	2	3	4	5
5. I eat takeaways every week.	1	2	3	4	5
7. I want to reduce the amount of junk food that I eat in a week.	1	2	3	4	5
8. I often feel guilty when I enjoy myself.	1	2	3	4	5

9. I am happy with my current eating habits.	1	2	3	4	5		
10. I am influenced by social media advertising diet products.	1	2	3	4	5		
11. I am tempted by quick fix claims.	1	2	3	4	5		
12. I struggle falling asleep.			1	2	3	4	5
13. I struggle staying asleep.			1	2	3	4	5
16. I wake up several times in the night.			1	2	3	4	5
17. Once I wake up in the night, I find it hard to get back to sleep.			1	2	3	4	5
18. I have less than 6 hours sleep.			1	2	3	4	5
20. I wake up feeling tired and sluggish.			1	2	3	4	5
21. I have a regular bedtime routine.			1	2	3	4	5
22. I feel nervous or anxious.			1	2	3	4	5
23. I feel that I can be easily annoyed or become irritable.			1	2	3	4	5
24. I feel like I get upset by trivial things.			1	2	3	4	5
25. I feel like I over-react to situations.			1	2	3	4	5
26. I feel like I have lost interest in the things I normally love to do.			1	2	3	4	5
28. I feel that I am consistent in my approach to physical activity.			1	2	3	4	5
29. I feel that I need to do physical activity.			1	2	3	4	5
31. I would like to be fitter than I am right now.			1	2	3	4	5
32. I feel physical activity improves my mental health.			1	2	3	4	5

33. I want to make physical activity a new lifestyle habit.	1	2	3	4	5
35. I enjoy physical activity.	1	2	3	4	5
37. I have days where I just cannot motivate myself to do what I need to do.	1	2	3	4	5
39. My concentration levels are low as I am easily distracted.	1	2	3	4	5
40. I have lost my mojo.	1	2	3	4	5
41. I frequently have low mood and cannot be bothered.	1	2	3	4	5
44. If an event is stressful it takes me a long time to recover from it.	1	2	3	4	5
45. Setbacks affect me.	1	2	3	4	5
47. I always think things are my fault.	1	2	3	4	5

Psychological

49. I feel that I experience positive feelings.	1	2	3	4	5
53. I am in control of my emotions.	1	2	3	4	5
54. I have negative thoughts.	1	2	3	4	5
55. I want to feel more positive.	1	2	3	4	5
57. I have friends to confide in.	1	2	3	4	5
58. I spend most of my time on my own.	1	2	3	4	5
59. I feel isolated.	1	2	3	4	5
60. I can go days without speaking to someone.	1	2	3	4	5
61. I do physical activity amongst other people but still feel that I am on my own.	1	2	3	4	5
64. I am a general worrier.	1	2	3	4	5
65. I am talkative.	1	2	3	4	5

69. I am confident in most situations.	1	2	3	4	5
71. I find it difficult to interact with other people.	1	2	3	4	5
73. I feel comfortable looking at myself in the mirror.	1	2	3	4	5
74. I look at myself many times during a single day.	1	2	3	4	5
75. I feel like other people look better than me.	1	2	3	4	5
77. I feel confident with my body image.	1	2	3	4	5

Social

80. I feel stressed over money matters.	1	2	3	4	5
81. I worry about losing my job.	1	2	3	4	5
82. I worry that I cannot support myself or my family.	1	2	3	4	5
85. I only do my job to get by, I do not really like it.	1	2	3	4	5
89. I find it difficult to switch off from work.	1	2	3	4	5
90. I feel guilty for taking time off work.	1	2	3	4	5
92. I feel under pressure to perform at work.	1	2	3	4	5
93. I feel old.	1	2	3	4	5
97. My age bothers me.	1	2	3	4	5
98. I find that I am very irritable with people, and they may notice.	1	2	3	4	5
99. People get under my skin.	1	2	3	4	5
100. I find that I am annoyed with other people's behaviour.	1	2	3	4	5
101. I feel like I am on a short fuse.	1	2	3	4	5

The background is a solid black field. It is decorated with several dynamic, abstract streaks. On the left side, there are thick, bright yellow streaks that curve upwards and outwards. On the right side, there are thinner, vibrant cyan streaks that swirl and curve in a more complex, circular pattern. These streaks create a sense of motion and energy, framing the central text.

GAMES ART & CONCEPT DESIGN

**END OF YEAR SHOW
2021**

"There is enchantment in the light"



From
CHRIS HARROP
3D Digital Arts Student

THE
L I G H T H O U S E

A virtual reproduction.

A24











ARTISTIC IDENTITY VERSUS THE USE OF ARTIFICIAL INTELLIGENCE



Ethics and Issues of Artistic Identity versus the Use of Artificial Intelligence Software in the Image

Les Stott, final year FdA Photography Student, presented this research at the UCO Research Symposium, June 30th 2021

This research is intended to investigate the ethical issues surrounding the growing use of artificial intelligence commonly built into photographic equipment and editing software and to balance the use of artificial intelligence against the photographer's own artistic identity and question whether or not a photographer can use artificial intelligence in their work whilst maintaining their authenticity.

Introduction

In this work I intend to look at the capabilities, ethics, and effects on artistic identity of the artificial intelligence-based photo editing packages currently available.

I have always been fascinated by technology I was there at the start of what we now call the 'Internet' working for some of the world's leading communications companies building, developing and introducing services that today we take for granted but back in the late eighties were revolutionary. It is hard to imagine what life would be like without email but before 1985 publicly available email did not exist in the United Kingdom. I joined British Telecom in 1986 just one year after email's introduction to lead a team tasked to accelerate the uptake of this incredible new technology. Since that day I have always tried to look for 'what's next' in whatever I do. I believe the biggest change in photo editing since we came out of the dark room is happening right now, artificial intelligence is changing the way that images are edited and its capabilities are improving at great speed.

A Brief History of Artificial Intelligence in Photography

The introduction of artificial intelligence into photo editing software really started with the development of Instagram. Back in 2010 a team of software engineers developed and launched the original version of Instagram. This whole process, from start to launching on the Apple OS platform, took just eight weeks. Within two years Instagram had been bought by Facebook for \$1bn U.S. The app was originally created as a photo sharing application but as it developed, the ability to edit and process the image improved and advanced. By using what Instagram calls filters the user was able to adjust, alter and improve their original photographs, behind those filters was the origins of artificial intelligence in photo editing software.

Instagram's simple yet powerful editing tools have changed the way that we all approach photo editing and although we may feel that editing by filter would never change the way a professional photographer would approach their work, the major players in photo editing software were starting to take notice of what was going on. Fast forward to April 2017, and Washington based software company Skylum announces its first ever photo editing software that operates using artificial intelligence, the package is called Photolemur and at its launch Skylum claimed it was capable of reducing a manual editing process that would take 1 hour 25 minutes to just 5 seconds using what was originally called Auto Enhancement. Skylum are also responsible for the internationally successful AI package Luminar 4 which I will discuss in greater detail in the next chapter.

Another American based software house was also developing AI based editing software but unlike Skylum's Photolemur which was developed to automatically apply adjustments to images, this software from Topaz Labs was originally developed to automate one of the more tedious tasks of photo editing, creating masks. Topaz Labs gave this package the self-descriptive name of Mask AI and it did exactly what it said on the tin, suddenly masking areas became an easy task and more importantly it was no longer a tedious, time consuming process requiring a steady hand. Mask AI was quickly followed by other Topaz releases Adjust AI which Topaz claims will adjust and improve colours, shadows, details and more with one click. Denoise AI which as the name suggests, has been developed to denoise and recover detail in any image no matter how low the light or how high the ISO; Sharpen AI for sharpening and shake reduction; Gigapixel AI which Topaz claims will allow you to enlarge your image up to 600% with no loss of detail and finally JPEG to Raw which removes file compression and converts to RAW for better editing.

One name that has been missing from the world of AI editing so far is that of the industry leader in traditional editing software, Photoshop. As you would expect the Adobe Corporation were not going to lie back and watch the new kids on the block come in taking market share. Slowly Adobe introduced AI functionality into their software, starting in 2019, but it is the most recent releases of Photoshop and Photoshop Elements that have really encompassed the power of machine learning AI. The latest release of Photoshop which is V22 has a sky replacement tool, improved AI edge selection and a powerful suite of image editing tools that Adobe calls "neural filters". So now we have professional photo editing software using something introduced originally by Instagram, editing by filter.

Current Capabilities of AI Editing Software

Photolemur has a very simple user interface and drag and drop capabilities taking away the accepted complexities of traditional photo editing software. The owners of Photolemur, Skylum, who incidentally also own Luminar (another piece of AI editing software which I will discuss later), believe that AI will be able to replace the user and make all the smart editing decisions for us, ultimately making manual photo editing redundant.

Photolemur has been around for a few years and I bought my first copy in early 2017, at this time the software was aimed mainly at the landscape photographer and the features of the software were definitely weighted towards this genre. The original software very efficiently applied 11 types of correction these were, colour recovery, exposure compensation, face retouching, foliage enhancement, JPG fix, natural light correction, noise reduction, raw file processing, sky enhancement, smart de-haze and tint perfection. Of course many if not all of these features were available in other photo editing software, what made Photolemur different was that it made all the decisions for you and automatically presented you with a finished image which in most cases was as good if not better than manual software could produce.

To show the capabilities of Photolemur I carried out a simple test. I selected a landscape image from my personal library, an image that at the time of production I had edited in Photoshop and was totally satisfied with. I ran it through Photolemur to see if the software would offer any further enhancement. From start to finish the process took less than 10 seconds and as you will see from the following before and after images my landscape was, in my opinion, improved.

Before



Although I was satisfied with my original edit of this image the differences made by PhotoLemur are fairly obvious, the sky is bluer, the clouds are whiter and more contrasted, the grass in the foreground is brighter, and the colour more vibrant and saturated. Incidentally, you will notice the hillside in the background which is perfectly lit in the original remains unchanged in this edit.

What Skylum had done was to basically bring the simplicity and convenience of mobile phone photo editing to the personal computer. Much was written at the time in the photography magazines criticising the capabilities of the software and questioning the need to replace what was near perfect photo editing software.

Skylum have continued to develop and expand their AI capabilities and offerings. In 2019, they launched their very successful package Luminar 4. The key marketing message used at the launch of Luminar 4 was “replace skies automatically”. In 2021 Skylum introduced Luminar AI which they claim is the first image editor fully powered by AI. Luminar AI approaches photo editing in a brand-new way. It analyses every image opened, it makes recommendations on how each image can be improved and it produces stunning results in just a couple of clicks. To maintain a balance between AI and expertise, Luminar allows the user to retain complete control over the AI powered tools.

As the competition for market dominance heats up, the latest release from Adobe, Photoshop V22 2021 now includes a wide range of AI powered editing tools, the following is an example of how they have simplified the process of sky replacement.



I purposely selected this image of a Hawthorn Tree to demonstrate Photoshop's latest Sky Replacement function. Anyone that has ever tried to replace the sky behind the branches of a tree will understand what a difficult process this used to be now it can be as simple as three clicks. No longer do we need to mask each individual gap between the branches. Images that used to take an age to process can now be processed in seconds using the AI functionality built into Photoshop.

In this example I have used a sky from Photoshop's own library, but for a more realistic final image it is a simple process to integrate one's own sky shot. This then gives you more control over the direction of light, direction of shadows, type of sky etc.

These four screenshots show the whole process from start to finish.

Image 1) Open the image & select Sky Replacement

Image 2) Choose the replacement sky

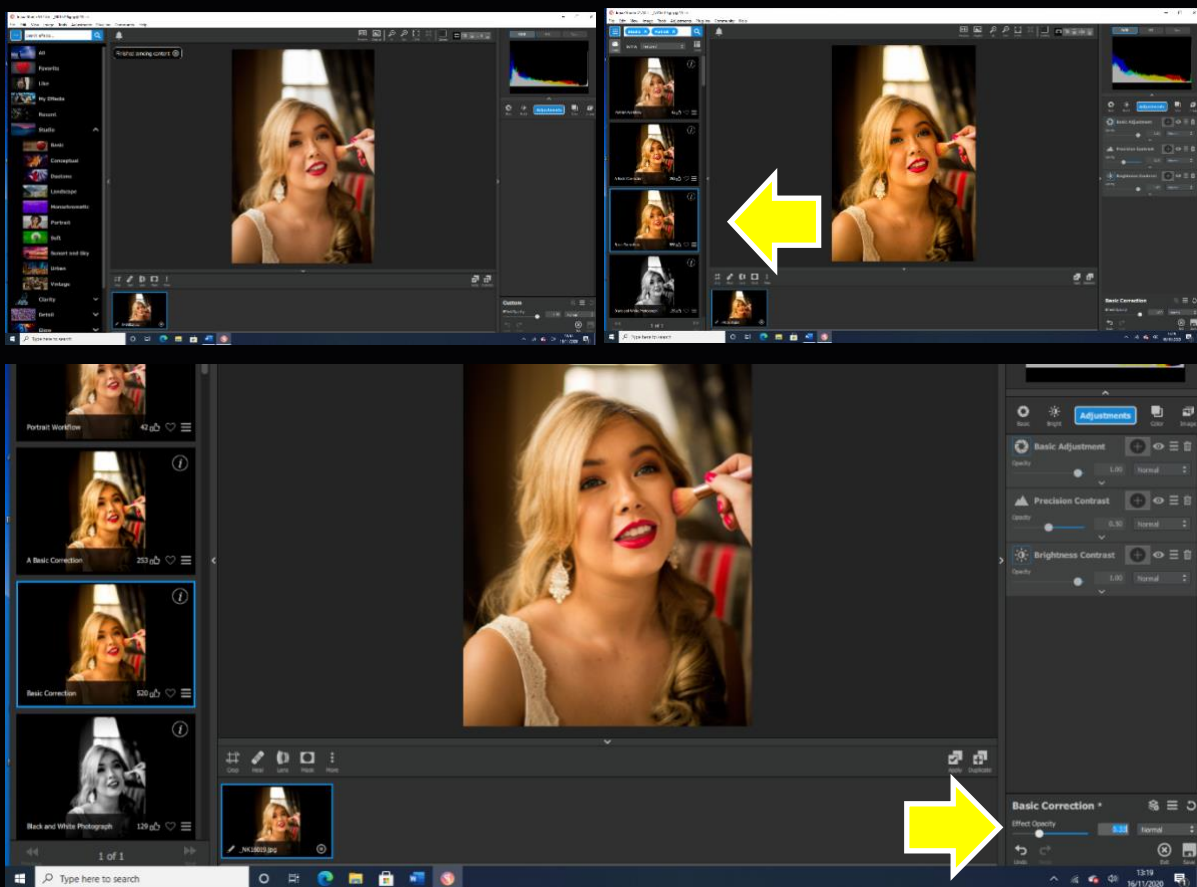
Image 3) Click OK

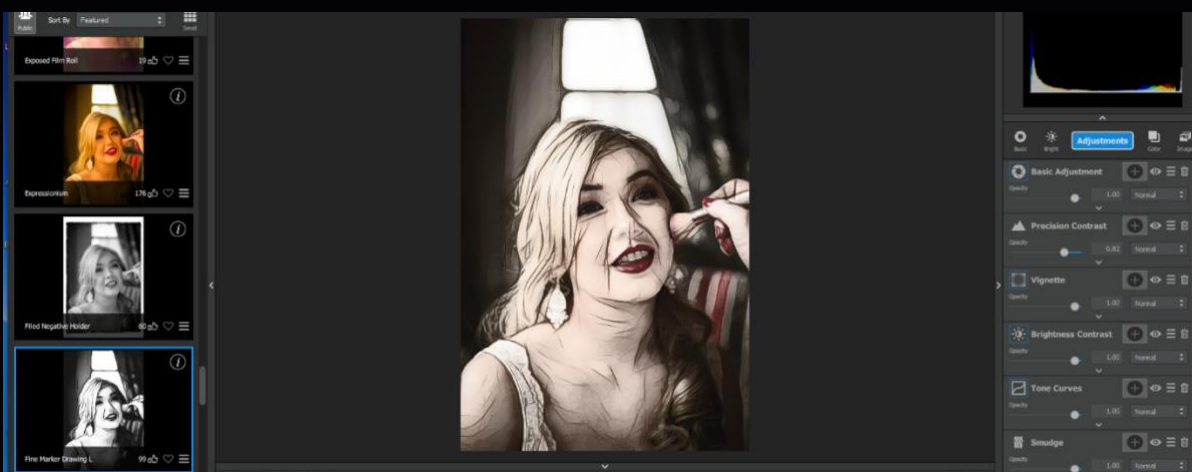
Image 4) Finished image

Literally three clicks from start to finish and a job that could have taken an hour to complete is done. As with all the available AI software packages manual correction is built in and the changes made by the software can be tweaked and adjusted by the operator.

The final package that I researched and tested for this piece is Topaz Studio from Topaz Labs. Topaz Studio really is attempting to make photo editing a one click operation. As I mentioned earlier, with their approach to automated masking, adjustment, and sharpening, Topaz have built an AI based editing package to rival all of its competitors but Topaz have gone a stage further by focusing on the world of digital creation. Topaz Studio is aimed at the photographer who is involved with and influenced by creative projects. Topaz offers a more artistic approach to post processing, so not only do you get all the usual post processing tools found in all editing software, but you also get an extensive toolbox of effects which can be used to add artistic results to an image.

To test the software, I'm going to edit a portrait image I took a while ago of a bride having her makeup applied prior to the wedding service. I want to test the Portrait Enhancement Filters of the software and then using the same image I will try out the Artistic Filters.





Conclusion

Irrespective of anyone's point of view AI is here to stay, there is no way that this is going to go away, it will simply just get better at doing what it does, after all the basic rudiment of AI is that it is self-learning. Whether or not it is for everyone is a big question. There will always be the artistic photographer who believes that the only way to success is to put in the hard work and gain the experience, and they may well be right, particularly at the present time when AI development is still in its infancy. There will always be the purists that wholeheartedly despise the thought that a machine can do what a human can do and improve on it. Then there will be the photo editor that enjoys the emotional experience of obtaining the results that he or she set out to create and not until they can get some form of emotional experience from the results given to them by AI will they accept it as an alternative.

Looking at AI from the client's perspective, the photographer needs to be asking their client questions, does the client want an accurate record of the event or do they want a stylised version? Would the bride be comfortable showing her wedding photographs with beautiful blue skies when all of her guests remember a grey wet day? Is it the photographer's job to be influencing memories? One thing is for sure, it is going to be much easier to do so in the future, but is it right?

In my opinion AI does have its place in photo editing. It is results-orientated software as



opposed to the tool-oriented method of traditional photo editing software. AI approaches the editing process by providing the end result as the starting point for manual intervention. In other words, AI software is capable of giving you what may be the end result in seconds, however at this point you may decide to make manual changes to the

AI software's interpretation, this could be by using the manual functions, sliders and filters built into the AI software, or by opening the resulting image in another editing package.

I also believe that even at this early stage of AI editing there are already potentially huge threats to AI editing software on the horizon. Those threats are built into the hardware itself, already AI capabilities are being built into cameras, many if not all the latest

mobile phones have software sitting behind the lens of the camera that is making decisions for us. AI scene recognition can intelligently detect many kinds of scenes, it then automatically adjusts the brightness, contrast, saturation etc. to help create the perfect image. The algorithms that are the basics of AI are constantly improving to ensure that the user not only captures the image but creates an image.

A new camera which is currently available for pre-order is being designed and built by a British team of engineers and data scientists, the Alice Camera is described by its inventors, Photogram, as ‘an AI accelerated computational camera being built from the ground up for content creators. An interchangeable lens camera with a dedicated AI chip that elevates machine learning and pushes the boundaries of what a camera can do, your next camera is a computer” (Photogram, 2020). Amongst other functions, Photogram claims that the AI chip in the Alice Camera will control auto focus, exposure and colour science.

It is obviously the goal of the major corporations behind the technology to continually improve and invent new and ‘must have’ products. If they do not give the customer reasons to spend money they do not continue to exist, but it also in our human nature to constantly seek out better solutions to today’s complexities. I therefore must conclude that there is no ethical reason to resist the changes that are happening in photo editing, in fact history tells us that success seems to follow those who embrace new technologies. Some of the richest families in this country are those that manufactured the textile machines or the mill owners who adopted the automated manufacturing processes at the turn of 20th century, look at the success of the technology companies that embraced the Internet, Google. Amazon, Facebook and Twitter.

We don’t yet know if there will ever be a camera that is so intelligent that it takes perfectly exposed and focused images 100% of the time, but as sure as night follows day the technology boffins are working on it. If they do manage it, everyone in the world will be able to capture perfect images, but will that make everyone a photographer? Of course not.

No one can call themselves a photographer unless they have a particular set of skills that cannot be computerised or mimicked by artificial intelligence

An eye for detail

An eye for photography is an instinct common to all good photographers. The photographer's eye allows the artist to compose great images from seemingly ordinary, mundane situations.

Creativity and Imagination

Photography has long been accepted as one of the creative arts, it therefore requires a creative and imaginative individual to plan and compose the image. Good images will convey the intended narrative and tell the story first conceived in the photographer's imagination.

Communication Skills

A photographer will have to connect and communicate with others on a daily basis this could be the client, models, makeup artists or assistant photographers. Networking skills are more important than ever, and success can depend on the photographer's ability to mix and network with potential clients both physically and virtually.

Ability to Manage Light

Without doubt the most important mechanical skill of any photographer is the ability to understand and control light. Successful control and manipulation of light is the foundation on which great images are built.

Passion

In all walks of life, the energy gained from being passionate about one's subject is a huge motivator. Nowhere is this more important than in the creative arts, passion is a key emotional element for creativity.

Irrespective of how it was edited, a successful image will always start with a properly composed, correctly lit, eye catching image that grasps the viewer's attention. AI editing should not be seen as a threat to the photographer's artistic identity, but as an alternative method of adding interest and finish to the image.

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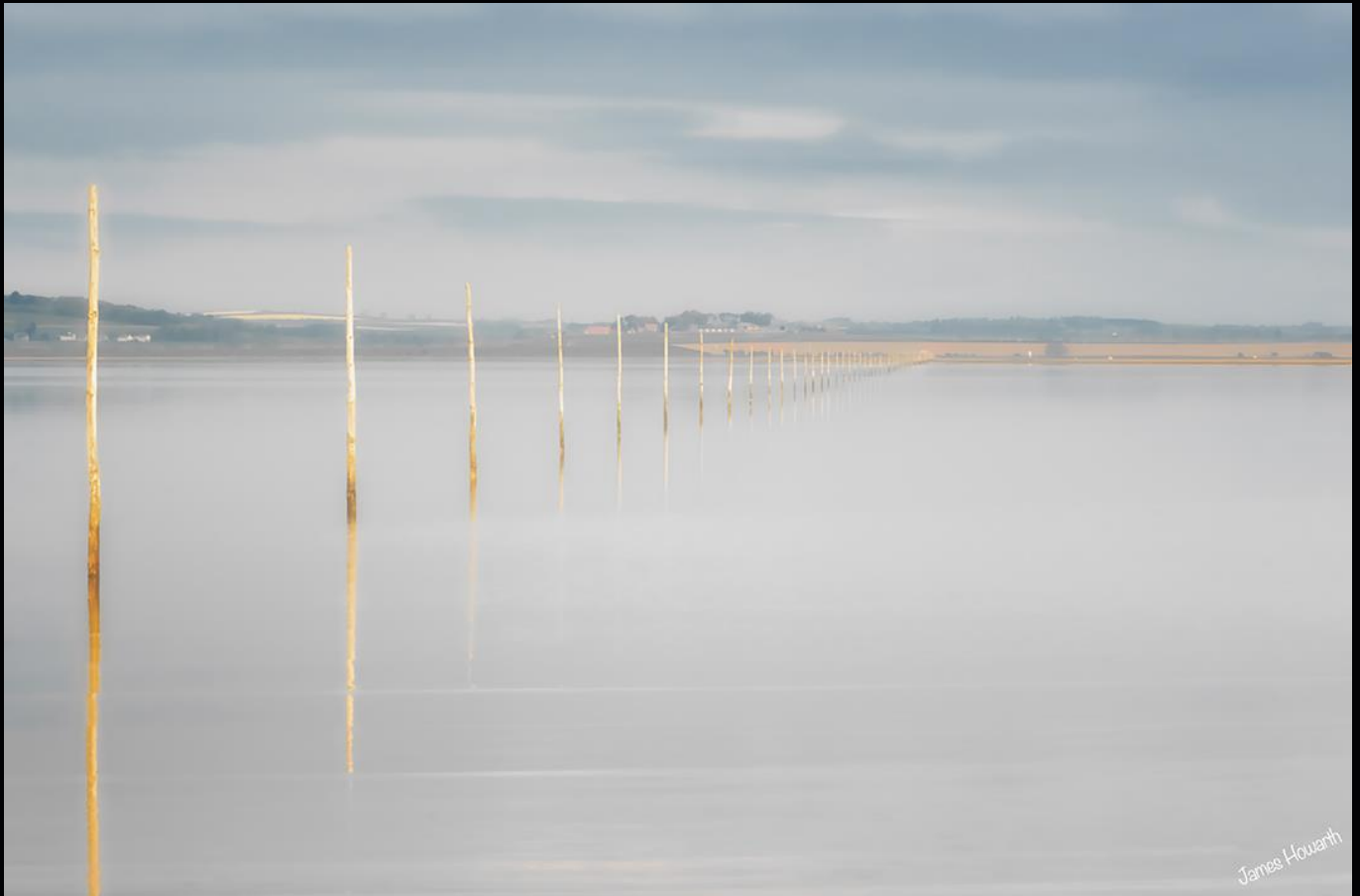
PHOTOGRAPHY

**END OF YEAR SHOW
2021**

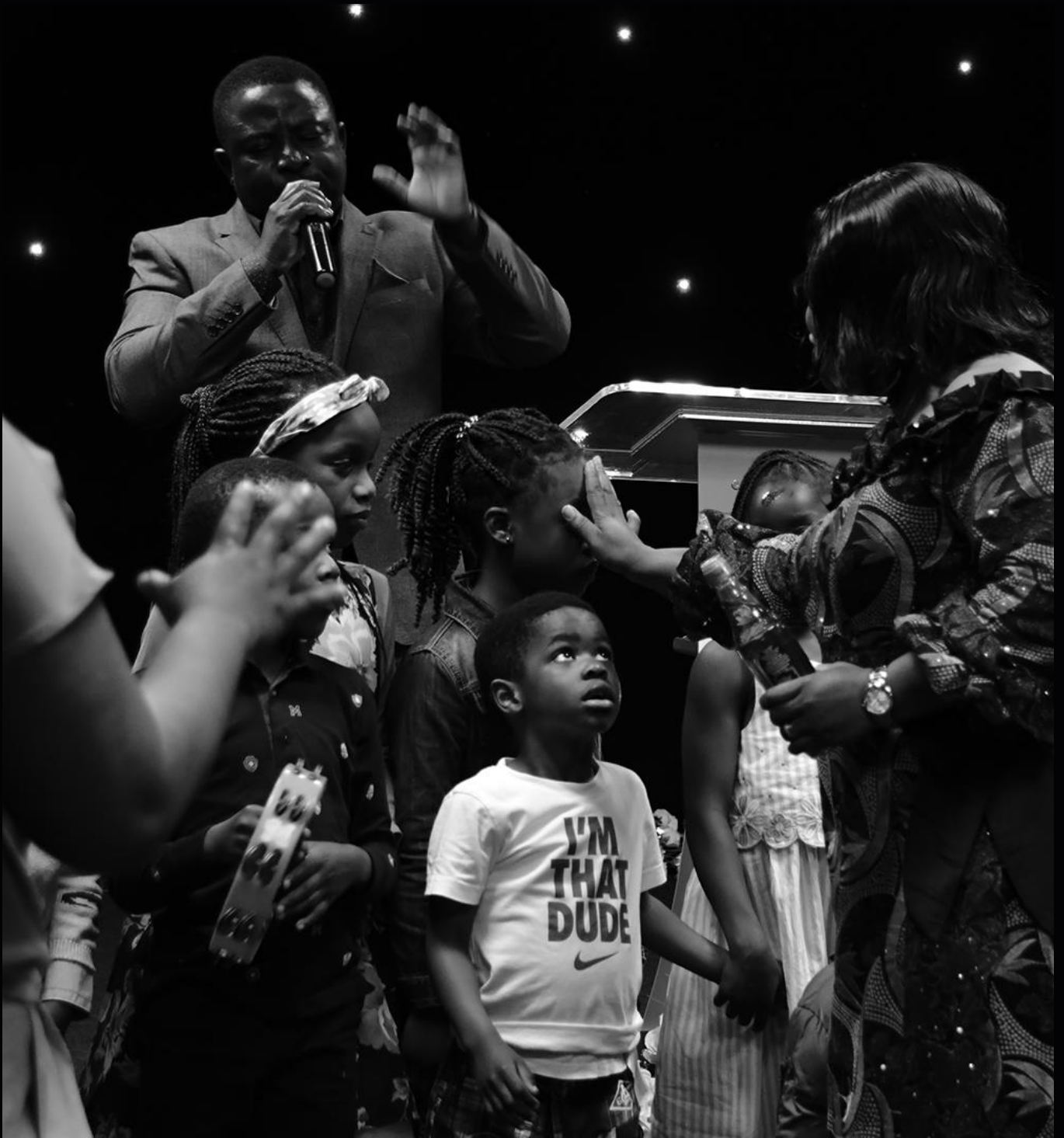




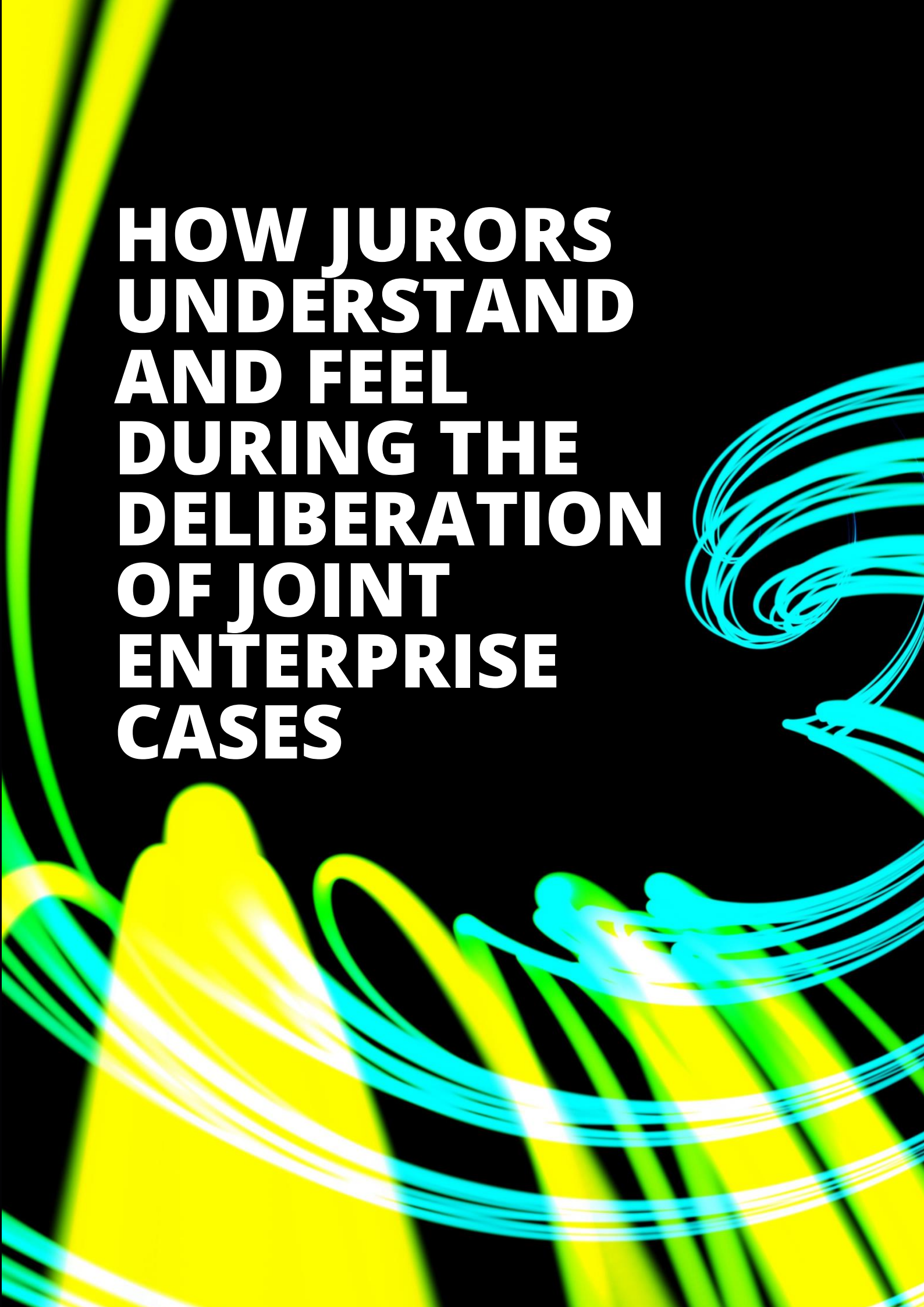
James Howarth











HOW JURORS UNDERSTAND AND FEEL DURING THE DELIBERATION OF JOINT ENTERPRISE CASES

Research into how jurors understand and feel during the deliberation of Joint Enterprise cases

Emma Morgan, final year Criminology student, presented the findings of her dissertation at the UCO Research Symposium, 30th June 2021. The following is a summary of the work that she presented.

This research explored the role of juries in joint enterprise convictions by utilising a mock jury focus group. The results of the focus group were transcribed, and emerging themes were identified using thematic analysis. Themes of confusion over joint enterprise, misunderstanding of the foresight principle and emotions were identified, as well as themes of dominant participant and youth crime. The study concludes that there is a lack of comprehension of judges' directions in joint enterprise cases, as well as the identification of strong emotions and heuristic biases in the deliberation process, which highlights the conflict between the legal guidance given and the common-sense approach taken by juries. The study further concludes that additional research into jury deliberations in joint enterprise cases is necessary to prevent unjust convictions.

The research rationale of the study is based on questions arising over the confusing nature of the application of joint enterprise, the lack of consistency in judges' directions to juries, and the way in which joint enterprise prosecutions are explained and understood in court (Jacobson et al, 2016). There has been growing controversy over the legal doctrine of joint enterprise in recent years, with criticism from academics, lawyers, practitioners, grassroots campaigners, and those who have been convicted in joint enterprise cases (Hulley et al, 2019). The doctrine of joint enterprise allows for all individuals involved in an incident to be held equally accountable for the same criminal offence, no matter how peripheral their involvement (Hulley et al, 2019). While no data has been methodically collected on the scale to which joint enterprise is applied, The Bureau of Investigative Journalism (2014) calculated from the figures released by the Crown Prosecution Service in 2019, that between 2006 and 2014 approximately 2000 people were prosecuted for murder using the doctrine of joint enterprise.

Criticisms have arisen over potential for the doctrine to provide unjust convictions for individuals where their level of involvement is very minor, or where the evidential threshold is very low (Hulley et al, 2019). There is also criticism of the reliance on supposed gang affiliation in prosecuting joint enterprise cases and its disproportionate use against individuals from BAME communities (Squires, 2016). The value of the study is that there is a lack of critical investigation into jurors' actual comprehension of judicial directions (Thomas, 2010). Moreover, there has been no study into how jurors feel when deliberating in joint enterprise cases, therefore the aims of this study may add value to future research.

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The background is a solid black field. It is decorated with several dynamic, glowing streaks. On the left side, there are thick, bright yellow streaks that curve upwards and outwards. On the right side, there are thinner, vibrant cyan streaks that swirl and curve in a more complex, circular pattern. The overall effect is one of high energy and movement.

DESPERATE MEASURES: A PROJECT WITH FINAL YEAR PERFORMANCE STUDENTS

Desperate Measures: a research-based performance project with final year performance students.

University Campus Oldham's five-year Teaching, Learning and Assessment Strategy (2020-2025) includes an Applied Learning Model which has been implemented across all course areas. The intention of the Applied Learning Model is to develop important employability skills in our students as well as providing opportunities for real world learning. Course teams and their students are encouraged to engage in professional projects or professional placements where they can apply theory within the professional workplace, or to a professional brief. Where a placement is not possible, course teams can opt to work on a research project. The research project aims to 'investigate a real issue within the locality with the objective of increased social responsibility.' (University Campus Oldham, 2020, p. 4). Although the performance students are often involved with professional projects resulting in public performances, we decided to tackle a research project which would provide further opportunities for level 6 students to widen their research and employability skills. The UCO theme for research projects (2020-21) was 'poverty'. Our research-based performance project would result in a devised digital performance which would be shared on a social media platform. The performance was first previewed on YouTube on the 17th May at 7pm, and is still available for public viewing.

<https://www.youtube.com/watch?v=wWOJhaBp5IE>

A Collaborative Research Process

Working together to decide on the scope of the project, the students and I started by gathering our own research around the general theme of poverty over the Summer months before the start of the module in September 2020. We used a thematic approach to explore existing creative texts such as song lyrics, play texts, other theatre productions and films. We searched for factual information through reports, books and articles which would help us to define and further understand our theme. We looked for charities and ways to contact those who were better informed about the experiences of those in poverty. This research provided us with a range of perspectives, and further understanding of poverty. It was helpful to consider how other artists had responded or dealt with the theme and we started to consider the purpose of our performance and what we wanted to create or communicate. We recognised the importance of narrowing our research and decided to focus on the local area of Oldham and on the lived

experiences of poverty. Our research focussed on first-person accounts and biographies of those living in poverty. We carried out some interviews with friends and family who had experienced poverty and we created a simple questionnaire which enabled quick anonymous responses via social media. We supported these personal accounts with newspaper articles, statistical information, and further factual research into the causes and effects of poverty.

Augusto Boal

An important influence on our approach and understanding of how to tackle the theme of poverty was the theatre practitioner Augusto Boal. Augusto Boal (1934-2009) was a Brazilian theatre director and political activist who developed a series of theatrical strategies to effect change in the lives of individuals on a social, personal and political level. His work has become known as the Theatre of the Oppressed (Boal, 1993). Much of Boal's work involves participation where the audience plays an active role in making decisions about the direction of the performance. We knew that audience participation was going to be very difficult for us since we were in a national lockdown. Instead we took inspiration from Boal's approach in terms of his agenda to inform and motivate the audience to take action or make a change.

The Creative Output

Drawing on our research and our practical explorations, we created a devised, episodic performance exploring the lived experiences of poverty. The performance contained facts about poverty including newspaper accounts and statistics and short scenes exploring real and fictional stories and characters. We presented these experiences through naturalistic performances as well as more stylised forms including a *dance of frustration* and a *song of hope*.

The Oldham Food Bank

One of the students had experienced Oldham Food Bank first hand and she openly shared her experiences with the group. She also contacted the organisers to find out more about how the Trestle Trust operates. If we had been able to, we would have visited the food bank as a group and volunteered our time in exchange for the information and insight given to us. One of the scenes in the final performance was developed by the group with the intention to help the audience understand what happens at a food bank. This was created to inform those who might need to access a food bank and to encourage others to donate to a food bank. An initial idea was to ask the audience to donate food instead of paying for a ticket to see the live performance – the food would be used to create the setting for the foodbank scene, and would later be

donated to the foodbank. When the group realised they could not have a public audience, they bought and collected their own food for the filmed scene and later donated this to the food bank.

The Final Performance

The scenes were filmed in the Performance Studio under strict regulations due to COVID. The scenes were then edited together to create a digital performance which was released for a public preview. The performance was well received and the students were pleased with the work that they had created. The process and the final performance formed the assessment for the students' Performance Making Project module. All of the students were successful in completing the assessment and achieving good grades for their work. The External Examiner for the course wrote:

The collaborative project based around the theme of poverty was interesting and gave students opportunities to combine research with creative outputs. The piece also seemed relevant to the local area, thus demonstrating how the students are making a contribution to the wider community. (External Examiner Report 2020-21)

Conclusion

This real-world project was received and explored enthusiastically by the students. In their written evaluations, students reflected on their knowledge and understanding of the causes and experiences of those in poverty. One student wrote, 'poverty can impact anyone, despite where they come from and who they are' (Roberts, 2021). For some students in the group, being able to share their own experiences with poverty was empowering. In alignment with the benefits highlighted in the Applied Learning Model, the students 'engaged with real problem-based learning scenarios', and they 'acquired and developed a collection of transferable skills fit for industry'; and the project 'facilitated community work [and] networking and highlighted social responsibility.'

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UCO RESEARCH SYMPOSIUM & TEACHING AND LEARNING SYMPOSIUM

JUNE 2022

UCO Research Symposium & Teaching and Learning Symposium, June 2022

This year, we are combining the UCO Research Symposium and the Teaching and Learning Symposium to create two days of exciting contributions from guest speakers, staff and students. The combined symposium will take place on 29th and 30th June 2022 and as in previous years, we are looking for contributions from staff and level 6 or 7 students in order to share and showcase teaching, learning, research, and scholarly activity. This years' theme is 'Creativity' and there are a number of ways in which you can respond to this overarching theme. We invite contributions which might include but are not limited to:

- Creative responses to COVID – how did you adapt, how are you continuing to innovate following COVID
- Embedding creativity in aspects of teaching, learning and assessment
- Creative teaching and learning interventions that have positively impacted attainment
- Creative methods, or ideas explored in/ through research

Your contribution could involve presenting ideas around teaching and learning, a professional activity or output, a published paper, or a teaching / research project in which you were recently involved.

Final year undergraduate students and postgraduate students are encouraged to present research from their dissertations or final year projects. PGCE/DE students are encouraged to share their research and/ or teaching experiences.

Participation in the symposium will enable you to share your practice and research in a supportive environment alongside invited guests. This is a great opportunity to hone your presentation skills for higher levels of study, other conferences or in preparation for the professional arena. You will also be invited to feature your work in the next edition of *Spark* (UCO's research and scholarly activity journal).

Please send your idea/proposal to tray.wilson@oldham.ac.uk

Spark 2023

Spark is UCO's annual research and scholarly activity journal which is available in print and online <http://www.uco.oldham.ac.uk/wp-content/uploads/2021/07/Spark-2020-21-web.pdf>

The journal currently showcases research, scholarship, and the creative outputs of staff and students at UCO. We would like to widen this remit to include contributions from across the whole institution of Oldham College. Contributions can include formal research papers, summaries of scholarship activities or research projects, or images of creative outputs. The maximum contribution is 4000 words or two A4 pages of images. The deadline for submissions for *Spark 2023* is January 31st 2022. If you would like further information or would like to submit your contribution, please email tray.wilson@oldham.ac.uk.



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