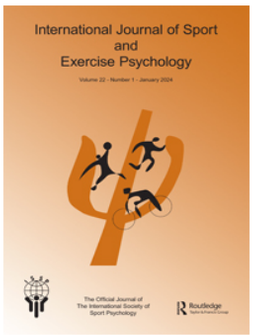

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International Society of Sport Psychology position stand: scientist practitioners

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ABSTRACT

There has been a long-standing discourse about science-driven practice, and related, the scientist practitioner, spanning more than 40 years. The International Society of Sport Psychology is devoting considerable attention to scientist practitioners within the recently established International Society of Sport Psychology Registry (ISSP-R) and Supervisor (ISSP-S) designations. The ISSP seeks to expand this discussion by (a) synthesising the literature, and (b) adopting a more geographically expansive outlook towards scientist practitioner knowledge. This position stand is presented in three sections. Section one is focused on the characteristics of the scientist practitioners. Section two exemplifies two approaches (Great Britain and China) in the application of scientist practitioner service. Section three includes six conclusions and recommendations towards the furtherance of this expansive discussion within the international field of sport psychology.

KEYWORDS

Science-driven practice; scientist practitioners; context-driven practice; applied sport psychology; competences

Introduction

The International Society of Sport Psychology's (ISSP) leadership has supported the development of positions stands on a wide range of topics, bridging research and practice. These contributions have included, but not been limited to, talent detection and sport development (Lidor et al., 2009), athletes' career transitions (Stambulova et al., 2009, 2021), cultural competence (Ryba et al., 2013), sport as a social mission (Schinke, Stambulova et al., 2016), athlete transnational mobility and acculturation (Ryba et al., 2018), athlete mental health (Schinke et al., 2020), and occupational health and safety for elite athletes (Schinke et al., 2021). The intention has been to stimulate a progressive

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agenda of discovery and application in the sport and exercise psychology community. The current position stand extends this tradition into a call for scientist practitioners.

Concepts such as position stands, position statements, consensus statements, and clinical guidelines, have a variety of meanings and thus, can be conflated (i.e., being viewed as one and the same). The American College of Sport Medicine (ACSM.org) has an evidence-based protocol to inform the development of their position stands. ACSM guidelines are used to gauge the strength of conceptual literature as well as individual studies and results through evidence-based best-practice guidelines. Contrarily, The Australian Psychological Society provides position statements to present views and recommendations on broader, time-urgent topics germane in our field, such as psychology and climate change. We have aligned with Aleksovska et al.'s (2021) vantage that position stands, consensus statements and guidelines should vary in purpose and robustness of evidence; that guidelines should be clinical best-practice guidelines based on a systematic review of intervention studies; and that it is time to reserve the terms position and consensus for distinct purposes. Where a position stand might be developed through convergence and co-authoring, it could be differentiated from a consensus statement, with the position stand representing a stance on a topic. The consensus statement can reflect the outcome of an experts' think tank exercise, where the emphasis is placed on practical application, such as those derived from the International Society of Sport Psychology World Think Tanks on elite athlete mental health (see Henriksen, Schinke, McCann et al., 2020; Henriksen, Schinke, Moesch et al., 2020). Inspired by calls for clarity and parameters in relation to each type of contribution, we suggest the following definition of a position stand be used by the ISSP in the current offering and thereafter: *An ISSP Position Stand is a published document adopted by the ISSP to communicate its specific beliefs and recommendations, promote discussion on emerging topics, provide an overview of scholarship that informs the topic, calls for further evidence, and is conceived and written by a working group of experts tasked by and under the oversight of the ISSP Managing Council's leadership*.

This position stand reflects the assigned authors' ambition to shed light on the convergence of science and practice, where one informs the other, contributing to holistic understanding and doing. While bridging the gap between science and practice has been a source of discussion in sport psychology for several years (see Martens, 1979, 1987 as two early examples), our authors find a field where science and practice are often bifurcated (Moore, 2007). There are scholars and scientists who devote much of their time to advancing knowledge through empirical and conceptual means in universities, and only sometimes demonstrate a deep experiential understanding of practice and the practical dilemmas found in working conditions. Simultaneously, the number of applied practitioners from clinical sport and exercise psychology and sport science is expanding rapidly. The employment of applied sport psychologists and mental performance consultants in Western Europe, North America, South America, and East Asia is now commonplace to the extent that most professional and Olympic sport organisations employ professionals to support athletes, coaches, and organisations in the psychological realm (Voelker, 2012). These practitioners are only sometimes informed by science and infrequently have the resources to stay abreast with emerging discoveries (Quartiroli et al., 2022). Nevertheless, we see evidence of people seeking to bridge the science–practice gap in the Association for Applied Sport Psychology's peer-reviewed journals,

comprised of the *Journal of Applied Sport Psychology* (n.d.), the *Journal of Sport Psychology in Action* (n.d.), and *Case Studies in Sport and Exercise Psychology* (n.d.) as well as in the *Journal of Clinical Sport Psychology* (n.d.). The *International Journal of Sport and Exercise Psychology* (n.d.), this journal, calls for increasing focus on a detailed application within accepted manuscripts.

The catalyst for this discussion is the profession's much-needed movement away from bifurcation. Professionals in sport and exercise psychology need not work in isolation, nor in silos. Our authors have adopted a structure comprised of three elements. In part one, we begin with the qualities and characteristics of a scientist practitioner. We suggest there is no single version of what such a professional might be, and that it will vary by location and zeitgeist. However, a breadth of potential qualities is proposed. These qualities can help guide in the formation of aspiring scientist practitioners. Part two will be used to contextualise science-bridging initiatives exemplified through two countries, the United Kingdom and China. Part three concludes with six conclusions and recommendations, revealing important points the authors identify as essential to the topic.

The current position stand was conceptualised and written by a geographically diverse group of professionals who undertake high-level research whilst also offering evidence-based support to elite athletes and coaches. The authors were hand chosen by the first and second authors. Each author has written in first-quartile journals; this was a necessity and assurance they understood and remained committed to emerging scientific knowledge. One must also be adept at parlaying vast knowledge into a practical realm. The belief is that having worked onsite at an international level, with consequent exposure to diverse international practices, has helped clarify practical demands, such as the barriers and solutions encountered by clients and those who support them in their psychology. The authorship is also intentionally multinational, comprised of five continents, with each representative having worked at successive Olympics in their respective nations, other than the final author. All but one of these authors are also currently working at very least part-time, in a university setting, advancing knowledge as they continue to practice applied sport psychology.

Qualities, roles, and competencies of scientist practitioners

While clear steps forward have been reported in "the development of practitioners' competences … as well as in the content and quality of their services" (Wylleman, 2019, p. 89), sport psychologists may still have a hard time finding literature on the characteristics of the scientist practitioner in sport psychology. Except for the isolated interviews (e.g., Wylleman, 2018) or articles related to the practice of the sport psychologist as scientist practitioner (e.g., Harwood, 2013, 2016), topics such as "scientist practitioner" or "scientist" are clear in their absence (e.g., Anshel, 2019; Schinke, McGannon et al., 2016). Using a broader scope on psychology publications relevant to the scientist practitioner model, several roles and expected characteristics are evident. Scientist practitioners are:

- trained as both scientist and practitioner in order to think scientifically, to have a scientific (questioning) attitude in all areas of professional activity and to have research and practice continually inform each other (e.g., Blair, 2010; Stricker, 2006);

- able to consume, evaluate and apply up-to-date theoretical and empirical advancements relevant to current best, evidence-based or empirically supported practice (e.g., Corrie & Lane, 2009; Kenkel & Peterson, 2010; Tanner & Danielson, 2007);
- have competences required for psychological investigation and intervention (including assessment, formulating and testing hypotheses, gathering and inferring data in search of evidence; weaving data from different sources into a coherent case conceptualisation; making use of evidence, clinical judgement and client's needs; using standardised and appropriate protocols for treatment and interventions; and continually evaluating treatment and intervention) (e.g., Blair, 2010; Corrie & Lane, 2009; Health and Care Professions Council, 2015; Lunt et al., 2015; Petersen, 2007; Tanner & Danielson, 2007);
- have a scientific viewpoint and research orientation in practice by studying scientifically the services provided as well as the results of those services (e.g., by collecting data from clients in the approach of an intervention case-study, the practice as laboratory; drawing on in-intervention evidence; American Psychological Association, 2022; Blair, 2010; Corrie & Lane, 2009; Lunt et al., 2015; Petersen, 2007; Stricker, 2006; Tanner & Danielson, 2007);
- reflect on, critique, contribute to, and bridge the science and professional practice of applied psychology (e.g., publish and disseminate practice-based ideas and evidence; translate research for professional practitioners, e.g., Blair, 2010; Corrie & Lane, 2009; Harwood, 2013, 2016; Lunt et al., 2015; Ryba et al., 2013; Schinke et al., 2015; Wylleman, 2018; Wylleman et al., 2009); and
- have the rigour for a robust, reflective, synthesised, and blended interaction between the science and practice of psychology (e.g., by demonstrating practical relevance in their research; by respecting the uniqueness of processes of practice not readily amenable to outcome measures, e.g., Blair, 2010; Hanley & Amos, 2017; Lunt et al., 2015; Petersen, 2007; Tanner & Danielson, 2007).

To allow for a more structured description of the characteristics related to the roles of scientist, practitioner, and their convergence, a competency approach can be used (Wylleman, 2019; Wylleman & Seiler, 2016). For example, the competency model presented by Kenkel and Peterson (2010) positions "research and evaluation" and "consultation and education" as two of seven core competencies for professional psychologists, each of which is described in terms of knowledge (K), skills (S), and abilities (A) (KSAs). As these KSAs are positioned at different levels of development, examples of competences for both core competencies will relate to the profile essential for psychological practice. While specifically developed for psychologists, both core competences also apply to sport scientists taking up the role of scientist practitioner in sport psychology.

Research and evaluation

The core competency "research and evaluation" reflects how psychologists are being trained in academic science and scientific in practice, sometimes referred to as the competency of "local (clinical) inquiry" (Trierweiler et al., 2010). The professional psychologist's task is "constantly to seek linkages between psychological science and the empirical realities of practice and to identify phenomena within the practice setting that are central to

the intervention and are potentially in need of scientific clarification" (Trierweiler et al., 2010, pp. 126–127). In this core competency, the first domain is "critical evaluation of research". Examples of competences include "maintenance and expansion of breadth and depth of knowledge on statistics and broader research design" (K), "ability to smoothly explain relevant professional research to a client" (S), and "incorporation of scientific attitudes and values in work as a psychologist" (A). The second domain "conducting and using research in applied settings" includes for example "understanding of how to build new practice methods and adjust interventions based on evidence" (K), "dissemination of scholarly findings to the professional community" (S), and "investment in the application of research findings in local clinical settings" (A). The third domain reflects the "ethics and professional competence", such as the "inclusion of diversity issues in the development, implementation, and interpretation of research" (K), "ability to function as a local clinical scientist in an applied setting" (S), and "commitment to the importance of research and evaluation in ongoing inquiry and lifelong learning" (A). In contrast to the academic scientist working in university laboratory, this "local scientist" emphasises:

> (a) being a generalist of knowledge and method, as opposed to a specialist; (b) focusing on local realities, in which data are gathered as they apply to a particular case and may be limited in the extent to which they generalize to other cases; and (c) developing an active inquiring mind as opposed to concentrating on technical expertise with scientific methods. (Trierweiler et al., 2010, p. 104)

Consultation and education

The second core competency "consultation and education" represents different psychological interventions: on the one hand, to consult by way of conducting a needs assessment and provide science recommendations for practice; and on the other hand, to provide psychoeducation via seminars or workshops, or taking up an academic role in higher education (Stanton, 2010). In practice, a psychologist may, if qualified, use a combination of both types of interventions. The first domain "knowledge of evidence-based theories, models, and interventions" relates to, for example, knowledge of how to select and apply appropriate consultation and education models and evidence-based interventions, considering contextual and diversity variables' (K), "the ability to recognize situations in which consultation and/or education is appropriate" (S), and "motivation to sustain lifelong learning about methods/models of consultation and education" (A). The second domain "integration of research and evaluation" includes "detailed knowledge of individual and programmatic outcome of research and evaluation methods in consultation and education" (K), "ability to provide rationale based in scientific principles and theoretical understanding and experience for consultation interventions" (S), and "a willingness to research and adopt innovative approaches to consultation and education" (A). The third domain "problem solving and intervention" refers, among others, to "knowledge of the roles and methods of consultation and education in seeking resolutions of social problems" (K), "the ability to apply consultation and education to social issues for improving individual, small group, organizational, and societal functioning", and "motivation to use consultation and education as tools of psychology in the public interest, in social responsibility, and in addressing social problems" (A). The fourth domain

"performing consultation and education roles and building relationships" includes competences such as "basic understanding of the application of consultation and education theory to specific human contexts" (K), "ability to engage in a collaborative consultative relationship with others in psychology and other disciplines" (S), and "confidence in one's ability to function in the role of consultant or educator" (A). The fifth and final domain "ethical and professional practice" is represented by "knowledge of the complexities of consultation and education, including ethical and legal issues" (K), "skill in the appropriate recognition and application of ethical and legal issues in education and consultation" (S), and "recognition of the importance of lifelong education and training and quality improvement in the maintenance of competence in education and consultation practice" (A). As this competency-based approach uses developmental achievement levels and behavioural anchors to describe each core competency for different stages in a professional psychologist's formation, it offers insight into the requirements for the education and training of scientist practitioners, professional psychologists or sport scientists specialised in sport psychology, alike (Hutter et al., 2016; Wylleman, 2019).

The education and training of the scientist practitioner

To ensure high-quality service provision, professional psychologists need to be educated and trained in the development and use of their competencies as scientist practitioners. As a "learning process should be explicitly related to the anticipated outcomes" (Peterson, 2010, p. 57), a first requirement is that study programmes directly relate to the professional practice as scientist practitioner. Allowing for a dual emphasis on science and practice, programmes should not only give equal weight, but also ensure that both continually inform each other in learning outcomes (Blair, 2010). This approach is relevant as study programmes may have been developed with the perspective that "If you want to train researchers, have them do research. If you want to train practitioners, have them do practice" (Peterson, 2010, p. 57), or put in sporting terms, "if we want to help people to learn tennis, we don't tell them to spend half their time golfing" (Peterson, 2010, p. 57).

Study programmes need not only adopt and adhere to the culture of the scientist practitioner model. The second requirement consists of providing knowledge relevant to scientist practitioners, such as courses on the history of the scientist practitioner model and on the integration of research and practice (Tanner & Danielson, 2007). Programmes also need to provide students with adequate and sufficient opportunities for supervised practice. The programming of practicums, external projects, and consultation experiences in real-life situations would allow students to practice and develop specific scientist practitioner competencies (Stricker, 2006). The limited access to practice situations for students because of some reasons (e.g., client trust in inexperienced student), and the experienced consultants' reluctance to incorporate inexperienced students into their practice may be a challenge for many programmes. Consequently, study programmes may skew students' practice towards offering the more easily organised practice in psychoeducation, namely psychological interventions provided via workshops, seminars, or masterclasses aimed at enhancing individuals and groups' knowledge, skills, and attitudes (Kenkel & Peterson, 2010). As this type of psychological intervention is different from psychological consultation, providing students only opportunities for psychoeducation

can limit their consultation competencies. A similar skewing effect may occur in doctoral programmes by directing or even restricting students to research competencies and by neglecting practitioner competencies.

The education and training of psychologists as scientist practitioners are not only related to the content of study programmes, but perhaps more so to the competence of the faculty members responsible for the study programmes. The challenge for faculty is not only to be committed to the scientist practitioner model, but to have the competencies to continuously link research and practice in their own continuous academic career and teaching. This will also be crucial to create in students a continued interest and motivation for this dual "science practice" emphasis with equal interest in research and practice. Study programmes are challenged by the fact that there are (too) few – if any in some programmes – faculty members who are well-trained in and involved in both competences daily. The restricted number of these experts may be related to a university's or faculty's lack of vision in recruitment due to not acknowledging such professionals as full faculty members, not recognising the added value of these professionals and their expertise to faculty programmes and research, not knowing what the required profile is for their recruitment in relation to the vastness of the domain, or not being able or willing to allow faculty members to invest part of their academic appointment in practice as service to the community (e.g., Harwood, 2016). Furthermore, there is also a strong value placed on publishing in top quartile journals, gaining strong indices because of extensive citing, and high-profile grantsmanship over a balanced approach where practical competences are placed on equal footing to science, thus equating with the generation of scientist practitioners through formal learning. The question is then raised whether universities should be responsible for the "knowing" (i.e., having the knowledge without the required skills and attitude) as well as for the "knowing how" (i.e., having the knowledge and being able to apply it with the required attitude), or whether this latter aspect should be the responsibility of professional associations (e.g., Wylleman, 2019; Wylleman & Seiler, 2016).

The practice of the scientist practitioner

A first requirement for a scientist practitioner is to practice with "the questioning attitude of the scientist" (Stricker, 2006, p. 5), allowing for "a substantial and dynamic interplay between research and practice" (Blair, 2010, p. 20). As Lane and Corrie (2006) proposed, this would mean (a) thinking, including judging, reasoning, making decisions, and problem-solving; (b) weaving data from different sources into a coherent formulation or case conceptualisation; (c) acting effectively by devising and implementing specific interventions strategies, designing solutions and innovating creatively on a case-by-case basis; and (d) evaluating and critiquing one's own work by using psychological science and evidence in addition to relevant reading, personal audits, and use of supervision and training (i.e., reflective practice; see Cropley et al., 2010). This will not only improve the accuracy and consistency of diagnostic procedures, the development of more proficient approaches to treatment, consumer satisfaction, and the domain's credibility, but also, and perhaps most importantly, allow the scientist practitioner to "take a step back from the emotive-relationship-based aspects of applied psychology" (Petersen, 2007, p. 763). As they may find themselves challenged with a continuous

choice between the constrictive labels of "researcher" and of "practitioner", scientist practitioners need to be able to ensure an integration and dynamic interplay between science and practice into their professional services rather than striving for a 50–50-time investment in each separately (Blair, 2010; Corrie & Lane, 2009; Miles & Fassinger, 2021).

Given research is an inherent part of the professional psychologist's practice, a third requirement for scientist practitioners is to remain informed about the theoretical and empirical advancements within their field (Corrie & Lane, 2009; Harwood, 2013; Stricker, 2006). That is, literature on applied research is particularly relevant and often emanates from qualitative studies with a small number of participants or case studies. This observation is perhaps due to quantitative measurements or randomised control trials not always being applicable directly to the interventions provided or to certain aspects of it, such as the practitioner's empathic understanding of the client's needs, the emotional depth of a session, and the complexity of the therapeutic process (Blair, 2010).

As scientist practitioners need to keep up to date with emerging scholarship, the fourth requirement is to have the resources or time necessary to delve into and analyse new literature (Stricker, 2006). To cope with what, for some, maybe a real challenge, it is suggested to see the scientist practitioner model not (only) in terms of individual psychologists but rather as a group or team of professional psychologists working together, meeting regularly, and sharing information relating to interventions, results, and new resources (Blair, 2010). Exchanges of knowledge may be organised via local or regional meetings joining professionals from different consultancy practices, clinical centres, or sport organisations, via online meetings, or in parallel to other meetings which bring together our professionals. This collaborative work may also allow for discussions on how to view and apply the scientist practitioner model and on its relationship to variations or other models of practice (e.g., evidence-based, empirically supported, practice-to-science, research-directed, research-informed, clinical scientist, empirically supported; see Blair, 2010; Hanley & Amos, 2017; Harwood, 2016; Jarvis, 1999; Stricker, 2006).

Scientist practitioners are also expected to disseminate information back to the professional community to "advance pragmatic knowledge or theory refinement" (Harwood, 2016, p. 229). Dissemination could include topics such as applied experiences, required and acquired competencies, professional development (e.g., developmental stages and transitions), identity and values adhered to, and the effectiveness in conducting or measuring (the effect of) interventions (Blair, 2010; Corrie & Lane, 2009; Harwood, 2013, 2016; Wylleman, 2018). In view of the diversity in practice and clientele, it is important for scientist practitioners to also inform the broader public (and media) on their roles, their professional approaches, the added-value of the scientist practitioner model. Considering this requirement of dissemination as part of a collaborative process with colleagues as described earlier can assist scientist practitioners to cope with the (self-imposed) restrictions on available time, lack of resources, or lack of competencies.

Contextualised science to practice: Western and Eastern examples

In this section, the authors aim to offer insights from the translation of science to practice within the United Kingdom's (UK) and China's high-performance environments of

Olympic sport. Scientist practitioners within our discipline have noted their frustration with the dominance of practice centred exclusively on psychological skills training in elite sport. The individuals who have been most vociferous are scientist practitioners operating "at the coalface" of both academia and applied practice (e.g., Fletcher & Wagstaff, 2009; Martin, 2019; Mellalieu, 2017; Wagstaff & Hays, 2020). The main arguments offered by these professionals relate to uncertainty regarding the vitality and sustainability of the profession and the extent to which we provide rich science–practice value within high-performance contexts. A regular target of these professionals' frustration has been approaches that idealise psychological skills training at the expense of integrative approaches that incorporate a suite of practice principles and draw respectively from performance enhancement, clinical sport psychology, organisational sport psychology, and cultural sport psychology.

United Kingdom (UK)

In this example, Chris Wagstaff considers the translation of science to practice within the United Kingdom (UK) high-performance environment. In the UK, the science–practice landscape shifted, with professionals increasingly recognising the value of approaches that seriously consider the integration of social and psychological factors which might influence wellbeing and performance (cf. Fletcher & Wagstaff, 2009; Sly et al., 2020; Wagstaff & Hays, 2020). Indeed, as former heads of the English Institute of Sport's (EIS) Performance Psychology team, Kate Hays and I (Chris Wagstaff) recently called on professionals to devote more attention to developing competencies in team, systemic and organisational working. We noted that this should include sport psychologists:

> having to demonstrate an appreciation and working knowledge of advising on the development of values-driven and psychological safe environments; social norms, subgroups, and cliques; organisational issues; conflict management; organisational culture, change, and climate; leadership development and succession planning; engagement and identity; team dynamics; and working in and supporting complex and adaptive systems. Additionally, other areas of valuable competence development, aligned with contemporary service provision, include pressure training, supporting peers and other support staff regarding personal-professional life balance, job insecurity, extensive travel, professional development, referral, self-care, multidisciplinary case formulation, psychological load monitoring, decision-making, and coach-mentoring skills. (Wagstaff & Hays, 2020, p. 35)

We also encouraged practice qualification pathways to embed such competencies to better inform "candidates on what 'the job' is really like" (Wagstaff & Hays, 2020, p. 35). What is clear from the list above is that some of these areas of competence have received substantial scientific attention, some could be described as "emerging", and others remain in their scientific infancy. While caution is clearly required where only embryonic scientific knowledge exists, it is incumbent on those who practice in high-performance sport to push the boundaries of what our field can offer. While it is beyond the scope of this example to unpack the scientific advancements related to each area of competence, I will attempt to detail some of the science–practice work undertaken in the UK system that might best be labelled under the rubric of organisational sport psychology.

Organisational sport psychology is a subfield of sport psychology that is dedicated to better understanding individual behaviour and social processes in sport organisations to

promote "organisational functioning" (Wagstaff, 2019, p. 135). Fundamentally, the vision I have regularly espoused for organisational sport psychology has been to develop sport systems that are psychologically informed, in which people are enabled to thrive by communities of people within sport attending to individual, team, organisational, and systemic phenomena (cf. Wagstaff, 2019). From a science perspective, scholarly attention to organisational sport psychology has resulted in programmes of research spanning organisational functioning, leadership and management, organisational stress, organisational change, organisational culture, organisational resilience, organisational sensemaking during adversity, developing thriving environments, and, to some extent, talent development environments in sport, managing abuse and duty of care practices in sport systems, and the identity of and professional development within the field of sport psychology. From a practice perspective, much of this work has changed the practices and policy of sport organisations within the Olympic and Paralympic sport system in the UK (see, e.g., Fasey et al., 2021; Meckbach et al., 2022; Passaportis et al., 2022). Moreover, a review by Wagstaff and Burton-Wylie (2018) provided the scholarly rationale for adaptations to the UK Sport's Cultural Health Check (UK Sport, 2020). Nevertheless, readers will likely appreciate the common narrative tension between performance and wellbeing when attempting to develop psychologically informed high-performance systems. These tensions are typical and mean that "at the coalface" one must navigate complex systemic dynamics and effectively apply the knowledge that is emerging from organisational sport psychology. This navigation, and the fact that much of the extant published work remains exploratory, conceptually, or measurement focused, makes direct science–practice translation from a single line of inquiry within organisational sport psychology complex and challenging. Despite this complexity and in recognition of its existence, the examples offered here of science–practice are culturally, contextually, and historically bound.

For Team GB, the Rio Olympic cycle was bookended by high-profile cultural challenges characterised by independent reviews into inappropriate behaviour and systemic abuse. These crises offered leaders within the system an opportunity to reflect on the psychosocial strategy in the high-performance system. During the period 2016–2022, UK Sport (UKS; the funding body for Olympic and Paralympic sport in the UK) has transitioned from their successful, and yet, now divisive "No Compromise" strategy to one of "Medals and More" and "Winning Well". During this same period, a Culture, Leadership, and Talent Development team that served all 57 funded sports in the UK was established. As part of this strategic shift, a Culture Review process was also developed to attend to the culture in each World Class Program (i.e., the performance subsystem of each national sport organisation). Moreover, for the current Paris cycle, "care" has been adopted as a core value by the EIS, who are the science, medicine, and technology team behind Team GB. This Care value was added to the pre-existing organisational values of Collaboration, Innovation and Excellence. The research on organisational sport psychology has been central to the policy development and implementation of initiatives shaping this strategy shift.

In parallel to the emerging science and practice developments, early in the Tokyo Olympic cycle, a UK Government duty of care in sport report (Grey-Thompson, 2017) was published which made multiple references to mental health challenges within "World Class Programs (WCPs)" and later in the year, the first UK Sport's (UKS) culture

review identified 25% of athletes as being dissatisfied with measures taken to optimise their mental health (MH). These observations were consistent with empirical developments throughout the Tokyo cycle, during which a substantial body of work has emerged from around the world on mental health in sport (see for a review, Vella et al., 2021) and reflective of an international shift to more holistic models of sport psychology service delivery (see Diment et al., 2020; Schinke et al., 2018). To respond to the practice and science developments regarding mental health, a Mental Health Steering Group and later a Mental Health Team were assembled to deliver key components of a mental health strategy across the UK system. This team developed and delivered an educational programme across all funded sports, training over 300 people within the system to be Mental Health Champions. Concurrently, the UKS culture and leadership was assembled to offer science–practice knowledge across the high-performance system during the Tokyo cycle, and drew on researcher-practitioner expertise, appointing sport psychologists with expertise in resilience (Dr. James Bell), organisational sport psychology (Dr. Chris Wagstaff) and leadership (Dr. Calum Arthur) to an advisory panel. Through links with the University of Portsmouth's Professional Doctorate programme, a funded programme of research has also been undertaken dedicated to culture in elite sport and inappropriate behaviours in such contexts (see Wagstaff & Burton-Wylie, 2018). Further, we recently undertook a desk-based review of the first four years of the culture review, making recommendations for the Paris Olympic cycle, which has led to further iteration of culture policy and practice across the UK high-performance system.

In addition to the confluence of research and practice developments relating to mental health and culture and leadership within the UK system, two pre-existing EIS services were also significantly expanded in size and scope during the Tokyo cycle: Performance Lifestyle and Performance Psychology. The Performance Lifestyle (PL) team grew during the Tokyo cycle to over 40 practitioners. The work of the PL service has become more integrated within a psychosocial interdisciplinary team and represents the British Career Assistance Program. The aim of the service is to drive and deliver world-leading holistic athlete support and development for the benefit of both the person and the performer as they move on to, through and beyond the World Class Program. The pillars of this service include mental health and wellbeing, learning and development, career development, managing transitions, education and qualifications, and financial health. Two of these pillars are heavily informed by the research on athletic career transitions (e.g., Lavallee, 2019) and foster mental health and wellbeing strategy that attends to individuals' experience, their wider support system, and the broader environment to inform coherent, consistent, and holistic intervention plans (e.g., Bickley et al., 2016). During the same cycle, there was also a significant increase in the number of EIS performance psychologists (from 15 in 2016 to 33 in 2022), with a stronger emphasis on providing psychological support to promote thriving (see Brown et al., 2018) among multiple stakeholders (e.g., the Senior Leadership Team, support staff, coaches, athletes) using an organisational or systems approach under the strategic title Project Thrive.

The EIS performance psychology team's flagship Project Thrive strategy for the Tokyo cycle reflected an integrated whole systems approach with the aim of helping WCPs facilitate the best version of their "performers" when it counts, to optimise positive mental health alongside performance, to increase knowledge sharing, alignment, and access across the high-performance system. For the first time, all stakeholders – not just athletes

– could access psychological and mental health support, and an organisational or system, focus became the priority in place of the hitherto individual focus. To elaborate, using the scientific knowledge developed from lines of inquiry within organisational sport psychology, the vision for the EIS performance psychology team for the Tokyo cycle was, "to facilitate the creation of psychologically underpinned and sustainable high-performance environments that develop the person as well as the performer to thrive" (EIS, 2018).

The Project Thrive vision was approached with two key departures from traditional sport psychology science–practice at the individual level. First, through the development of interdisciplinary teams (including PL, MH, performance psychology, and culture and leadership services), a holistic support offer was available. Second, this integrated service provision was not targeted at athletes but at "the system". That is, in line with principles of organisational sport psychology, the system, not the athlete was the client. In practice, this meant that "problematic" or "talented but challenging" (Bickley et al., 2016) individuals were not labelled and discarded, as they might have in previous cycles, but efforts were made to promote a shared understanding of each individual's story, scripts, presentation, and relational influences. We sought to understand the person in context. That is, using this vision, the team developed 10 "thrive" principles that were used to frame the psychosocial service delivery into sports. It is important to note that these principles were guiding characteristics of *the service* and enabled practitioners to bring their own individuation to their delivery. To ensure science–practice coherence, four programmes of research have been supported by the English Institute of Sport during the Tokyo cycle relevant to the Project Thrive strategy, which have been released for publication at this time: thriving in Olympic and Paralympic sport (e.g., Passaportis et al., 2022); supporting women to thrive in elite sport (e.g., Levi et al., 2022), culture and inappropriate behaviours in World Class Programs (Wagstaff & Burton-Wylie, 2018), and organisational resilience in elite sport (Fasey et al., 2021). Moreover, each principle had a theoretical and empirical foundation from performance contexts. The 10 pillars were: thriving is everyone's business; success is driven by a process focus aligned with a higher purpose; personal values drive behaviour; psychological safety promotes collaboration and risk-taking (challenge perceptions); uniqueness and strengths should be embraced and optimised; the performance culture is determined by clear and unambiguous standards; shared understanding and language promote consistent communication; performance environments require an appropriate balance of challenge and support; purposeful experience and reflection evolve human performance, and; failing smart accelerates learning and promotes growth. Reflecting on this organisational or system-wide strategy, I am reminded that there is a strong performance focus, but also that any performance enhancement work was dependent on the 10 guiding principles first being in place. The EIS practitioners facilitated opportunities through the collaboration for World Class Programs to develop their athletes and staff holistically, helping shape values-driven cultural environments that will hopefully be sustainable for future generations.

China

In this example, Gangyan Si considered the emergence of scientist practitioners within China's elite sport environment. Within China, there is a historical backdrop to the

science-driven practice of sport psychologists. This process first began with a focus on Olympic services. The Chinese Olympic Committee's membership was recognised by the International Olympic Committee in 1979, upon which the Chinese athletes rejoined the Summer and Winter Olympics, necessitating sport psychology services. Since then, Chinese sports psychology research has been taking the urgent needs of the Olympic practice in China as the main direction, trying to drive the development of sport psychology practice and service. Talent identification and sport-related cognitions are two main research topics in different historical stages.

From the early 1980s to the mid-1990s, the focus of research in sport psychology was primarily on talent identification. The movement behind talent identification was based on the belief that sporting abilities and potentials are innate, but the environment in which individuals are raised can also shape their future sporting success. Characteristics of the central nervous system, personality, intelligence, emotional stability, physical and mental toughness, and the age at which formal training starts were considered important in talent identification. The outcomes of these efforts have been encouraging and include the development of referential criteria and assessment tools for talent identification. Chinese researchers led by Qiu (e.g., Cox & Qiu, 1993) completed several empirical investigations in basketball, volleyball, athletics, swimming, gymnastics, and rowing to test their theories and methodologies. The aim of these investigations was to explore elite athletes' personality traits and cognitive intelligence to predict their future achievements.

By the second half of the 1990s, sport psychology researchers in China began to investigate cognitions (sport-related thinking) in sport. Liang (2007) confirmed the existence of sport-specific cognitions in athletes across a wide variety of sports, spanning badminton, baseball, fencing, handball, and table tennis. Liang went on to conclude that cognitions in competitive sports are characterised by four special features, namely, a narrowing of cognitive processing resources, the inability to think logically during competition, the inability to process images, and the need for speedy decision-making. This type of study has important implications for the sport psychology practice and service with Chinese elite athletes.

Under the dual requirements of the Chinese psychology community emphasising scientific training and the General Administration of Sport of China (a government agency) focusing on practical services, the training of Chinese applied sport psychology professionals integrated a mode of "practitioner-scholar" from the very beginning, which emphasised practical competence under the support of scientific theory and research (Qiu et al., 2003). This is somewhat different from the popular "scientist practitioner" training model in mainstream psychology at the time, which emphasised, equally, training the capacity of both scientific research and clinical practice in psychology (Baker & Benjamin, 2000). The training curriculum was a combination of applied psychology and sports science, highlighting applied ability training under the guidance of theory, including internship requirements in the undergraduate and master levels. Chinese sport psychology also started providing services to elite Chinese athletes in the late 1980s and gradually accumulated the expertise and experience in professional training and practical services (Si et al., 2010).

China won the bid to host the 2008 Olympic Games in 2001, which further increased the need for sport psychology services; it also accelerated the advancement of Chinese sport psychology into the research and application stage (Si et al., 2016). On the one

hand, the development of Chinese sport psychology was greatly influenced by western research and applications that adopted an evidence-based model. Furthermore, Chinese sport psychologists began to accumulate applied research evidence of their own (e.g., Ding et al., 2002; Sun et al., 2020; Zhang & Li, 2019; Zhong et al., 2009; Zhu, 2006) in terms of sport psychology services to elite athletes. Two areas of research advanced were the indigenous mental training models and on-field psychological support to athletes (Liu, 2001; Si, 2006; Zhang & Zhang, 2011). Based on their practice and first-hand data, Chinese sports psychologists empirically constructed the mental training models (see the part below) of Chinese athletes and the framework of providing on-field psychological support for athletes' training and competition (Si, 2003). The professional cultivation of Chinese sport psychology thus turned to the mode of "evidence-based practice" in preparation for the 2008 Beijing Olympic Games. Though the term "evidence-based practice" was not distinctly used at the 2006 national conference of sport psychology, a milestone conference in the development of sport psychology Olympic service in China, explicit efforts were made in this direction by the conference, such as introducing the current knowledge informed by applied research, emphasising the evaluable effectiveness of psychological services under the Chinese culture and the Whole-Nation Sport System (CWNS), and promoting the use of idiographic approaches such as single-case designs and case study in practice (Si, conference working records, 19 October 2006).

The quality of training in "evidence-based practice" had been supported and guaranteed in the following ways. First, under the cooperation of the Chinese Sport Psychology Association and the General Administration of Sport of China, a training seminar for sport psychology consultants was held annually from 2005 to 2008 to learn the advanced international research evidence and theories as well as to promote the Chinese local research results and theoretical models such as Liu Shuhui's Mental Construction Framework (Liu, 2001) and Si Gangyan's Adversity Coping Framework (Si, 2006). Since both mental training frameworks were based on years of work with top Chinese athletes, the relevant discussions and exchanges in the training seminars had a great impact and produced systematic application feedback among Chinese colleagues. Second, the Chinese sport psychology consultant certification system was launched and the first batch of 22 sport psychology consultant experts was certified in July 2007 for building an industry standardisation. Third, working with the international sports psychology communities to enhance hands-on service training in evidence-based practice: 4 American experts were invited to lecture in the national conference of sport psychology in Wuhan in July 2006 and 11 experts from the European Federation of Sport Psychology (FEPSAC) and the Forum of Applied Sport psychologists in Topsport (FAST) (Wylleman et al., 2009) gave seminars and workshops in a national training course in Tianjin in March 2008, furthering a science–practice connection. After the 2008 Beijing Olympics, one research team conducted interviews with 15 experts who provided sport psychology services to Chinese Olympic athletes. From the research, it could be seen that these experts' work aligned with "evidence-based practice" requirements. For example, 10 experts said that they used different psychological counselling and training theories (e.g., REBT, systematic PST) to guide their work and 5 experts mentioned that they used local sports psychology models (e.g., Liu's Mental Construction Framework, Si's Adversity Coping Framework) to help solve athletes' psychological issues (Si & Zhang, 2012). These interviewed experts integrated the best available research evidence with practical expertise to guide their

services, whilst integrating characteristics of the Chinese culture and sport system (Si & Zhang, 2012).

China's successful bid for the 2022 Beijing Winter Olympics in 2015 gave Chinese colleagues further momentum to develop sports psychology services based on evidence-based practice. The Chinese Sport Psychology Association held seminars after each summer Olympic Games in 2004, 2008, 2012, 2016, and 2021 (Zhang et al., 2021), published a series of research reports on psychological services and sought to develop the knowledge and evidence of effective work. Chinese sport psychology professionals followed this expanding evidence from international and domestic research and practices to provide professional services for Chinese athletes participating in the most recent Olympic and Paralympic Winter Games (see Wei et al., 2022; Zhang, 2022; Zhang et al., 2021).

An emerging working area of applied sports psychology in China pertains to athletes' mental health (Zhang et al., 2021). Sport psychology researchers have recently explored the mental health status of Chinese athletes and preliminary evidence has been established via quantitative (e.g., Yang, 2015) and qualitative research (e.g., Yan, 2020). Taking the unique working mechanism of the CWNS into consideration, a national/provincial training centre-based mental health management framework has been proposed and undergone preliminary initiation (Si et al., 2021). The resulting evidence-based practice has also provided supportive evidence for Chinese Government policy. The Ministry of Science and Technology of the State set up an important project "the mental health protection of Winter Olympic athletes" in 2020 to support Chinese athletes who attend the 2022 Beijing Winter Olympics. These progressions in science practice convergence bring us to the present.

Bridging the science–practice gap is a contextual project

The contextualisation directly above provides local examples of science–practice bridging (Stambulova & Schinke, 2017). Both examples demonstrate the interaction between societal needs, the production of research-based knowledge, applied efforts, and further investigation. When considering the two contexts, there are similarities and differences. In both examples, the bridging of science and practice was informed by domestic questions, tied to zeitgeist in sport systems and government initiatives. In the UK, an increasing focus in the scientific community on organisational psychology along with the disclosure of unethical practices in elite sport converged to stimulate initiatives culminating in a new science-based knowledge of high-performance organisations. These initiatives undoubtedly reflect the growing popularity of safe sport. In China, the Whole-Nation Sport System provided the backdrop for the education of practitioners, and specific challenges stimulated new research initiatives furthering practice, such as the evolutions from talent development to service models. From what appears to be localised organic movements towards scientist practitioners, there are takeaways in the form of conclusions and recommendations.

Conclusions and recommendations

It becomes clearer that scientist practitioners should not be described in terms of a single and distinct type of professional identity or way of working but rather as encompassing a

broad range of practice and values amongst practitioners (Lane & Corrie, 2006). This is also the case for sport psychologists who can be active in research, teaching, and/or consultancy – professional contexts characterised with "many contextual, motivational, and resource constraints to living up to the prerequisites of being a scientist-practitioner" (Harwood, 2016, p. 229). In support of the development and practice of scientist practitioners, we offer six synthesised points:

(1) A consensus in sport psychology must be established on the application of the scientist practitioner model in action. The strength of the scientist practitioner model is that it provides information and methodological rigour that practitioners can use to negotiate the ever-changing waters of psychological intervention (Corrie & Lane, 2009). This changing landscape may lead us to work towards a unified view of and approach to the professional identity and competence profile of the scientist practitioner and its relation to alternatives, variations of, or complementary professional identities, such as the dual role of scientist and practitioner, applied researcher, practitioner-scholar, practitioner-researcher, empirically support practitioner, scientifically trained practitioner, local clinical scientist, researcher-practitioner, research-informed practitioner, reflective practitioner, scientist practitioner-trained psychologist, research-directed practitioner, and evidence-based practitioner (Blair, 2010; Hanley & Amos, 2017; Harwood, 2016; Jarvis, 1999; Kenkel & Peterson, 2010; Miles & Fassinger, 2021; Petersen, 2007; Stricker, 2006; see also Quartiroli et al., 2021). There is a need to clarify whether each of these identities are based on a specific model, are clearly distinctive from each other, or are in fact (strongly) interrelated. For example, if students would generally enter a psychology programme because they want to provide support and intervene, practitioner-scientist could be found to be more appropriate than scientist practitioner (Strawbridge & Woolfe, 2003). This leads into the question whether both are, in fact, not interchangeable, or whether the sequencing reflects a real need for priority or for different competences, interests, or even professional identities.
(2) There is a need for universities to provide study programmes and faculty members with their required expertise to teach, guide, support, and evaluate students. Study programmes should ensure the development of competencies directly relevant to the scientist practitioner's professional role, built on an equal valuing of scientific and practical competences. In line with the Harwood's (2016) sentiments, this development should not only include the "know" (i.e., factual knowledge) and the "know-how" (i.e., interpreting facts and knowing how to apply such knowledge to a given situation), but also the "shows how" (i.e., demonstrating the application of knowledge and related technical skills in a simulation or practice setting). Harwood (2016) proposed that faculty members should ensure knowledge relevant to real-world practice and required competencies, knowledge on sport sciences, demonstration of skills related to counselling and interpersonal management, case-based practice, role play and observations in safe learning environments (e.g., use of video's), experiences of working in an interdisciplinary support team, and not being out of touch with practice. At the same time, Harwood recommended that universities place other demands on these faculty members regarding research, administration, or committee work as compared with scientists. In ensuring high-quality study programmes, universities

should also acknowledge the role of, and allow for, contributions from actors directly relevant for the education and practice of scientist practitioners. These include sport psychology organisations, professional psychology associations, and multinational and national organisations (Tenenbaum et al., 2003; Wylleman, 2019; Wylleman et al., 2019; Wylleman & Seiler, 2016). Finally, in their staff performance reviews, universities should include criteria related to applied work and expertise. Currently, the performance reviews of faculty are often limited to measures of scientific production (scientific papers and citation indices) and funding. Recognising in-depth knowledge of applied work would allow scientist practitioners and educators to devote more attention to practical work, thus bringing practical experiences to teaching and to ensuing scientific discovery.

(3) Following from point two above, we suggest that applied expertise, such as contextual knowledge, be integrated into research projects more directly and centrally, just as scientific trends be integrated into intervention strategies. The exchange of science and practice is one of reciprocity. The integration of practicality should be considered in the formation of research topics, the crafting of ensuing questions, the generation of participant friendly data collection strategies, emic approaches to analysis from the vantage of "knowing" in place of "knowing of", and practitioner and participant friendly presentations of findings. Not always can renowned international scholars with extensive publication and grantsmanship track records and limited frontline exposure be highly experienced practitioners or understanding of pressing issues to their targeted population at a given time, within their regions and beyond. Therefore, we advocate for integrated research teams, comprised of scientists, practitioners, and professionals who balance both roles.

(4) Programmes for the continued professional development (CPD) of scientist practitioners should be developed worldwide. This CPD should focus on providing information on innovations and newly developed methods (within methodologies when appropriate) in practice and in scientific research, updated knowledge and competencies (incl. information on forms of practice, use of procedures and tools which have been shown to lack validity), providing a forum for intradisciplinary (i.e., among psychologists) and interdisciplinary (i.e., with other sport scientists and practitioners) exchanges, and allow for a (re-)introduction to pre-requisite skills for effective practice and local scientific inquiry. A specific online database or website could allow for information and tools (e.g., on practice, research, teaching) to be made available, while providing participants with tutorials, short videos and podcasts, and results from applied research that investigates the interventions of scientist practitioners in situ (e.g., Blair, 2010). As knowledge, skills and attitudes can have a different value depending on the stage in a scientist practitioner's career (Harwood, 2016; Skovholt & Rønnestad, 1995; Wylleman et al., 2009), it is important to differentiate the content and approach of CPD for novice or experienced practitioners.

(5) A regular dissemination of information to the professional community could be enhanced with products that are less time-consuming for scientist practitioners. Journals could allow for articles and/or online videos and podcasts based on interviews with scientist practitioner sport psychologists, or for one or more special issues on aspects related to the scientist practitioner model (e.g., competencies and values, career development, the perspective of significant actors on the role and functioning

of scientist practitioners, short case-study reports). Conferences could also include in their programmes, at least one keynote speaker from the vantage of being a scientist practitioner (not necessarily restricted to the field of sport psychology), more round-tables, debate sessions, or one-on-one interviews with scientist practitioner sport psychologists within and across regions to further knowledge relating to this subject area and professional formation.

(6) Discussions related to scientist practitioners must also integrate the notion of context-driven practice (Schinke & Stambulova, 2017; see also Stambulova & Schinke, 2017). The science to practice reciprocal relationship occurs within sport systems, as evidenced by the examples of the United Kingdom and China, and they extend to the breadth of countries where the co-authors reside and work. Therefore, discussions, educational offerings, and empirical explorations of such approaches must be contextualised as opposed to being considered as universal notions (Ryba et al., 2013). The endorsement and generation of these diverse professionals is necessary worldwide. Yet, how they might work effectively will, in part, be influenced by factors such as their centralisation, location, national culture, and zeitgeist (Schinke & Hanrahan, 2009). Hence, approaches are equally tied to "the when" as "the who". These ideas, in keeping with recommendation four, should then be shared during international conferences, during exchanges of professionals, and in professional meetings. The intention would be to expand upon the possibilities of professional formation and continuing education, whilst correctly affirming that there is no singular approach informed by one region and imposed on another in the generation of scientist practitioners.

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