

Towards Co-Production: The Case of Movement Inspired by Martial Arts (MIMA)

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Abstract

One of the major streams of social scientific research on martial arts and combat sports has tended to examine these fighting practices and their distinct techniques of the body from an ethnographic perspective, studying typically young, male practitioners in their regular training environments. A newer trend in wider physical activity research is co-production, a collaborative design that involves community members helping to develop an intervention that suits their wants and needs. This article presents the design of the Movement Inspired by Martial Arts (MIMA) pilot project in Cardiff, Wales, which borrows exercises and movements taken from a range of martial arts that are adapted for older adults and women in multicultural, underserved communities. We evaluated and refined the initial version of the MIMA exercise programme through an iterative process by collecting findings of an evaluation questionnaire and two focus groups with older adults and professionals from a council and third-sector organisations. The findings led to the refinement of the programme that is demonstrated by describing key exercises, offering direct instructions and a video demonstration. We close with suggestions for future co-production projects, pointing the way to a new area for martial arts scholarship.

Keywords: Co-creation, Community-based research, Health and wellbeing, Adapted martial arts, Older adults.

1. Introduction: Field research, embodiment and ethnographies of martial arts

Field research is a means to study a social group, culture of organisation first-hand, studying their way of life and operation using “up-close and personal” methods of data collection such as participant observation, photography, tailor-made questionnaires and in-situ, relatively informal interviews. It can also be used within quantitative lens, especially in medical research, although is an equally well-established approach within qualitative methodology, particularly in sociocultural anthropology and sociology. Ethnography is one quintessential field research design tried, tested

and transformed over the decades, and it has been well utilised in martial arts scholarship since the 1980s (Jennings, 2019). Researchers began ethnographic inquiry as lone (and invariably white, male and Western) ethnographers undertaking field work in little-studied locations, such as Zarrilli's (1998) influential examination of Kalarippayattu in its native region of Kerala, Southern India, which added to Alter's (1992) pioneering study of North Indian wrestling. These studies illustrate a commitment to longitudinal data collection using multiple sources, with Zarrilli's (1998) study exemplifying the potential for multiple case studies across geographical and cultural settings. Empirical field research developed from more abstract descriptions of martial arts settings such as Goodger's (1982) pioneering sociological work indicating a Judo club operating as a gnostic sect, which did not contain any empirical data, despite the interesting theoretical insights it gleaned.

Ethnographies turned even more reflexive as the years went by, with Wacquant's (2004) famous study of boxing in Chicago being one notable example where the researcher's thoughts, feelings and concerns become more central to the writing process, which differed slightly to his more traditional focus on the boxers themselves in his journal publications from the 1990s exemplifying the boxers' commitment in diet and lifestyle (Wacquant, 1995). Wacquant's study inspired the *Fighting Scholars* edited collection (Sánchez García & Spencer, 2013) that included both ethnographic studies of particular martial arts and combat sports as well as autoethnographic writings of the scholar-practitioners (or "pracademics") themselves.

Martial arts ethnographies have become more gender balanced in recent years, with studies being produced by solo female researchers (e.g., Joseph, 2012; Madsen, 2015; Miller Griffith, 2016). The academic field is also becoming more diverse in terms of ethnicity, nationalities and religious backgrounds, with notable contributions from a new generation of researchers operating in increasingly multicultural societies (Joseph, 2012) adding to the earlier canon written by predominantly white, male scholars.

More recent ethnographic trends have made a mark on martial arts studies. Many scholars have moved away from acting as lone fieldworkers studying hard-to-reach communities, instead turning to more collaborative ventures involving what Delamont and Stephens (2023) call two-handed ethnography. Using the example of Capoeira, these authors worked as a team for over a decade, with the older and less athletic Delamont undertaking nearly pure observational work from the sidelines of the class while Stephens embedded himself as an apprentice student, benefiting from a background in Karate. In Delamont, Stephens and Campos (2017), these authors later worked with their *mestre* (teacher), who acted as a sounding board for their theoretical analysis. Other scholars utilising prolonged participant observation worked with academic supervisors and critical friends to produce more balanced and theoretically insightful accounts of a given culture (e.g., Jennings, Brown & Sparkes, 2010).

Like autoethnography, autoethnography has changed over time as it evolved from a narrative of the self to a more specific study of particular phenomena. Allen Collinson and Owton (2015) pointed the way to study the intense aspects of embodiment through a more phenomenological approach to autoethnography involving them charting their day-to-day physical experiences of undertaking distance running and boxing. This was extended by Allen Collinson, Vaitinen, Jennings and Owton (2016) in a four-way collaboration involving data from traditionalist Chinese martial arts and mixed martial arts (MMA) in terms of the sense of heat (thermoception). These

are examples of autophenomenography, which charts the direct lived experiences of the researcher who happens to be a committed practitioner of a given sport or martial art. Here, such sensuous scholarship adds to knowledge of how people live and learn the martial arts through specific senses such as touch and smell (Spencer, 2012), building a sensitivity to core ideas of body callusing and conditioning (Spencer, 2009) and pain (Green, 2011).

So far, we have covered developments in field research in martial arts, focusing on the interconnected traditions of ethnography and autoethnography. All these studies have tended to focus on the performing body and the development of embodied skill and knowledge in complete martial arts systems within spaces devoted to their teaching, coaching and training. Yet there are many techniques and practices that can be extracted from full fighting systems for reasons other than combat. This article charts the development of a novel and emerging programme, Movement Inspired by Martial Arts (MIMA), which draws on embodied knowledge obtained through successive ethnographies and wider study of different ways of moving the body in martial arts cultures. We examine the notion of techniques of the body in the next section before turning to an overview of a novel research design fitting the theme of embodied knowledge and health: co-production. This is followed by an overview of the fledgling Movement Inspired by Martial Arts (MIMA) project and its potential as a co-produced programme for older adults and women from diverse communities. We conclude with implications for a more collaborative, practical and adaptive approach to field research in martial arts studies.

2. Theoretical Framework: Techniques of the Body

The seminal ethnographies of martial arts outlined above have tended to be concerned with the embodied movements and process of acquiring bodily skill and knowhow in distinct martial arts cultures, institutions and pedagogies. The way that boxers learn to bob and weave, the manner in which a Kung Fu practitioner can replicate the movements of an inspiring animal or the subtle way of controlling one's body parts as a whole unit in Taijiquan, have been key problems and questions for these scholars. Despite the concept not necessarily driving the aforementioned research projects, the classic concept of techniques of the body (also known as "body techniques") is an appropriate theoretical notion for practical ethnographic and qualitative research projects on martial arts, whether they be focused on fighting, bodily control, cultural expression or national pride. French anthropologist and sociologist Marcel Mauss (1973[1934]) first coined the concept in a series of lectures to his students published posthumously, defining it in the oft-cited statement:

I deliberately say techniques of the body in the plural because it is possible to produce a theory of the technique of the body in the singular on the basis of a study, an exposition, a description pure and simple of techniques of the body in the plural. By this expression I mean the ways in which from society to society men [sic] know how to use their bodies. (Mauss, 1973, p. 70).

Following Mauss's (1973) pioneering logic drawing on his first-person, retrospective reflections and cross-cultural observations of contrasting ethnic groups, researchers can recognise that are

always parallel or alternative ways of performing a technique of the body between given societies, as in manners of marching and digging that Mauss observed between different militaries. However, there is also variety within a nation-state, as in the ways in which specific educational institutions develop a gender- and class-based walk and comportment, as Mauss noted with girls' finishing schools in his native France. Furthermore, while some techniques remain traditional within tribal, ethnic and local communities, others are classified by Mauss as being purely effective, indicating an instrumental rather than ritualistic attitude to technique. Mauss (1973) also noted intergenerational differences within swimming, with his own generation's (now quite bizarre) technique reminiscent of a whale's motion and breathing pattern.

Several martial arts scholar-practitioners have heeded Mauss's (1970) call to pay attention to techniques of the body. Anthropologist Ryan (2011), for example, has employed techniques of the body to uncover the realities of learning *juego de garrote* stick fighting in Venezuela. Recently, a special issue of the journal *Ethnography* edited by Nardini and Scandurra (2021) has collated studies examining how techniques can lead to a greater sense of belonging of martial arts cultures, from Italian *boxe popolare* (people's boxing underpinned by leftist Marxist principles) (Pedrini, Brown & Navarini, 2021) in terms of a political belonging to Mexican Xilam (a sense of belonging to a notion of nativist, indigenous Mexicanidad) (Jennings, 2021) and Breton Gouren wrestling (an affiliation to an imagined Celtic ancestry) (Nardini & Épron, 2021).

However, despite the ready applications of this accessible concept, there remain some limitations to the original theory, as a more thorough examination of how and why a technique is created in the first place, as Ben Spatz (2015) notes: "Where does new technique come from? Mauss tells us that a new technique of swimming has been found, but he does not explain who found it or how" (p. 61). Furthermore, Spatz (2015) identifies a gap in understanding around human consciousness and agency: "In pointing out the difficulty of unlearning technique once it has been absorbed to the point of unconscious reflex, Mauss raises another issue: the relationship between knowledge and agency. If technique is knowledge, then how can it become involuntary?" (p. 30).

Spatz (2015), an American contemporary specialist in drama and theatre studies and Aikido exponent, has since adapted and enhanced Mauss's (1973) original formulation of techniques of the body. He summarised the theory under four guiding principles:

- 1) Technique is knowledge; it is acquired and not easy to unlearn.
- 2) Technique is transmissible; it travels across time and space and is always hybrid and mixed.
- 3) Technique is a compromise between "nature" and "humanity."
- 4) Technique can be embodied in the sense that it may work with and through the materiality of bodies as distinct from technologies.

(Spatz, 2015, pp. 32-33).

Regarding technique as a distinct form of knowledge that is valuable in and of itself, Spatz (2015) also postulates that practice is a form of research. In the context of martial arts, then, effective striking techniques are seen as a form of knowledge that sits alongside other distinct forms of knowledge such as understanding of the philosophical principles underpinning the art, as well as a deep understanding of its history, founders and micropolitics. Martial arts instructors and practitioners accrue this knowledge over many years and decades of practice, and simply reading

about these arts or watching videos and listening podcasts (aiding one's cognitive and cultural knowledge) is insufficient in developing rounded knowledge of how to perform the movement properly. This can only be achieved through practice alone and with training partners, testing movements and eventually adapting techniques to suit one's needs and purposes as a given period of one's martial arts career and life.

The dynamic nature of technique, knowledge and practice allows for the continued transmission of technique in specific arts, as Spatz (2015) noted with the case of postural yoga, which has shifted from a male-dominated, ascetic milieu in its native India to a female-focused, commercial and secular environment in the Western context.

Mauss sought to demonstrate that techniques are not tied to particular societies, but rather can be shown to move continuously across national and cultural borders. This suggests that the identity of every nation is essentially hybrid or composite and points towards a view of humanity as united by shared knowledge resources rather than divided by nation of culture...Mauss's basic insight holds: Technique does not belong to any one nation or people. The power dynamics that attach to its movement are complex and deserving of more substantial analysis (Spatz, 2015, p. 31).

This power dynamics helps raise questions pertaining to the methods used to explore the topic of technique through a more inclusive, participatory and community-based approach to practice. In the next section, we examine such a methodological possibility through an introduction to the novel and increasingly influential design of co-production. Such a design responds to calls for granting more agency to our research participants and the potential end-users of practical, public-facing research – something that resonates with Spatz's (2015) critique of the original conceptualisation of techniques of the body as the basic, most exact element of social analysis.

3. Co-Production in Exercise and Health Research

In healthcare, co-design and co-production are creative processes in which staff and patients work together to improve services or develop new interventions (Robert et al., 2022). Both approaches are promoted for their benefits – such as better experiences, more effective and safer services – alongside partnership working and democratic rationales, which enable inclusivity and equity. However, research evidence on the various ways and contexts in which these approaches are applied in the development of sport and exercise interventions remains scarce (Smith et al., 2023; Walker et al., 2023).

In healthcare settings and policy development, co-production and co-design have gained popularity over the last decade. However, there is still a lack of consensus in defining these terms, as well as in providing clear descriptions of methodology and evaluation (Constantin et al., 2022). Co-production has been used as a broad term covering a range of other “co-” words that are often ambiguous and applied to diverse contexts. In research, co-production is considered a slippery and muddled concept that is often misapplied (Masterson, 2022). The concept of co-production originates from the work of Elinor Ostrom in the 1970s, which introduced the idea of variations in the delivery and outcomes of police services by actively involving citizens – for example, by reporting crime and taking preventive measures (Ostrom et al., 1978). In healthcare,

co-production has been used to describe the process in which patients play an active role not only in influencing the delivery and outcomes of services but also in contributing to their development and refinement (Roberts et al., 2022).

The lack of consensus on terminology has led to the emergence of multiple new terms and definitions. A recent systematic scoping review of existing definitions of co-design and co-production by Masterson et al. (2022) identified 60 commonly used definitions and mapped out eight definition clusters related to intervention design and research in health and social care. To navigate these variations and build consensus, Masterson (2022) emphasised the importance of moving beyond creating new concepts and distinguishing contexts toward establishing agreement on the core values and principles of co-production. Similarly, Smith et al. (2023) argue that rather than searching for the “true” definition of co-production, researchers should appreciate definitional heterogeneity and the contextual or disciplinary factors that shape it (Smith et al., 2023). Terms such as co-production, co-creation and co-design are often used interchangeably. While they are distinct, they share similarities in promoting collaboration between stakeholders (Robert et al., 2022). Vargas et al. (2022) proposed that co-creation encompasses both co-design and co-production. In healthcare, co-design represents the earlier phase of the co-creation process, such as intervention development, whereas co-production occurs in later phases, including service delivery, evaluation and iteration (Vargas, Whelan, Brimblecombe, & Allender, 2022).

Our understanding of co-production aligns with the following perspective: an approach in which end-users of services contribute their lived experiences to inform research alongside academics and/or clinicians, thereby enhancing the research’s impact and influence on people’s lives (Smith et al., 2023). We aim to follow best practice guidelines (Smith et al., 2022) and apply co-production in a way that ensures joint ownership, shared decision-making, and equal valuation of the opinions and knowledge of all involved.

Co-production has recently been applied in the development of exercise interventions with and for certain populations. Examples include a physical activity referral programme for people with lifestyle-related health conditions (Buckley et al., 2023), exercise interventions for young people from refugee backgrounds (Smith et al., 2022), and programmes for individuals with severe mental ill health (Walker et al., 2023). The level of involvement of people with lived experiences varies across these research studies; however, all share a common foundation: scientific knowledge is integrated into a social context in the process of knowledge production. Furthermore, these studies used co-production to refine or maximise the impact of interventions and, ultimately, to promote positive changes in well-being and improve engagement.

Our co-production work on MIMA is an iterative process that constantly evolves and shares similarities with previous practices (Buckley et al., 2023; Walker et al., 2023). The key principles of our approach – equity, relevance, impact, inclusion, and sustainability – are presented in Figure 1 below.

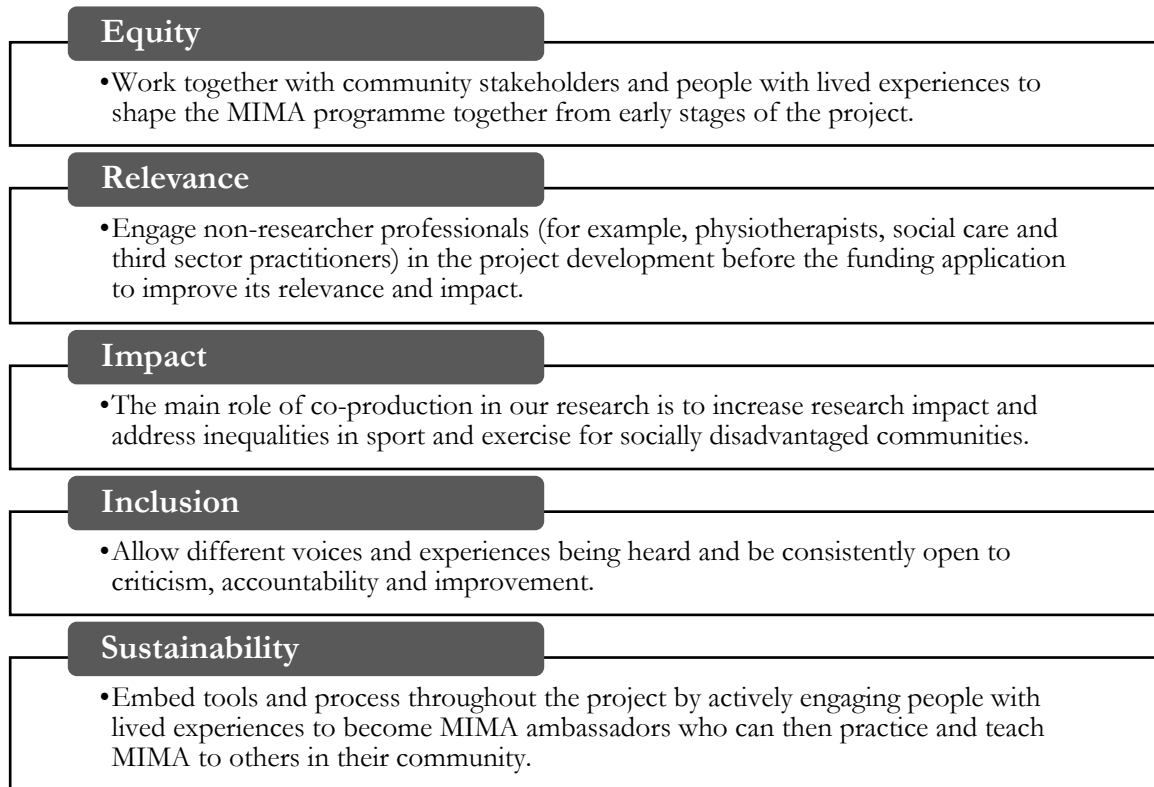


Figure 1. Working principles in the MIMA co-production project

We therefore make every effort throughout the project to widen participation, ensuring that the perspectives of those who cannot be consistently involved but wish to contribute in different ways are included in the co-production process of the MIMA programme.

The benefits of co-production have been widely acknowledged in enhancing research impact and addressing inequities. By involving non-academic partners and people with lived experiences while addressing real-world issues, co-production leads to more impactful research. It provides a platform to ensure that marginalised voices are heard early in the research process, thereby improving equity (Smith et al., 2023). Co-production may also enhance the experiences of participants and practitioners within a given service, leading to quality improvements in healthcare – such as increased effectiveness and patient safety (Roberts et al., 2022) – as well as the development of more user-centred and effective interventions (Buckley et al., 2023). Additionally, co-production values multidisciplinary collaboration and integrates diverse forms of knowledge, including experiential knowledge from people with lived experience (Buckley et al., 2023; Smith et al., 2023). Co-production holds significant potential for creating more inclusive, impactful, and high-quality research in the fields of sport, exercise, and health sciences. Research on co-production, as well as patient and public involvement in health research, shows that patients, communities, and researchers all benefit from the process (Smith et al., 2023). Evidence demonstrates its value in developing tailored interventions for specific populations facing multiple challenges in being physically active (Buckley et al., 2023; Walker et al., 2023).

Our vision with the MIMA programme is to address challenges in our communities and widen participation in marginalised groups. The presented evidence indicates that co-produced exercise programmes could increase engagement through tailored physical activity interventions for more sedentary population groups, for example, older adults and people from diverse ethnic communities. People from diverse ethnic communities and those living in higher deprivation represent a marginalised population experiencing social exclusion and inequalities across many aspects of life (Bansal et al., 2022; Kapadia et al., 2022). Women from diverse ethnic backgrounds are particularly underrepresented in sport and exercise, and they often lack a platform where their voices are heard. Research and co-production of an exercise intervention could provide them with an opportunity to actively contribute and be acknowledged. It is crucial to listen to the voices of these groups to ensure that exercise interventions are relevant, accessible, and designed to improve health in ways that align with real lived experiences.

A collaboratively developed exercise programme would be more relevant to the community, increasing participation and engagement. In our experience to date, co-producing with individuals from diverse ethnic communities requires active and creative engagement from the research team. This process demands compassion, patience and a commitment to building trust. A creative and exploratory relationship between instructors and participants – beyond the traditional provider-consumer dynamic – can generate new insights and innovative approaches to programme development. Co-production enables participants to be active contributors to their own movement experiences. It is essential to develop new strategies that foster inclusivity and equity, particularly within martial arts programmes designed for specific populations. Using co-production in a martial arts setting allows participants to take a leading role in designing their exercise programme. They can identify key priorities, shape the programme's content, and influence how it is delivered. This participatory approach can better address the barriers to exercise faced by individuals with physical, mental health, or life challenges, ultimately enhancing adherence and enjoyment of movement and exercise.

4. The Case of the Movement Inspired by Martial Arts (MIMA) Project in Wales

Like many late-modern Western societies, Wales, as one of the four devolved nations of the United Kingdom (UK), faces challenges of an increasingly isolated, ageing population with limited health knowledge and physical literacy. This lack of exercise know-how is especially problematic in recognised areas of socioeconomic deprivation. It is recognised that high rates of morbidity and mortality and a generally short health life expectancy are linked to heightened levels of sedentary activity – especially due to prolonged periods of sitting on chairs (Henson, De Craemer, & Yates, 2023). Wales is recognised as being a problematic region in terms of blood pressure for men over the age of 50 (British Heart Foundation, 2025). Cardiff, the capital and largest metropolis of Wales, is a culturally diverse city with many such neighbourhoods facing with higher deprivation and communities experiencing several challenges and poorer quality of life. In Wales, there is high inequalities in healthy life expectancy, the average person in the most deprived decile spends an additional period of around 9 years in less than good health versus those in the least deprived decile (22.1 years versus 13.2 years) (ONS, 2022).

As a consequence of challenges and health inequalities, the Welsh Government sets the Healthier Wales strategy that has long-term vision of a “whole system approach” to health and social care. The strategy places strong focus on community-based preventative services and care. Furthermore, the most recent Long-Term Strategy (2023-35) of Public Health Wales sets six priorities with a specific focus on NCD prevention. Four of these priorities relate to our project: influencing the wider determinants of health; promoting mental and social well-being; strong focus on prevention and early intervention; promoting health behaviours (for example, action on physical inactivity).

Effective interventions are needed to improve social inclusion and overall health and wellbeing in diverse communities and to tackle challenges posed by the ageing population (Williams & Kemper, 2010). Physical activity is known to benefit health, slowing physical and mental decline and reducing NCD risk (Ballesteros, Kraft, Santana, & Tziraki, 2015; Whitehead & Blaxton, 2017; Windle, Hughes, Linck, Russell, & Woods, 2010). However, national activity trackers show that in older adults, physical activity has remained lower than the national averages over the last decade both in England and Wales, and more than 40% of middle-aged and older adults lack sufficient physical activity (Sport England, 2022, Sport Wales, 2024). Moreover, across adults in all age groups, individuals from Asian and Black ethnic backgrounds were less likely than average to engage in physical activity (Sport England, 2022). Those from socially disadvantaged or Black or Asian ethnic groups experience a higher burden of physical inactivity (Roe, Aspinall, & Ward Thompson, 2016) and physical activity is well below recommended levels and most physical activity intervention studies have been largely unsuccessful in socially deprived and ethnic minority communities (Ige-Elegbede, Pilkington, Gray, & Powell, 2019; Such et al., 2017).

Enjoyable leisure exercises have better health outcomes than occupational or household activity (Godbey, Chow, & Burnett-Wolle, 2007). Exercise improves cognitive function, possibly through increased social interaction and emotional well-being (Kirk-Sanchez & McGough, 2013) and cardiorespiratory fitness (Angevaren, Aufdemkampe, Verhaar, Aleman, & Vanhees, 2008). Activities like chess, bridge, memory training, and social programmes also boost cognitive function (Evers, Klusmann, Schwarzer, & Heuser, 2012; Mireles & Charness, 2002). Cognitive and socially supported exercise like dancing, Tai Chi (Taijiquan) and other forms of martial art exercises could slow cognitive decline (Ballesteros et al., 2015; Diamond & Ling, 2016; Manson, Rotondi, Jamnik, Arden, & Tamim, 2013). So far, evidence strongly supported the positive impact of Tai Chi on quality of life, physical function and executive function (Chen et al., 2020; Gao, Greiner, Ryuno, & Zhang, 2024; Shah, Arden, & Tamim, 2015). Other forms of martial art classes may also be beneficial for physical and mental health in older adults due to the coordination, learning of certain movement patterns, and social interaction embedded in the exercise.

4.1 Methods

A co-production approach has been recommended as a promising method for identifying barriers and facilitators to engagement in physical activity and for collaboratively developing interventions with marginalized groups – shifting from a “done to” model to a “partnership with” design (Walker et al., 2023). In this study, a pragmatic co-production approach was used to develop the

MIMA programme and to evaluate its initial implementation in the community. Participatory and integrated methods may help bridge the gap between research and practice. Co-designing interventions appears to be an effective way to address the needs and preferences of inactive older adults from diverse ethnic backgrounds.

Collaboration between community organisations, exercise providers, and academic institutions offers a strategic approach to advancing research in this field. Such joined-up strategies can help identify key challenges, generate relevant research questions, and develop shared solutions that promote engagement in physical activity. Novel approaches – such as co-design and public involvement – have proven valuable in research targeting inactive older adults (Guell et al., 2018; Stathi et al., 2020; Withall et al., 2020). Establishing an advisory group of older adults during the development phase may support more effective intervention design and improve implementation through tailored recruitment strategies and materials.

While participation in research may influence adherence – potentially increasing motivation to complete post-intervention assessments or strengthening commitment to the project – it also provides valuable insights into promoting exercise and delivering programmes within low-participation communities. Clinical trials often focus on rehabilitation or fall-prevention interventions for patients with a medical motive, limiting the generalisability of their findings to broader community-dwelling older adults. Therefore, better methods are needed to study community-based programmes, such as field testing, advisory groups, evaluation surveys, and qualitative interviews (Szekeres, 2022).

4.2 Co-production Strategy

In our project, we followed a co-production strategy to design, test, and implement the pilot MIMA programme in a diverse community setting. The process involved the following steps:

1. *Co-creating* the MIMA project plan and the movement programme
2. Conducting *system mapping* workshops to explore barriers and facilitators to physical activity in diverse communities, and identifying strategies for community implementation of MIMA
3. *Testing* the MIMA programme through community-based taster sessions to assess acceptability and engagement among middle-aged and older adults living in ethnically diverse neighbourhoods in Cardiff

4.3 Co-creation

A team of three early career researchers developed the co-production strategy through consultation with community stakeholders and members of the Wales Martial Arts Practitioner Researcher Network (WMAPRN). The strategy comprised four workshops with a closed co-production group – including community practitioners, martial arts instructors, and older adults – followed by a three-month pilot phase. The local council's volunteer coordinator and two members of WMAPRN became co-applicants to support the development and delivery of the MIMA intervention. The first version of the movement programme was developed collaboratively, led by George and in partnership with WMAPRN. The hybrid martial arts – inspired exercise set was designed to target full-body movement and could be performed flexibly – indoors or outdoors, with or without the support of a chair.

4.4 System mapping

We conducted focus groups as part of four system mapping workshops to explore how the programme could be effectively implemented within the community. Two in-person workshops were held with 12 and 15 participants, respectively, aged 50 and older, from ethnically diverse backgrounds. Two additional workshops were conducted online with stakeholders who provide services to these communities. Each workshop lasted approximately 60-80 minutes. All participants provided informed consent and received a £10 shopping voucher in appreciation of their time. The facilitated discussions covered themes such as individual motivators and barriers to participating in social and physical activities, strategies for maintaining health and mobility, and the broader cultural and systemic factors that affect activity levels. A semi-structured interview guide was used (see Appendices).

Workshops were audio-recorded, transcribed verbatim, and analysed using thematic analysis (Braun & Clarke, 2006). Thematic maps were developed using Kumu system mapping software (www.kumu.io) to visually represent interrelated factors. Following each session, the maps were updated to incorporate newly identified themes and insights.

4.5 Programme Testing

Participant feedback was collected via a short, paper-based survey during four public engagement events that marked the launch of MIMA. Data from the surveys, along with field observations by the research team and verbal feedback from participants and stakeholders, were used to evaluate the acceptability and engagement of the programme and to guide its refinement.

Each taster session was attended by approximately 15 participants. Sessions were led by George and included the initial version of the MIMA movement programme. Printed feedback surveys were administered immediately after the sessions to capture participants' fresh reflections and experiences. Table 1 provides a summary of participant numbers across the sessions. Overall, 76 participants took part at least in one of the four sessions.

	Location	Number of participants
1.	Splott	26
2.	Butetown	22
3.	Grangetown	16
4.	Health fare in Grangetown	12

Table 1. List of MIMA taster sessions

Background of the MIMA programme and the authors' positioning

Movement Inspired by Martial Arts (MIMA) was developed in 2023 by the two authors in conjunction with a range of specialists in our respective professional networks. George is a martial arts scholar-practitioner and ethnographer who has continuously learned, researched and

written about numerous styles since the age of 14: Taekwondo, Kendo, Judo, three styles Wing Chun, Xilam (a Mexican martial art), historical European martial arts (HEMA, often known as historical fencing) and three styles of Taijiquan, along with shorter explorations of other styles such as Cheng Hsin, mixed martial arts (MMA), kickboxing and Brazilian Jiu Jitsu (BJJ). His main ethnographies to date have been on Wing Chun (Jennings, Brown & Sparkes, 2010), Xilam (Jennings, 2019), Taijiquan (Ma & Jennings, 2021) and HEMA (Jennings, 2022), and although those social scientific studies were on the topics of subculture, embodiment and identity, George is able to draw on this embodied, technical knowledge developed from long-term immersion in those cultures and pedagogies, and this is aided by his previous experience as a former personal trainer, martial arts instructor (in Wing Chun) and exercise rehabilitator specialising in stroke survivors. This bodily knowledge has been modified to devise and adapt a set of suitable exercises for older adults who might have never trained in, and perhaps might have never contemplated trying out, a martial art or combat sport before. Zsofia is not a martial arts practitioner, but her background and network enabled MIMA to be successful and in-demand. Zsofia is a Research Associate and a Networking Co-lead at the Centre for Health, Activity and Wellbeing Research (CAWR). She is an early career researcher in exercise psychology passionate about community-based research that aims to make a difference in improving health and wellbeing across the lifespan.

4.6 Findings

Co-creating

At the outset, we encountered several challenges due to limited funding and recruitment difficulties. In response to these barriers, we adopted a step-by-step, patient, and pragmatic approach to the co-production process. This included maintaining flexibility and working within the constraints of available financial resources, community connections, and emerging opportunities.

As described in the Methods section, this pragmatic process involved outreach activities with community stakeholders, the organisation of system mapping workshops, and the testing of the movement programme through public involvement and engagement events. Attendance at these events was open to all, resulting in a varied group of participants at each session.

Planning commenced in the summer of 2023 with the support of the Wales Martial Arts Research Network, funded by the Wales Innovation Network (WIN), led by George. Additional support came from professionals in social care, healthcare, and third sector organisations, particularly those working in community-facing roles within the local council and health board. These connections were established through the ACTIF project coordinated by Zsofia.

The shared vision of the MIMA project was to collaborate with local stakeholders to develop an exercise programme that effectively addressed barriers to participation. The programme was informed by scientific evidence, the expertise of martial arts practitioners and researchers, the practical knowledge of community stakeholders, and the lived experiences of individuals from Black, Asian, Middle Eastern, and Chinese communities.

As a result, the development of MIMA has been an iterative process of co-production, refinement, and evaluation. Figure 2 provides an overview of this process. The project is currently at the pilot stage. MIMA emerged through co-creation, reimagining martial arts to suit the needs and contexts of diverse communities. Initial consultations with local stakeholders indicated that MIMA would complement existing activities and fill gaps in current offerings.

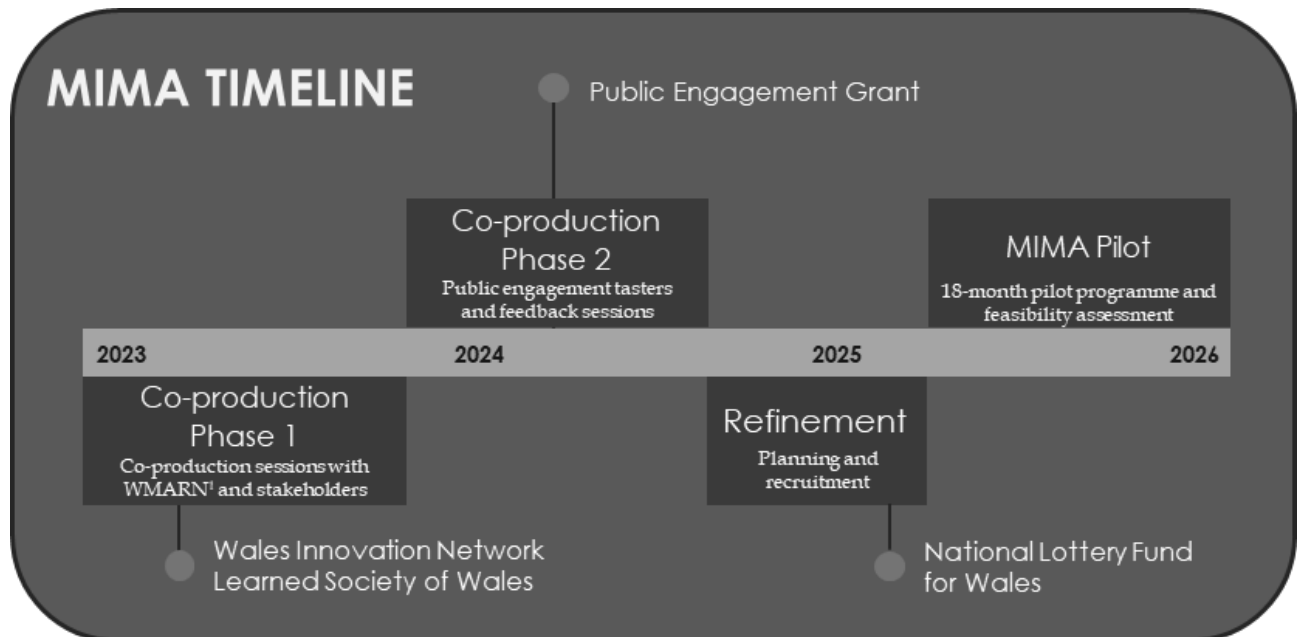


Figure 2. Timeline of activities in the MIMA development¹

The subsequent systems mapping and testing phases of the project was funded by smaller grants provided by the Wales Innovation Network and the Cardiff Metropolitan University Public Engagement grant.

Systems mapping

The thematic analysis of the focus group discussions held during the systems mapping workshops identified several key themes related to physical activity engagement. These included: enabling environments, ageing and disability, knowledge about health and habit formation, positive mindset – “keep going”, social support, and health problems as determinants of engagement. A systems map illustrating the interconnections between facilitators, barriers, and related factors is included in the Appendices.

Environmental-level barriers included limited or inaccessible transportation to activities and a lack of information about available community services and programmes. Interpersonal barriers

¹ Wales Martial Arts Research Network

encompassed a lack of support from family and friends, language difficulties, and communication challenges faced by service providers and professionals. At the intrapersonal level, participants identified barriers such as ageing, disabilities or health conditions, and a reluctance to share problems or seek help (often described as being “stubborn”).

Motivators were identified at environmental, interpersonal, and intrapersonal levels. At the environmental and systems level, participants emphasised the importance of an enabling environment – such as access to local community centres and clubs that offer social and exercise activities, and coordinated efforts between organisations to promote participation.

Interpersonal motivators were often shaped by the enabling environment. Building trust and receiving social support were seen as key factors in encouraging participation.

Intrapersonal motivators were primarily described by participants who were already active. These included knowledge of how habits and behaviours affect health, a desire to stay healthy, and serving as a role model – especially for younger people. Participants also highlighted the importance of engaging in meaningful activities such as volunteering, being creative, spending time outdoors, socialising, and connecting with nature. Many expressed a desire to keep their minds active and to take on responsibilities, such as volunteering, after retirement. A positive mindset – summarised by the phrases “keep going” and “make the most of life” – was a strong motivator among active individuals but was not reported by those who were inactive.

These findings informed the support structures and collaborative strategies necessary for effectively implementing and promoting the MIMA programme. To support inactive individuals in becoming more engaged, we decided to partner with a local charity that provides services for women from minority ethnic backgrounds and to establish new connections with other community organisations for piloting the MIMA programme.

Testing

The public engagement events took place between March and December 2024 and promoted healthy ageing in Cardiff through community engagement. These events were collaboratively designed with community stakeholders and the Wales Martial Arts Practitioner-Researcher Network, and took the form of a health and movement fair.

The format of the events included taster sessions from a range of martial arts disciplines alongside demonstrations of the MIMA movement programme. In addition, information stalls were set up around the venue by social and health service partners to provide resources and advice.

In total, 76 older adults participated in the events. Four taster sessions took place at different community venues in some of the most deprived and ethnically diverse areas of Cardiff (Table 1). The events provided an opportunity to bring martial arts, physical activity and research closer to communities who have low representation in exercise, especially in martial arts. Feedback was collected through short surveys, direct observations, and informal verbal comments from participants and stakeholders. These data provided valuable insights into the levels of interest and engagement with the MIMA sessions, as well as participants’ experiences of performing the exercises. In particular, the feedback highlighted how middle-aged and older adults perceived and adapted to the movements based on their individual physical abilities and limitations. The

evaluation of the taster sessions is summarised in Table 2. The photos from the event can be found in the Appendices.

Outcome indicator	
Volunteers supporting the event	3
Number of individuals attending the event	76
Number of information stalls from stakeholders	13
Number of participants who expressed interest in being part in research and future MIMA sessions	64
Average age of participants	68 years old (range 50-82)
Percentage of participants who rated the event as “excellent” or “good”	92%
Percentage of participants who rated the event as “average”	8%
Feedback from participant	“I enjoyed witnessing the different type of martial arts, it brought a lot of people together from various backgrounds.” “All of it (was a change)” “I like the exercise/age well clinic.” “Nice welcome and informative events.” “The cycling with pedal power was fun.”

Table 2. Outcomes of the four taster sessions run across Cardiff

The martial arts taster sessions were all adapted for older adults and co-designed by three martial arts experts (in Karate, Taijiquan and Wing Chun). These were originally called “Movements Inspired by Karate” and so on. Through these sessions, participants could learn basic movements that are safe and beneficial for their coordination, strength, and balance. The instructors could observe how the movements were received by this population and what safety actions and adaptations are important when delivering a class. Therefore, through this learning, the Movement Inspired by Martial Arts programme was further refined. The description and the link to the video recording of the refined MIMA movements can be found in Appendices. The

project fostered a two-way interaction with the community, generating mutual benefits. Through this engagement event we learnt that we need to build rapport and trust and to “give something back” when we are trying to collaborate with a third sector organisation like Women Connect First and gently plant the seeds for future collaboration. Overall, the learning from the events helped us plan and deliver more inclusive, person-centred programme with the MIMA concept in the future.

We then saw an opportunity to make use of a distinct form of bodily knowledge – novel, accessible and aesthetically-pleasing techniques of the body taken from various martial arts – to modify movement sets, warm-ups, games and exercises for older, less active adults aged 50 and above. Later trials delivered by George took various exercises and movements from an array of martial arts, which seemed to be more accessible for the older adults less accustomed to the set-up of lengthy martial arts classes and their extensive curricula. Initial feedback from a set of questionnaires in various venues indicate that the MIMA exercises are relatively straightforward to copy and execute according to varied physical abilities (mobility issues, the need to sit on a chair, lack of energy, and so on). MIMA has now reached the level of maturity in terms of its exact exercises, routines and mission that we present examples and insights from this initiative. So far, MIMA has been trialled in less affluent areas of Cardiff relatively far from our campus. This is thanks to collaborations with the council-run hybs / hubs (leisure and community centres) as well as through the charitable organisation Women Connect First for women of minority ethnic backgrounds (who are, of course, Global Majority women) and MenoPals, a support group for women going through the often-uncomfortable periods of their lives associated with the menopause and perimenopause. We have also presented at various health fairs and events run by the council and health board. Demand for MIMA demonstrations and taster sessions remains high, and we have managed to secure funding to sustain the programme for a further 18 months (spring 2025 to winter 2026) thanks to the National Lottery Awards for Wales, and more recently, the Spin-D Dementia Network Plus. Showcase events confirmed interest from diverse groups, with attendees enjoying the novel, fun movements and highlighted MIMA’s unique benefits for flexibility, balance, and strength.

MIMA has always been a co-production project beginning as an innovation activity linking to our institution’s civic mission to reach out to local, hard-to-reach communities who do not normally have any professional, personal or familial ties to a university or department specialising in sport and health sciences. The events in the hubs have targeted older adults on the ACTIF project list. The participants are therefore elderly people keen to become more active and independent through group-based exercise sessions. These movements are taken from the ethnographies that George has conducted as a student and apprentice in various martial arts schools in England, Wales and Mexico. The repertoire of exercises is likely to expand over the next few years as George conducts new ethnographies of different forms of martial arts.

5. Discussion and Conclusion

Field methods such as ethnography and autoethnography have been utilised to great effect in martial arts studies, offering deep insights into how fighting systems from around the world are

taught and practised within their regular social and pedagogical settings. These popular designs often involve a growing expertise of budding and seasoned scholar-practitioners learning and utilising an array of defensive and offensive techniques as well as body conditioning exercises for developing a particular body for the art in question. However, there remain a paucity of martial arts interventions in the wider community that make use of this embodied and scholarly knowledge. A more recent development in qualitative methodology and social science is the design of co-production, which involves a continuous engagement with the community in question to co-create a novel and specific programme that suits their needs. This has been employed to great effect within the health sector, as in the Welsh National Health Service (NHS) context inspired by governmental co-production initiatives with patients and those that support them.

This article is the first report of an emerging martial art-inspired physical activity programme named Movement Inspired by Martial Arts (MIMA), which adapts techniques and exercises taken from a range of martial arts that its co-founder has learned, taught and researched over the course of several decades. MIMA is co-produced with its intended end users: older adults and women from diverse communities who are less likely to be involved in typical martial arts classes. Specific parts of the body are targeted by adapted exercises performed in unison, while movements can be modified for people requiring a seat or having issues with their range of motion. MIMA remains an open project in which new exercises taken from ongoing ethnographic fieldwork can be incorporated into the repertoire of exercises available to the older adults and their family members and carers.

The article presents MIMA in its relative infancy, charting its early developments as an innovation project supported by initial external funding. With this in mind, there are limitations to the initial reflections due to us not having a sufficient body of data from observations, interviews and questionnaires. Further research into MIMA could uncover the challenges that older adults face in following the exercises, and moreover, the ways in which they attempt to practise the movements at home, away from the instructors. Video recordings and an accessible platform as well as print resources including images of the movements accompanied by simple written guidance could be the next step for the MIMA project, enabling the older adults with no prior training in martial arts to enjoy moving in novel, subtle and creative ways within potentially confined spaces and short, regular periods of “unproductive” time, such as waiting for water to boil in the kitchen, watching television adverts on the sofa, or while standing idly at a bus stop. Future work might also attempt to take MIMA outside the local setting of Cardiff through the development of the aforementioned resources, also translating to a range of languages to better serve increasingly ageing, ailing and ethnically diverse communities by aiding their movement abilities, mobility and motility. We wish to develop movements that are inspired by martial arts classes, while acknowledging what Paul Bowman (personal communication, 2024) once commented on MIMA: “that martial arts are also inspired by movement – those distinct human techniques of the body such as kicking and throwing”.

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Appendices

Appendix 1. - Interview guide

Questions	Materials	Time
Moderator to introduce • Themselves • Cardiff Metropolitan University and CAWR • Funding source (WIN) • Aims and the main subjects of the discussion • Introduce any observers • Reassure participants of confidentiality • Secure permission to record I believe you have all had the opportunity to read and understand the participation information sheet. Does anyone have any questions? If they have no questions (or if you have addressed the questions they have asked), then complete consent forms and continue. For this discussion, there are no right or wrong answers, and every experience is important. While I will be moderating the process, it should be more of an interactive discussion among you about the questions that will be asked. So feel free to share your thoughts about your experiences and also feel free to disagree with each other but do so respectfully. • Let us try not to talk over each other. This would affect transcription and may affect the data and the final report. • Let us switch off mobile phones or put them on silent mode. • If anyone has to leave, for example to use the toilet, quietly leave and when you return quietly have your seat and continue participating in the discussion. • Please use a nickname for yourselves today and write it on your badge. We use the nicknames (or pseudonyms) so we keep the data anonymised when we record the conversation. Does it work for you all? To facilitate transcription and analysis, I will record the discussion with your permission. Are you happy for me to record? . I'd like to begin by asking each of you to introduce yourself. We will do some drawing to help us introduce ourselves. On the paper tag in front of you please draw something or write a few key words about the following:	Recording devices Paper tags Pens	15 min

1. Your favourite activity that you do almost every week or your hobby (something that interests you) 2. An interesting thing about your neighbourhood where you live or the place where you are from		
Group discussion and activity What does the term “purposeful” or “sense of purpose” mean to you? And what are the activities that you do and it gives you a kind of “sense of purpose”? Task 1 Moderator to hand out postit notes. Ask participants to write first 3 words or phrases that come into their head when they think of the reason why you like doing these things. Participants to share their answers with the room • What three words did you put down? Why? Now please write down as many things as you can that encourages you/ motivates you to do these things? Participants to share their answers with the room • What three words did you put down? Why?	Post-it notes Recording devices Flip chart Pens	15 min
Group discussion and activity Moderator place a new flip chart on the table with a + in the middle and 4 headings: Keeping healthy, Difficulties to keep healthy, Keeping mobile and active, Difficulties/barriers to keep mobile and active Discussion A: How do they keep healthy? Please write 2-3 things on postit notes and stuck in on the right hand side of the flip chart that in on your table. What are the difficulties that they face to keep healthy? Please do the same and write 2-3 things on postit notes and stuck in on the left hand side of the flip chart that in on your table. Discussion B: What do you do to keep mobile (physically able and strong)? What things encourage or help you to be active and connected to your community? What things discourage or stop you being as active as you would like? • What are the things that you miss (if there is anything) where you live?	Post-it notes Recording devices Flip chart Pens	20 min

We would like to identify things what could be improved about the current services and make it easier for people to be up-and-about and try activities and 3ct to others in their neighbourhood. Please list 3 things what we could be improved to make it available and convenient for people and to make it easier to be up-and-about and join a activity programme or social sessions. • What could enable you to be more physically active in your local area (e.g. safe routes to walk, local activities and groups, cycle routes etc.)? • What would help people more to stay socially connected? (e.g. more local activities which are culturally appropriate, more accessible community spaces, better transport etc.)?	Post-it notes Recording devices Flip chart Pens	20 min
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Appendix 2. System map



Appendix 3. Photos from the taster sessions

The link to the photo repository: [Photos MIMA taster sessions](#)

Appendix 4. Description of MIMA Exercises

A typical MIMA session is composed of numerous movements and exercises learned across the course of various ethnographic projects. Common activities in most workshops include:

1. The spinal wave
2. Shoulder rolls
3. Hand circle and punch
4. Squat and block, return and circle
5. Turn and chop
6. Opening and closing the hands
7. Feet circling
8. Spinning plates
9. Squat and kick
10. Balance on one leg

These exercises are performed in unison, with participants standing in rows or in a semi-circle around the instructor (as in many martial arts classes). The images and descriptions provided below illustrate a sample of these popular exercises so that the reader can imagine taking part in a real-life MIMA workshop. There are many other techniques utilised in MIMA, many of which can be performed while sitting or even laying down. We describe the ten select exercises below.

Spinal wave

George learned this exercise from his apprenticeship in Taijiquan – a practice he continues to this day. Standing straight, with the feet around shoulder distance apart, sink down, sagging with the spine so that you become hunched, with the head dropped as if looking for something on the floor. Then, ever so slowly, move upwards from the tailbone, spiralling upwards through the lower, middle and upper back until the head is lifted to stretch the spine. If possible, try to pull from the crown of the head and pull down from the coccyx. Think deeply, peering into the body to visualise each section of the spine. Then repeat for at least one minute, trying to keep a steady rhythm. This exercise will open up the back while helping to warm up the core of the body. It can be taken to a higher level as a balance exercise by closing the eyes or extending upwards to raise upon the balls of the feet.

Shoulder rolls

Most people know the basic limbering exercise of rolling the shoulders forwards and then backwards, following a steady pace to increase the range of motion in these often tight, underused regions. Martial arts such as Wing Chun and Taijiquan have their own variations of underpinning

deep principles within this exercise. Taijiquan stresses the scapula over the frontal shoulders, so try to move the shoulder from the scapula on the upper back. This will prove more of a challenge for the body and mind, and the exercise can be extended by lengthening the arm into a Wing Chun punch (vertical first, with the thumb facing upwards) which is kept out straight while moving in forward circles (again, driven from the scapula), followed by backwards circles using the same driver. This exercise will enhance mobility and awareness of hidden parts of our body.

Circle back and punch

This exercise hails from Xilam, a dynamic Mexican martial art with many games. Standing upright with bend legs, circle one relatively straight arm backwards so that it travels across and behind the body until it circles near the hip. From that hip, generate a horizontal twisting punch while stepping forwards with the opposite foot. Then step back to return to the neutral position. Follow with the circle and punch on the opposite side. This exercise will aid coordination, bodily awareness and balance of control over dominant and non-dominant sides. It can become more complex by making use of the rear hand as a cover, pulling back on the opposite hip to the punch. Furthermore, the mover can clap in the neutral stance between each circle.

Squat and block

This movement comes from a more advanced sequence in Wing Chun, teaching the practitioner to deal with an emergency situation. Standing as with the other exercises, move down into a squatting position while shooting the hands down, crossing them at the wrists as if blocking something. Push up from the floor to straighten up while circling back up with the arms (repeated twice), returning to a basic triangular guard position with one hand slightly in front of the other. As with the previous movement, this exercise will heighten bodily control while helping people move from their centre.

Twist and chop

This set comes from a Wing Chun warm-up that tests people's mobility and upper-body flexibility. Trying to stay relatively still in the lower body, move from the waist while looking behind you, searching behind you with your eyes. Chop behind you with the nearest hand, using the rear hand as a supporting guide. Move from both sides, switching left to right, left to right, until you feel that you have worked out that region of the body. This exercise can aid muscle tone while assisting with one's posture.

Hand clasping

This exercise comes from George's ethnographies of Xilam and Taijiquan, which vary in their approach to opening and closing the hands in rapid succession. A gentle way of doing this comes from Taijiquan, which emphasises relaxing the shoulders and neck while raising the hands around shoulder height. The fingers are flicked out vigorously, and then the fists are grasped tight, as in a fist. Repeat this, paying attention to the correct technique so that the full range of motion is utilised. To make this more athletically demanding, as in Xilam, you can straighten your arms while opening and closing your hands for at least thirty seconds, before repeating this with the hands moved to the side and even above the head (or behind the body). This exercise will aid the mobility of the fingers, hands and wrists while aiding people to avoid repetitive strain injury (RSI) from excessive desk work.

Feet circling

This movement stems from George's learning of Wing Chun in various schools – two of which have been ethnographic field sites. Stand with your heels together, with the toes pointed out around forty-five degrees. Bend your legs and attempt to keep an upright, even posture, with both shoulders and hips pointing forwards in the same direction. Move one foot in a large, outwards circle, moving into the supporting foot and then away from it. If possible, keep a seamless motion without any starts or stops, while retaining the same height in your stationary position without wobbling. This exercise will aid balance – especially when performed with the eyes closed. Relaxed fists can be placed near the ribs, as in the original martial art.

Spinning plates

Also known as “holding a grain of rice”, this exercise is common in Chinese internal martial arts such as Baguazhang and Taijiquan. George encountered it in two such schools he has learned in, and it was also an exercise adopted by his old HEMA instructor, which indicates the cross-cultural nature of these exercises. Standing a shoulder-width apart with slightly bent, relaxed knees, move both hands behind the torso, with the palms facing up to the ceiling or sky. Then pull both hands around to the side, and then in front of the body, finishing by circling them above the head and then back to the starting point near the hips. Repeat for around one minute, or more if desired. This exercise can also be performed one-handed or using alternative hands, swapping each time. It is a challenge for hand-eye coordination, the brain and for spatial awareness, while offering some relief for tight shoulders.

Squat and kick

This is another Wing Chun preparatory exercise that begins to use martial technique. Squat with the hands behind the head, bending low, but not at ninety degrees. Then rise up, bringing one foot out to kick. This can be a low kick to or below your own knee height if needed. Ensure that

you remain relatively still in the upper body, making the most of the “shadowless kicks” principle of the art.

Balance on one leg

This exercise was taught to George by his Xilam instructor. Standing straight with the hands raised as in a “surrender” position, try to raise one leg up so that the knee is parallel with the hip and the foot is relaxed. The balancing leg should be slightly bent. If this exercise is manageable, try to close your eyes for a few seconds. It is likely that you will have a stronger side, indicating an imbalance or misalignment in the body.

Appendix 5. Video of basic MIMA movements

<https://cardiffmet.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=6768879a-528e-4426-8089-b2d100ac3728>