

Title page

Title: Exploration of contributing factors to mental health in workers and students

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## **Preface**

This critical appraisal is original and contains independent work by the author, Yasuhiro Kotera. The published works contain original works by the author, Yasuhiro Kotera, as well as co-authored works as named in the publications.

## **Acknowledgements**

With many thanks and gratitude for the support of my director of studies, Associate Professor Sigrid Lipka, and my supervisors, Associate Professor William Van Gordon and Professor David Sheffield.

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## Abstract

Having worked in the field of human resources, my publications focused on mental health and neuro-linguistic programming (NLP). Poor mental health has been reported among workers and university students in the United Kingdom (UK). The costs of poor work mental health are estimated to be £87 billion annually in the UK. In particular, hospitality workers, who comprise 7% of the country's workforce, are known to suffer from poor mental health. Likewise, more than a quarter of UK university students suffer from a mental health problem. Through a series of cross-sectional studies using correlation, regression, moderation and path analyses, I found that mental health shame was positively related with mental health problems, and self-compassion and intrinsic motivation were negatively related to both mental health shame and mental health problems in a variety of population groups that had not been explored before, including UK workers, UK students and Japanese workers. In my NLP research, I investigated the application of NLP-derived skills for career guidance and critically reviewed psychological outcomes of applying those skills in organisational settings, through a pre-post study, thematic analysis, and systematic review. Two skills, the Disney Strategy and Sponsorship, were regarded particularly useful by the small sample of registered career consultants in Japan investigated in Publication 1. My systematic review (Publication 8) concluded that while NLP may be effective for diverse psychological outcomes, there is a need for rigorous future research. Taken together, my findings suggest the wide applicability of the effects of self-compassion and intrinsic motivation on mental health, and the similarity of Sponsorship to the soothing system in the three emotion regulatory systems. The critical appraisal of my published works identified four areas that are caveats for understanding the findings and could benefit from further work: (a) Lack of consideration for established predictors, (b) Mental health variables being treated as a unitary construct, (c) Balanced discussion of positive and negative aspects of mental health, and (d) Lack of critical appraisal

of NLP. Future research should consider these critical insights to improve our understanding of mental health and NLP.

## Glossary

Term	Definition
Disney Strategy	A planning technique modelled on Walt Disney's thinking strategy by an NLP trainer, Robert Dilts, encompassing three perceptual positions: Dreamer, Realist, and Critic. Each position entails a specific thinking mode and body movement.
Extrinsic motivation	Motivation that is driven by an external motivator. Engaging in a particular behaviour itself is not satisfying, however an external reward obtained from the behaviour (e.g., money, grade) is appealing.
Intrinsic motivation	Motivation that is derived from inherent curiosity and satisfaction. An intrinsically motivated person engages in a particular behaviour because that in itself is already a reward to them.
Mental health	A dynamic state of internal equilibrium, alignment with universal values of society and ability to cope with life's difficulties to function in social roles.



Mental health problems	In my publications, I chose to examine the mental health problems of depression, anxiety and stress in particular, as these three symptoms were most common in the student and worker populations.
Mental health shame	Shame associated with having a mental health problem, encompassing negative attitudes, internal shame (negative judgement of oneself), external shame (a belief in negative perception from others) and reflected shame (worries about damaging others' reputation).
Neuro-linguistic programming	Practice of modelling excellence (i.e., a desired outcome) that is facilitated by a set of analysis tools and skills applied to human experience that engage with the person's unconscious experience.
Reframing	Changing a perspective on something (e.g., a personal quality, relationship, situation) to give it a different meaning.
Self-compassion	Kindness and understanding towards oneself, comprising three components: self-kindness versus self-judgement, common humanity versus isolation, and mindfulness versus overidentification.

## Summary of Published Works

This critical appraisal of my ten published studies (see Annex 1) aims to identify and assess the contributions made by each study and the body of work as a whole to the understanding of mental health in workers and students. My professional background, before working in academia, was consultancy for human resource development teams in Japanese companies, offering training based on neuro-linguistic programming (NLP). I observed increasingly more career consultants undertake our training in Japan and this prompted my desire to empirically explore how NLP might be useful to professional practice.

Thus, I started this publication journey with research exploring the role of NLP in the context of career guidance (Publications 1 and 2). Although based on a small sample, the studies revealed some interesting findings. Japanese registered career consultants reported that the Disney Strategy and Sponsorship were especially useful to their practice. The Disney Strategy was experienced to enhance positive emotions of the participants including intrinsic motivation (Publication 2), and Sponsorship was understood to offer a sense of safety to their clients (Publication 1). In these initial studies, I also found that research participants (career consultants and university students who used career services) reported that mental health and work motivation were important for workers to have a fulfilling professional life; as evidence for NLP being an effective approach to mental health was limited, I moved from studying NLP to studying mental health.

Indeed, mental health is an important aspect of career development (Herr, 1989; Publication 1 and 2) and work-related factors, in turn, can affect mental health (Mark & Smith, 2011). Good mental health can contribute to effective career development, whereas poor mental health can compromise it (Redekopp & Huston, 2019). Mental health problems such as anxiety and depression can damage one's working life and work motivation (Harvey

et al., 2017; Sainsbury et al., 2008). Likewise, work motivation is identified as a key component for successful career development (Pal et al., 2020; Claudia, 2015), and predicts the intention to terminate a current career path (Puspita & Susanty, 2017). These findings in career development, in addition to the findings from Publications 1 and 2, suggest that evaluating mental health and work motivation can also inform scientific understanding of how to cultivate a fruitful working life.

Despite the importance of mental health to their working life, research reported that many workers were reluctant to ask for help for mental health related problems (CV-Library, 2016; Henderson et al., 2013; Maekawa et al., 2016). This apparent discrepancy between the prevalence of mental health issues and reluctance to seek help led me to widen my research beyond the exploration of NLP to investigate relationships among mental health, work motivation and shame about mental health problems. Although significant associations between mental health and work motivation had been reported previously (Ilardi et al., 1993), whether “*mental health shame*” (Kotera et al., 2019a, p.136) might be related to these two variables had not been explored before. Therefore, my strategy was to compare these two variables in several different populations to gain a fuller understanding of factors contributing to mental health.

One population I investigated were UK hospitality workers because previous research reported that they frequently suffer from poor mental health (Davis, 2015), whilst other data suggest that almost half of hospitality workers (44%) would not reveal their mental health problems to anyone including their boss, family and friends, partly because of shame associated with mental health issues (Hospitality and Catering News, 2016). My research suggests that extrinsic motivation is related to (a) higher mental health shame and poor mental health (Publication 4), and (b) male gender, longer work experience and higher career

status (Publication 3). To appraise these findings cross-culturally, Japanese workers were examined. I found that mental health problems were positively associated with mental health shame and negatively associated with self-compassion (the opposite construct to self-criticism; Gilbert, 2010) (Publication 10).

Findings from my research on career and work mental health led me to research university student populations as they prepare to join the workforce. Mental health issues that have not been addressed during the university period are often carried into the workplace (Geirdal et al., 2019). Mental distress of university students needs to be addressed in order to protect their mental health in their professional life.

First, healthcare students were examined because this student population is highly aware of their career and professional standards that they will need to observe when they work in practice after graduation (e.g., about 90% of students become a professional healthcare worker; Association of Graduate Careers Advisory Services, 2017; Royal College of Nursing, 2019). In addition to mental health and mental health shame, self-compassion and caregiver identity (i.e., how strongly one identifies oneself as someone who offers care to others) were explored. Previous research reported relationships among these variables: self-compassion had been found to be associated with mental health and shame (Trompetter et al., 2017), and strong caregiver identity was suggested as an explanation for negative attitudes towards mental health and poor mental health in social work students (Ting, 2011). In line with Trompetter et al.'s findings (2017), Publications 5 and 6 found that mental health problems (viewed as negative emotional states in non-clinical samples, see Psychology Foundation of Australia, 2018) were positively related to mental health shame and caregiver identity, and negatively related to self-compassion. Healthcare students, including nursing

and social work students, who were ashamed of having mental health problems, had a strong identity as a caregiver and low self-compassion, and tended to have poor mental health.

Following this, business students were examined to contextualise the findings regarding mental health of healthcare students. Compared to healthcare students, business students have more diverse, flexible career pathways (Tomlinson et al., 2018; van Luttervelt, 2006), thus do not need to satisfy one specific professional standard as exclusively as healthcare students. Furthermore, because motivation had previously been suggested to be an important construct for a fulfilling professional life (Van Wingerden & Van der Stoep, 2018), business students' academic motivation was compared with healthcare students. Publications 7 and 9 found that (a) consistent with the findings for healthcare students, mental health shame was positively related to, and self-compassion was negatively related to mental health problems, and (b) business students had higher extrinsic motivation than healthcare students. These findings from my student research identify that self-compassion and mental health shame are highly relevant not only to the mental health of workers but also to that of university students.

Lastly, to appraise how these mental health challenges had been addressed in NLP research, a systematic review was conducted (Publication 8). Despite criticism in academia, NLP has been practised in the past half-century (de Rijk et al., 2019). One area where NLP has been widely practised is organisational settings (Tosey & Mathison, 2003), however no extensive review had synthesised the evidence on NLP in working populations. Of 952 academic articles identified, seven met all eligibility criteria for my systematic review. Our analysis suggested that NLP was reported to be effective for diverse psychological outcomes (e.g., occupational stress, self-esteem), however more rigorous research is needed to evaluate the efficacy of NLP for organisational mental health.

On reflection, I have developed a variety of research skills through my publication journey that consists of quantitative, qualitative and mixed-method research as well as a review work. In particular, many of my publications included quantitative methods such as t-tests, and correlation, regression, path and moderation analyses. My earlier works only employed rather fundamental statistical analysis such as t-tests, correlation and regression analyses (Publications 2-6), however more comprehensive analyses such as path and moderation analyses were used in my later works to further explore relationships among variables (Publications 7 and 10). These more advanced statistical skills would allow me to comprehensively analyse data obtained from my studies to yield more impactful research output. Additionally, due to the availability of participants, each of my studies was completed soon after the required sample size had been reached, however larger-scale studies utilising more comprehensive analyses which would afford group comparisons would have been preferable. I intend to keep refining my research skills to evaluate meaningful hypotheses to inform practice and future research.

Table 1 summarises the rationale, analysis, main findings, and developmental points for each publication.

*Table 1. Rationale for study, analysis, main findings, and developmental points for my research.*

<b>Publication</b>	<b>Rationale for study and analysis</b>	<b>Main Findings</b>	<b>Developmental Points</b>
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1	<p>As NLP became popular in Japan, more career consultants began to undertake NLP training. The title of 'Career Consultant' has been regulated by the government since 2016 suggesting it was an important area of research.</p> <p>As NLP in career guidance was an underexplored area, thematic analysis of semi-structured interviews was chosen to allow participants to express their thoughts and for the researcher to flexibly identify themes.</p>	<p>Active, action-oriented framework of NLP is more appropriate for time-limited career consultation than listening-based traditional counselling.</p> <p>The Disney Strategy and Sponsorship were reported particularly useful in career consultation.</p>	<p>Though this thematic analysis focused on transferability (how much our findings can be applied to other contexts) more than generalisability, more diverse samples would help consider the wide applicability of the findings. Considering the practice of NLP worldwide, cross-cultural samples would be helpful.</p>
2	<p>While Publication 1 focused on career consultants, Publication 2 focused on clients' experience. This study examined the effects of the Disney Strategy on students (<math>n=6</math>) who were engaged in job-hunting.</p> <p>To address small sample size and to capture participants' experience and effects rigorously, a mixed-method approach was used: thematic analysis on semi-structured interviews and t-tests to compare pre-post scores for self-esteem, job-search intensity, clarity, and self-efficacy were conducted.</p>	<p>The Disney Strategy (a) increased self-esteem and self-efficacy, and (b) helped participants have positive emotions, cultivating intrinsic motivation.</p> <p>Body movement was helpful to experience these positive changes.</p>	<p>As the required sample size for t-tests (dependent sample) was 34 (two tails, <math>dz = 0.50</math>, <math>\alpha = 0.05</math>, Power = 0.80), a larger sample needs to be examined.</p>
3	<p>UK hospitality workers suffer from poor mental health. Previous research reported relationships between mental health problems, worker profile (age, gender, work experience) and work motivation. This study explored these relationships in UK hospitality workers (<math>n=103</math>)</p> <p>T-test was used to compare intrinsic and extrinsic motivation. Correlation analysis was conducted to explore relationships between mental health, worker profile and motivation.</p>	<p>Intrinsic motivation was higher than extrinsic motivation in UK hospitality workers.</p> <p>Extrinsic motivation was related to male gender, longer work experience, and higher position.</p> <p>Our sample satisfied the required size for both analyses: 64 for t-test (independent sample) (two tails, <math>dz = 0.50</math>, <math>\alpha = 0.05</math>, Power = 0.80), and 84 for correlation (two tails, <math>p</math> H1</p>	<p>Regression analysis could add knowledge about predictors of motivation.</p>

		= 0.30, $\alpha = 0.05$ , Power = 0.80, $p H_0 = 0$ ).	
4	<p>UK hospitality workers suffer from poor mental health, yet many of them do not reveal this to others. Work motivation has started to be studied in the hospitality industry, however the relationship between mental health and motivation has not been explored in the UK hospitality field. Poor motivation and mental health were estimated to cost £6 billion to the UK economy.</p> <p>T-test was used to compare UK with Chinese hospitality workers. Correlation analysis was used to identify relationships among these 3 variables (mental health problems, mental health shame, and motivation). Regression was used to identify which type of motivation predicts mental health problems more strongly.</p>	<p>UK hospitality workers (<math>n=103</math>) had higher intrinsic and extrinsic motivation than Chinese hospitality workers.</p> <p>Extrinsic motivation was more strongly related to mental health shame and mental health problems than intrinsic motivation.</p> <p>Our sample satisfied the required size for all analyses: 64 for t-test (independent sample) (two tails, <math>d_z = 0.50</math>, <math>\alpha = 0.05</math>, Power = 0.80), 84 for correlation (two tails, <math>p H_1 = 0.30</math>, <math>\alpha = 0.05</math>, Power = 0.80, <math>p H_0 = 0</math>) and 55 for regression (two tails, <math>f^2 = 0.15</math>, <math>\alpha = 0.05</math>, Power = 0.80).</p>	<p>Moderation analysis could have been conducted: because the positive relationship between mental health shame and mental health problems has been identified, how the level of extrinsic motivation would moderate the relationship would be interesting to establish.</p>
5	<p>UK healthcare students suffer from poor mental health, which was reported partly because of their strong caregiver identity (i.e., they believed that they should not need care). Moreover, self-compassion and intrinsic motivation have been reported to be related to mental health. Healthcare students in general were known to have high intrinsic motivation. However, these relationships have not been explored in UK healthcare students.</p> <p>Correlation analysis was used to explore relationships of caregiver identity, self-compassion, intrinsic motivation and mental health. Regression analysis was conducted to identify degrees of prediction of mental health by these 3 variables (identity, self-compassion and motivation).</p>	<p>2/3 of 116 healthcare students reported severe levels of mental distress. Good mental health was negatively related to caregiver identity, and positively related to self-compassion and intrinsic motivation. Caregiver identity, self-compassion and intrinsic motivation predicted variance in mental health.</p> <p>Our sample size satisfied the required size for correlation (84; two tails, <math>p H_1 = 0.30</math>, <math>\alpha = 0.05</math>, Power = 0.80, <math>p H_0 = 0</math>) and regression (55; two tails, <math>f^2 = 0.15</math>, <math>\alpha = 0.05</math>, Power = 0.80).</p>	<p>Because self-compassion was strongly related to mental health, how this mediates the relationship between mental health and caregiver identity would be helpful to explore. Caregiver identity's negative relationship with mental health might be explained by self-compassion: students who are not kind to themselves may have a strong and self-critical identity as a caregiver, which damages their mental health.</p>



<p>6 UK social work students suffer from poor mental health, yet do not ask for help, partly because of shame about mental health problems: they believe that being mentally distressed may imply a failure to become a professional social worker. Shame has been positively associated with self-criticism, and negatively associated with self-compassion. Moreover, having a strong caregiver identity often causes them to overlook their own mental health. Therefore, this study explored relationships among these 5 constructs (mental health problems, mental health shame, self-criticism, self-compassion, and caregiver identity).</p> <p>T-test was used to compare the levels of mental health shame between female social work students and female life science students. Correlation analysis was conducted to explore relationships among these 5 variables. Regression analysis was used to identify significant predictors of mental health problems.</p>	<p>Female social work students (<math>n=84</math>) had higher levels of negative mental health attitudes than female life sciences students (<math>n=94</math>). Sample size was large enough (required size = 64; two tails, <math>dz = 0.50</math>, <math>\alpha = 0.05</math>, Power = 0.80).</p> <p>Self-criticism, self-compassion and caregiver identity were significantly related to mental health problems, and identified as predictors (<math>n=87</math>, satisfying the required sample sizes for correlation, 84, and regression, 55).</p>	<p>As caregiver identity negatively predicted anxiety and stress, and self-compassion was negatively correlated with depression, anxiety and stress, moderation analysis examining whether self-compassion would moderate the relationship between caregiver identity and mental health problems could elucidate the relationship among these three variables (mental health problems, self-compassion, and caregiver identity).</p>
<p>7 The number of UK business students who suffer from mental health problems is increasing, however they tend to see mental health problems in a negative and shameful way. Moreover, motivation and self-compassion have been found to be strongly related to mental health. This study first compared the levels of these 4 constructs (mental health problems, mental health shame, motivation, and self-compassion) between UK business students and UK social work students to contextualise the mental health of business students. It also explored relationships among these constructs in UK business students.</p> <p>Correlation analysis was used to explore associations among these</p>	<p>In 138 business students (satisfying the required sample size, 84), mental health shame and extrinsic motivation were higher, and self-compassion was lower than in social work students. Mental health problems were positively related with mental health shame, and negatively related with self-compassion. Self-compassion was a predictor of mental health problems. Shame moderated the relationship between self-compassion and mental health problems.</p>	<p>Because amotivation was positively associated and self-compassion was negatively associated with mental health problems, path analysis to examine whether self-compassion would explain the impact of amotivation on mental health problems would be useful. A business student who is not motivated at all in studying may have low self-compassion that damages their mental health.</p>

	<p>variables. Regression analysis was used to identify predictors of mental health problems. Moderation analysis was used to examine whether mental health shame would moderate the relationship between self-compassion and mental health problems.</p>		
8	<p>NLP has been practised in many countries, and academic papers have been published. One area of focus is in occupational settings; however, no paper has analysed and synthesised evidence on the effects of NLP on occupational psychological outcomes. Accordingly, this article evaluated the quality and quantity of empirical NLP papers in occupational settings.</p> <p>As there was no randomised control trial, the Newcastle-Ottawa Scale was used for quantitative studies, and the CASP checklist was used for a qualitative study.</p>	<p>NLP can improve a wide range of occupational psychological outcomes including self-esteem and occupational stress.</p> <p>In many cases, the benefits of NLP were both overpromised and under-supported.</p>	<p>In future, meta-analysis should be done. At the time of the study, however, there was not enough data to conduct meaningful meta-analysis. There were only two outcomes that were evaluated in more than one study: self-esteem and occupational stress.</p>
9	<p>The importance of ethical education at business schools has been highlighted. To address this, many business schools have implemented ethical training, however the effects were not promising. Research has identified associations between ethical judgements and psychological constructs such as mental health, motivation and self-compassion. This study evaluated whether business students' ethical judgement would be related to those psychological constructs.</p> <p>Correlation analysis was used to explore relationships among ethical judgements, motivation, self-compassion and mental health. Regression analyses were conducted to identify predictors of ethical judgement, and predictors of mental health problems.</p>	<p>Among 144 business students, extrinsic motivation was associated with students' belief that others would behave unethically, whilst intrinsic motivation was associated with strict ethical judgement and self-compassion.</p> <p>Extrinsic motivation predicted others' ethical judgement (believing that others behave unethically) and self-compassion predicted good ethical judgement and good mental health.</p>	<p>As extrinsic motivation predicted views of others' ethical judgement, moderation analysis evaluating whether self-compassion moderates this relationship would be helpful.</p>

<p>10 Japanese workers suffer from poor mental health, which may be exacerbated by strong mental health shame. This relationship between mental health and mental health shame may be mediated by self-criticism and self-reassurance. This study explored relationships among these 4 variables (mental health problems, mental health shame, self-criticism, and self-reassurance), and mediating relationships in mental health and mental health shame.</p> <p>Correlation analysis was used to explore relationships among these 4 variables, and path analyses were used to examine whether self-criticism and self-reassurance would mediate the relationship between mental health shame and mental health problems.</p>	<p>Among 131 Japanese workers, a high proportion had mental health shame. Mental health problems were positively associated with mental health shame and self-criticism, and negatively associated with self-reassurance.</p> <p>Hated-self and family reflected shame predicted variance in mental health problems.</p> <p>Self-criticism and self-reassurance partially mediated the relationship between mental health shame and mental health problems.</p>	<p>Because hated-self (one component of self-criticism) was the strongest predictor of mental health problems, moderation analysis to evaluate whether self-reassurance moderates the relationship between hated-self and mental health problems would be helpful. A Japanese worker who has strong self-reassurance may have less impact of hated-self on mental health.</p>
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### Differences and Similarities Between Studies

In order to demonstrate a wide range of research skills, my published works employed a variety of research designs and analyses: cross-sectional design for questionnaire data (correlation, regression, path and moderation analyses), qualitative thematic analysis, pre-post design (t-tests), and a systematic review. The most common design was cross-sectional, used for the mental health studies. While noting the limitations of this design (e.g., unable to identify causality), this method allows (a) relatively quick data collection with low participant workload, leading to timely research output, and (b) comprehensive data collection, measuring all variables at one time point. My NLP studies employed qualitative methods, mixed methods, and systematic review (Publications 1, 2 and 8). Qualitative investigation to appraise participants' first-hand experience is appropriate for NLP research because NLP deals with subjective experience. Thematic analysis was used in Publications 1 and 2 because

of its applicability to underexplored areas in applied science (Braun & Clarke, 2019). Pre-post design was additionally used to evaluate the effects of the Disney Strategy. Lastly, as there had not been any review work focused on NLP for occupational psychology outcomes, I conducted a systematic review to comprehensively appraise the quality and quantity of evidence for the effects of NLP in the workplace.

Theoretically, Gilbert's (2010) model of three emotion regulatory systems (threat, drive, and soothing systems), which he used to inform compassion focused therapy (CFT) relating to Attachment Theory (Bowlby, 1969) and Social Mentality Theory (Gilbert et al., 2007b; Gilbert, 2014), was referred to across my studies as this model helps to understand the relationships between self-compassion, mental health shame, and mental health problems. The soothing system activates our parasympathetic nervous system, which modulates rest and digestion. When the soothing system is engaged, we feel safe, content and self-compassionate, leading to good mental health. Contrarily, the threat system activates our sympathetic nervous system, relating to the fight-or-flight response and negative affects, such as anger, disgust and anxiety. The threat system inhibits accepting love and safety, while, ironically, self-criticism (derived from the threat system), interpreted as a means to protect us from losing social acceptance and love, leads to poor mental health (Gilbert, 2010). Lastly, the drive system is activated by excitement and vitality, driving us towards incentives and resources. Persistent activation of this system can cause mental distress, too, because not attaining what was desired can cause us to doubt our competency and increase shame, leading to depression (Gilbert, 2010). My study findings are in line with this model. The positive relationships between mental health shame and mental health problems can be interpreted as the threat and drive systems being activated (shame), relating to poor mental health. On the other hand, the negative relationships between self-compassion and mental health problems suggest that the soothing system (self-compassion) is activated, which is associated with

good mental health. Indeed, Gilbert's model is not the only one that illustrates emotion regulation (e.g., Gross's Process Model of Emotion Regulation; Gross, 2002). However, my study variables such as self-compassion and shame align better with CFT and Gilbert's model.

### **Contribution to Existing Knowledge**

Findings in my publications provide additional support to Gilbert's model. First, the significant negative relationships between self-compassion and mental health problems, and positive relationships between mental health shame and mental health problems, found across all populations can be interpreted as offering support for the effects of the soothing system. Previous work has predominantly focused on Western populations including female psychology students (e.g., Gilbert et al., 2007a); my work included Japanese participants (Publication 10), and both male and female students in healthcare and business studies (Publications 5, 6, 7 and 9), who have not been studied before. It is well documented that people in these population groups are reluctant to ask for help (Hospitality and Catering News, 2016; Ting, 2011), and the significant relationships (between self-compassion, mental health shame and mental health problems) found in my studies suggest that cultivating self-compassion may be helpful to reduce mental health shame and mental health problems in these populations.

Second, motivation constructs are an elaboration of Gilbert's model, in particular the drive system. Extrinsic motivation was related to high mental health shame, while intrinsic motivation was related to low mental health shame and high self-compassion. In the past, motivation research has reported the importance of intrinsic motivation, relating to achievement and wellbeing. For example, students who are intrinsically motivated tend to have higher levels of academic engagement, achievement and wellbeing than extrinsically

motivated students (Deci & Flaste, 1996). However, the relationships of motivation with shame and compassion have not been examined before. My studies (Publications 4, 5 and 7) evaluated these variables and identified significant relationships between them. Moreover, Publication 9 was the first study to report that intrinsic motivation was related to ethical judgements which were previously associated with compassion (Shonin et al., 2017). My study findings suggest that self-compassion (linked to the soothing system) is related to intrinsic motivation, but not to extrinsic motivation. Targeting the soothing system may be helpful in strengthening positive psychological traits (i.e., intrinsic motivation), in addition to reducing negative symptoms as originally reported.

Lastly, another novel variable I examined in relation to this model is Sponsorship. Sponsorship is commonly regarded as awakening potential within others by committing to support something that is already within a person or group. It builds upon psychological safety (Dilts & DeLozier, 2000) and is identified as one of the most useful concepts from NLP certification training applied at universities and the workplaces (Kotera & Van Gordon, 2019; Publication 1). Participants reported that Sponsorship offered a sense of safety, leading to better performance. This suggests that, in addition to intrinsic motivation, Sponsorship is influenced by the soothing system or vice versa.

My findings imply that Gilbert's model is not only useful to clinical and counselling psychology, where the focus is often placed on elimination of negative symptoms, but can also be useful to positive, coaching and organisational psychology, where enhancement of one's strengths is a focus. Accordingly, this model may be useful in supporting people in many different roles and contexts, as my work has started to demonstrate.

At the end of this section, it must be noted that these findings and implications are based primarily on my cross-sectional and interview-based studies. These additional insights

into Gilbert's model need to be tested in rigorous study designs that incorporate longitudinal evaluations and comparator groups, if warranted, in randomised control trials.

## **Discussion**

While my published works offer these original insights, some limitations should be noted in terms of the design, theoretical discussion and practical implications. Those limitations, organised into four categories, will be critically discussed: (a) Lack of consideration for established predictors, (b) Mental health variables being treated as a unitary construct, (c) Balanced discussion of positive and negative aspects of mental health, and (d) Lack of critical appraisal of NLP.

### **Lack of Consideration for Established Predictors**

My studies did not include established predictors of mental health such as stressors, social support, coping styles and psychological capital (PsyCap; an employee's positive psychological state [Luthans et al., 2007]). This is explained in two reasons. First, these constructs are related to the second wave of behavioural therapies (Hayes, 2004) that directly engage with cognitive contents and behaviours targeting elimination of symptoms (Linardon et al., 2019), while the variables my studies explored (e.g., self-compassion) are related to the third wave, which engages with *cognitive process* and *awareness*, emphasising acceptance, mindfulness, metacognition, psychological flexibility, and eliminating avoidance and suppression (Hayes, 2004). The second wave focuses more on reduction of the presenting symptoms (Forman & Herbert, 2009): in the second-wave framework, a negative emotion is analysed (e.g., identifying the stressor), and coping styles are evaluated. A linkage between dysfunctional cognitions and maladaptive behaviours is re-appraised to identify distorted thinking to be corrected (Brown et al., 2011). On the other hand, the third wave is more related to moving towards life goals (Forman & Herbert, 2009) by being mindful of intrinsic

experiences while accepting, instead of changing, emotions and cognitions (Herbert et al., 2009). Because my studies did not recruit clinical populations, the goal-focused nature of third wave predictors was deemed more relevant than the problem-oriented second wave ones.

The other reason is consistency with student populations, as mental health issues are often carried over from the university to the workplace (Geirdal et al., 2019). My studies explored consistent variables which helped to identify commonalities in mental health between workers and students (e.g., self-compassion was consistently negatively related to mental health problems). Indeed, PsyCap is an established predictor of mental health, partly related to the third wave, focusing on resilience (Luthans et al., 2007). PsyCap is commonly discussed in organisational settings as this construct fits with the competitive nature of the business world, considering organisational performance such as ‘capital’ (Cavus & Gokcen, 2015). This does not necessarily fit with educational contexts: organisational psychological concepts are geared towards the maximisation of efficiency and quality, while caring professions including university education focus on humanism, relationships and rights such as accessibility and equality (Misca & Unwin, 2017). Therefore, when I planned my studies, I decided not to explore PsyCap in the student populations. However, recognising that a few studies have explored PsyCap in student populations more recently, it is acknowledged that it would be worthwhile to explore this construct in my future research. Many studies that explored PsyCap recruited business or sports students (e.g., Kim et al., 2020; Luthans et al., 2016; Nambudiri et al., 2019) or did not report students’ area of studies (e.g., Selvaraj & Bhat, 2018; Siu et al., 2014). The relevance of PsyCap as a predictor of mental health in students in other areas needs to be evaluated.



Those established risk factors for depression, anxiety and stress are in fact still investigated in recent mental health research, supporting the findings from earlier work (e.g., Gardner & Warrick, 1984; Seers et al., 1983). For example, work-related stress was predicted by work characteristics (e.g., work demand effort, reward, social support) and coping skills in 450 Italian nurses (Vallone et al., 2020). High levels of depression and anxiety were associated with workplace demands, work over-commitment, external work pressures, negative coping and attributional behaviours among 307 UK university employees (Mark & Smith, 2011). Likewise, coping skills predicted negative health outcomes such as depression and anxiety among 240 adults in South Wales (Mark & Smith, 2018). Moreover, during COVID-19, gender, age, pre-existing mental health conditions and living alone or with children were identified as risk factors for depression and anxiety in UK adults (Fancourt et al., 2021). Among healthcare workers, high burnout was associated with gender, job category, and work environment characteristics (e.g., working hours, sleep) (Matsuo et al., 2020). Considering these findings and the continuing relevance of established risk factors, my future research will include these risk factors to better inform mental health findings (e.g., Li et al., 2021).

### **Mental Health Variables Being Treated as a Unitary Construct**

Depression, anxiety and stress were treated as the outcome variables in my studies, using the Depression Anxiety and Stress Scale (DASS) to evaluate the levels of 'mental health problems' as it assesses negative emotions that can be experienced in one's daily life (Psychology Foundation of Australia, 2018). In DASS, depression is related to self-deprecation and inertia; anxiety is related to autonomic arousal and subjective experience of anxious affect; and stress is related to chronic non-specific arousal including difficulty relaxing (Psychology Foundation of Australia, 2018). In Publications 4, 5, 6, and 9, the

DASS subscales were measured separately, and these subscales were highly correlated ( $r \geq .58$ ). In Publications 7 and 10, where more variables were examined, DASS subscales were measured altogether as ‘mental health problems’ once high correlation among the three subscales had been confirmed ( $r \geq .60$ ), following the reviewers’ feedback. In my publications, these mental health variables were treated as a unitary construct.

However, considering different aspects of these variables (Kobayashi et al., 2020; Magalhaes et al., 2010) can strengthen my discussions and analyses. Especially given that ‘mental health’ is a key component of my publications, the details of mental health problems, rather than overall mental health problems, could have been examined. For example, Lazarus’ Transactional Theory posits depression and anxiety are results of appraising stress (cognitive appraisal), where negative stress is regarded as a product of the transaction between an individual’s coping resources and perceived threat, rather than a specific external stressor (Lazarus & Folkman, 1984). Similarly, other theories such as the Stress Exposure Theory suggest psychological difficulties result from stress (Doom & Cicchetti, 2020). Considering these theories and findings, further studies to explore these mental health variables would be helpful. For example, in self-compassionate individuals the relationships between stress and depression/anxiety may be weaker: self-compassion may moderate the impact of stress on depression/anxiety. Thus, my findings may provide some evidence that mental health problems, as a whole, are related to other variables such as self-compassion and mental health shame, but how each mental health problem is related to those variables was not examined. Future research should evaluate those relationships to appraise the different characteristics of each mental health problem in order to suggest more targeted interventions.

### **Balanced Discussion of Positive and Negative Aspects of Mental Health**

My published works would have benefited from discussing both positive and negative emotions in relation to mental health, aligning with the current debate on the definition of mental health. One commonly used definition is a state of well-being enabling an individual to realise their potential, manage daily stress, work effectively in their social circles, and it is not merely the absence of disease or infirmity (World Health Organization, 2014). This definition differentiates itself from medical models, defining mental health as the absence of mental disorders (Malla et al., 2015). Furthermore, Galderisi et al. argue against the notion that mental health solely entails positive feelings and functioning: an employee who has just been fired and feels desperate in a low employing society, might still be considered mentally healthy (Galderisi et al., 2015). Mentally healthy people can feel sad and unhappy, which is part of a fully-lived human life, as opposed to emphasising purely positive feelings such as happiness and mastery (Diener et al., 1999; Lamers et al., 2011; Waterman, 1993).

Moreover, what is regarded as positive and negative can differ cross-culturally. For example, in the West, shame is often viewed negatively, associated with disengagement (Sheikh, 2014), whilst shame is viewed more positively in collectivistic cultures, associated with restorative actions (Fung, 1999; Okano, 1994). Therefore, shame is related to a decrease in prosocial behaviours in individualistic western countries, whereas shame can lead to constructive behaviours (e.g., remedying a relationship) in collective cultures (Rodriguez et al., 2016). These findings were in line with criticism of Jahoda's categorisation of mental health into self-actualisation, mastery and autonomy (1958) as it only aligned well with North American values (Murphy, 1978). As mental health is a global agenda today, universal applicability needs to be captured in its definition considering these cultural differences (Vaillant, 2012). Accordingly, mental health research needs to consider whether the findings in one group of population could be found in others.

The more balanced perspective of mental health parallels the functions of self-compassion as conceptualised by Neff (2003), who acknowledges difficulties as part of human life (i.e., common humanity, one component of self-compassion; Neff, 2003), and accepts, instead of ignores, negative feelings associated with them (i.e., mindfulness, another component of self-compassion; Neff, 2003). This more balanced view is supported by evidence that accepting mental experience, including positive and negative emotions, is related to better mental health (Ford et al., 2018). Further, acceptance of negative emotions is embedded in third-wave therapies (e.g., mindfulness, acceptance and commitment therapy) whereas second-wave therapies identify negative emotions and thoughts as a problem (Gaudiano, 2008). These findings support the notion that inclusion of negative emotions as part of good mental health is more aligned with the current debate on mental health.

Findings in my research, evaluating the third-wave outcomes, can contribute to this balanced view on mental health, however more discussion focusing on it could have highlighted the relevancy to the current debate on mental health. For example, one characteristic of self-compassion, acknowledging suffering as part of life, is in line with Galderisi et al.'s (2015) definition that mental health relates to a dynamic state of internal equilibrium, alignment with universal values of society, and ability to cope with life's difficulties. *A dynamic state of internal equilibrium* acknowledges a variety of human emotions (including fear, sadness), and *universal values* include care for oneself and others, and connectedness between people. Likewise, self-compassion recognises mindfulness (internal equilibrium), (self-)kindness (universal values of society), and common humanity (recognising life's suffering) (Neff, 2003, 2011). These similarities to Galderisi et al.'s definition (2015) may explain why a strong association between mental health and self-compassion was observed in my published works exploring different populations (Publications 5-7, and 9-10). My research findings are in line with the balanced view of

mental health considering positive and negative emotions, therefore more explicit discussion could have demonstrated their relevance to the current debate on mental health.

## **Lack of Critical Appraisal of NLP**

### ***Why NLP?***

Alongside mental health, my published works investigated NLP because of NLP's considerable gap between practice and research (Publication 8). Since its introduction, NLP has been used to treat a variety of symptoms including depression, anxiety and stress (Bigley et al., 2010; Gray & Liotta, 2012; Simpson & Dryden, 2011; Stipanovic et al., 2010; Wake, 2011). More than 200,000 people have undertaken some form of NLP training in the USA and the UK alone (Tosey & Mathison, 2009). Furthermore, 326 facilities of the National Health Service (NHS) invested approximately £800,000 in NLP between 2006 and 2009 (Sturt et al., 2012). NLP-based psychotherapy (Neuro-Linguistic Psychotherapy; NLPt) was recognised by the UK Council of Psychotherapy (UKCP) in the early 1990s (Grimley, 2013). In the UK education sector, more than 2000 teachers undertook NLP training as part of the government Fast Track Teacher Programme between 2003 and 2010 (Carey et al., 2010). Turning to the East, for example in Japan, NLP is actively practised. Although relevant data is not fully available, the Society of NLP (the original NLP certification body established in 1979) has certified over 1725 practitioners and 1321 master practitioners between 2003 and 2015 (C. Hall, personal communication, March 15, 2016). However, notable large-scale practice has not been reported in recent years, coinciding with publications of review work criticising the underdeveloped scientific evidence of NLP's effectiveness (Grimley, 2016; Pensieri, 2013; Pishghadam & Shayesteh, 2014; Sturt et al., 2012; Witkowski, 2010). These changes in practice and research led me to investigate NLP.

### ***Definition***

The original definition given by Bandler and Grinder (1979) described NLP as a ‘model of human communication and behavior’ (p.3). Two decades later, Bostic St. Clair and Grinder (2001) referred to it as a modelling technique to identify differences that make the difference between excellent performers and average ones. Grimley (2016) found 14 different definitions of NLP, which included a powerful model of human experience and communication (Bandler & Grinder, 1979), a behavioural model for performance excellence (Wake, 2010), and a cognitive psychology model (James & Woodsmall, 1988). These definitions vary to a great extent, however modelling—the most original principle of NLP (Burgess, 2014)—is relatively consistently referred to (the most frequently used word in the 14 definitions was ‘model’). Relatedly, Dilts et al. noted that NLP makes no commitment to theories but is a model: while a theory concerns a justification of why models fit reality, seeking truth, a model pertains to whether it works or not, valuing usefulness (Dilts et al., 1980). Accordingly, I would define NLP as *practice of modelling excellence using unconscious assimilation that is facilitated by specific tools and skills*. Indeed, this definition includes contradictory components (i.e., unconscious assimilation and more conscious tools and skills), which, however, can arguably explain a function of NLP that brings unconscious experience onto the conscious level through modelling (Linder-Pelz & Hall, 2007). This definition supports the practice-focused nature of NLP, eliciting the model and replicating the excellence (Grimley, 2016). Moreover, this can explain the open system of NLP (Grimley, 2019; Hollander et al., 2016), where practitioners model excellence in one area using specific analysis tools and skills (e.g., NLP Strategies) to identify unconscious experience and apply the model to other areas, expanding the area of NLP. This feature of NLP arguably distinguishes it from simply copying what others did on the conscious, surface level, however these processes have not been rigorously carried out in NLP practice (Sturt et al., 2012; Publication 10; Witkowski, 2010) or investigated systematically in the academic literature.

Further, my definition referring to NLP as practice may explain the eclectic nature of NLP-derived skills (Grimley, 2019; Tosey & Mathison, 2009): NLP's primary focus is on replication of achieving a desired outcome (Bandler & Grinder, 1979). Therefore, any tools that can contribute to it are incorporated, aligning with what Dilts called the 'whatever works' nature of NLP (Hayes, 2006). The practice-focused nature of NLP implies that it is not appropriate to categorise NLP as part of psychology, which requires theories (i.e., a generalised statement aimed at explaining a phenomenon; Mooney & Swift, 1999). It is worth noting, however, that many links can be drawn between NLP and existing theories (e.g., Linder-Pelz & Hall, 2007) and hence, it is a concern that the theoretical orientation of NLP remains rather patchworked, failing to establish a core framework (De Rijk et al., 2019; Grimley, 2019). Without a robust theoretical orientation, NLP relates to practice, therefore it uses models—purposeful representations of reality in a specific context, not necessarily related to justification (Mooney & Swift, 1999). As NLP is often seen as being about the practice of modelling, it has also been understood as a learning approach rather than a clinical intervention. The lack of a standard definition and of a core theoretical framework has to be acknowledged as a serious flaw of NLP.

### ***Boundaries with Other Approaches***

Positioning NLP as a psychological approach can result in poor boundaries with other approaches. In my empirical studies of NLP (Publications 1 and 2), Reframing and the Disney Strategy were introduced as NLP skills. Though these skills are listed in the 'Encyclopedia of NLP' (Dilts & Delozier, 2000) and taught in the NLP certification training curriculum in Japan (Yamazaki, 2007), they are not unique to NLP, therefore the origin of these skills should have been discussed in my publications to inform practitioners and clients. Reframing is often used in NLP practice, and the co-founders extensively discussed it in their

book 'Reframing: Neuro-linguistic programming and the transformation of meaning' (Bandler & Grinder, 1983). However, as the editor of this book noted, Reframing (Kolko & Milan, 1983) was not new, and was used by notable therapists such as Watzlawick, Haley, Minuchin and a hypnotherapist, Milton Erickson. Erickson used Reframing in the context of utilisation technique—instead of fighting against clients' resistance, he utilised the resistance to lead to a desired outcome (Erickson, 1959). Bandler and Grinder observed Erickson's sessions and learned how he used Reframing (then combined with Virginia Satir's parts work) to develop the Six-Step Reframing intervention (Bandler & Grinder, 1979, 1983). Using my definition of NLP, the Six-Step Reframing would be regarded as a product of NLP modelling practice. This boundary between what is NLP and what is not needs to be clarified.

Likewise, Disney Strategy is similar to Mental Contrasting and Implementation Intentions (MCII; Hawes, 2007), supporting individuals to translate positive attitudes into strong goal commitment, then action. In MCII, first an individual imagines the desired future to make a contrast with reality, then creates action plans in an "if-then" format by identifying when, where and how a goal intention is implemented into action (Gollwitzer & Rohloff, 1999). The difference from MCII may be that the Disney Strategy involves body movement in each position, which participants in my research (Publication 2) reported effective for distinguishing different thinking modes. Further, more importantly, MCII is built on Fantasy Realisation Theory (Oettingen et al., 2001), whereas the Disney Strategy does not have a particular theoretical orientation: instead, the Disney Strategy was developed through NLP modelling by Dilts (1998), suggesting that this strategy is also a product of NLP.

These definitional and boundary problems that NLP suffers from need to be addressed in NLP research papers. Especially when NLP-derived skills are used on people, clients need to be informed sufficiently. Additionally, to establish the science of NLP, NLP-derived skills



should be tested in a rigorous research design, while identifying the unique features of the tested skill and its effectiveness for client outcomes, making a clear distinction between what part overlaps with existing interventions or techniques and what is unique. Indeed, the systematic review (Publication 8) identified very few studies that empirically evaluated NLP-derived interventions ( $n=7$ ), even though a relatively large number of articles were initially identified ( $n=952$ ). Without clear boundaries, NLP research would appear as a replica of the same skill with a new NLP name, which violates ethics in research and practice. These problems have been discussed for over 40 years in the NLP community without fruit, and the co-founders and other leading practitioners do not seem willing to solve them (de Rijk et al., 2019). This partly explains why rigorous research (e.g., randomised controlled trials) is missing in NLP.

### ***Ethics in Practice***

Lastly, my publications did not sufficiently discuss how those recommended skills should be utilised ethically —another key weakness of NLP practice (Grimley, 2019). Although NLP originated in clinical practice helping clients reduce their negative symptoms, *NLP training courses* are in general not designed to treat these symptoms: NLP certification curricula do not have a component focusing on mental health problems, which is vital when you work with others' mental health. This can highlight one salient weakness of model-based approaches without theoretical understanding. NLP focuses on what works, therefore practitioners do not necessarily have sufficient knowledge and skills to deal with cases where interventions do not work, and when they encounter unexpected cases, they may not be equipped to make an appropriate treatment decision (unless they have learned it outside NLP). In clinical practice, providing therapeutic interventions is only the tip of the iceberg (Last & Adelaide, 2013). Having a good understanding and up-to-date knowledge of mental

health is a requirement as a practitioner, as listed in the subject benchmark for psychotherapy in the UK higher education (The Quality Assurance Agency for Higher Education, 2013). Working with people's mental health without it could risk the client's safety, violating the ethical standard of regulatory bodies such as the British Association for Counselling and Psychotherapy (2018). Similarly, non-maleficence is essential in psychological practice (e.g., British Psychological Society, 2018; American Psychological Association, 2017), therefore using an intervention that is not empirically supported poses a serious risk to ethics in practice (Bar et al., 2020; Grimley, 2016) and may prove harmful to some individuals. Thus, NLP curricula, including supervision and post-certification training, need to educate practitioners how to maintain safe practice.

The commercialised nature of NLP (Grimley, 2019) may underlie this lack of mental health education (Bovbjerg, 2011). Firstly, advertising the effects of an intervention that is not well-supported by research is unethical. Furthermore, as Publication 9 identified, extrinsic motivators such as monetary incentives can negatively impact on our ethical judgement. NLP providers need to keep participants/customers entertained throughout the training, in order to convert them into a repeated customer to maximise the profit. This may skew the NLP training curriculum towards more eye-catching contents (e.g., dynamic interventions) rather than scientific understanding of mental health problems and interventions. Although all of my published works recruited non-clinical samples who have declared that they did not have any mental health diagnosis, a recommendation for careful use of these NLP skills could have been noted in my publications.

### **Conclusion**

My ten published works focused on the mental health of students and workers, as these populations were known to have high levels of mental health problems and mental

health shame. All of the examined populations —UK workers, healthcare students, business students, and Japanese workers— demonstrated strong correlations between mental health problems and mental health shame. Likewise, self-compassion was consistently associated with good mental health, while self-criticism or a low level of self-compassion was associated with poor mental health. Based on my systematic review (Publication 8) and the NLP studies (Publications 1 and 2), NLP-derived skills were deemed effective but given the small samples, these findings should not be generalised and cannot be used to support NLP.

This critical appraisal evaluated my publications: it provided a rationale for the research reported in these publications, an evaluation of my research designs, methods, findings and contributions to scientific knowledge as well as a reflection on limitations of this research, coupled with suggestions for future studies. In particular, this critical appraisal addressed limitations such as a lack of consideration of established predictors for mental health, mental health problems being treated as a unitary construct, lack of the balance view of mental health, and key problems associated with NLP. These discussion points can offer more comprehensive and critical views on my findings and arguments reported in my published works. In the current COVID-19 crisis, the importance of mental health is estimated to increase even more in the coming years (Martin & Cooper, 2020). I hope my future research, utilising knowledge gained from my PhD journey and critical appraisal, will provide helpful insights to address these global problems.

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**Annex 1: My intellectual and written contribution to co-authored works as appropriate**

1. Kotera, Y. (2018). A qualitative investigation into the experience of neuro-linguistic programming certification training among Japanese career consultants. *British Journal of Guidance and Counselling*, 46(1), 39-50. doi: 10.1080/03069885.2017.1320781

Ethical approval reference: 03-15-YK

Extent of the intellectual and written contribution by me;

NA as single-authored work.

2. Kotera, Y., & Sheffield, D. (2017). Disney strategy for Japanese university students' career guidance: a mixed methods pilot study. *Journal of the National Institute for Career Education and Counselling*, 38, 52-61. doi: 10.20856/jnicec.3808

Ethical approval reference: 22Sep16YK

Extent of the intellectual and written contribution by me;

Formulation (e.g., research design, ethics application) 100%

Execution (e.g., data collection) 100%

Analysis 80%

Publication 70%

3. Kotera, Y., Adhikari, P., & Van Gordon, W. (2018) The relationship between work motivation and worker profile in UK hospitality workers. *International Journal of Education, Psychology and Counseling*, 2(6), 231-243.

Ethical approval reference: UDOL- 05YK-2015-16

Extent of the intellectual and practical input by me;

Formulation (e.g., research design, ethics application) 100%

Execution (e.g., data collection) 10%

Analysis 100%

Publication 80%

4. Kotera, Y., Adhikari, P., & Van Gordon, W. (2018) Motivation types and mental health of UK hospitality workers. *International Journal of Mental Health and Addiction*, 16(3), 751-763. doi: 10.1007/s11469-018-9874-z.

Ethical approval reference: UDOL- 05YK-2015-16

Extent of the intellectual and practical input by me;

Formulation (e.g., research design, ethics application) 100%

Execution (e.g., data collection) 10%

Analysis 100%

Publication 80%

5. Kotera, Y., Green, P., & Van Gordon, W. (2018) Mental wellbeing of caring profession students: Relationship with caregiver identity, self-compassion, and intrinsic motivation. *Mindfulness and Compassion*, 3(2), 7-30.

Ethical approval reference: 011017YKDSPG

Extent of the intellectual and practical input by me;

Formulation (e.g., research design, ethics application) 100%

Execution (e.g., data collection) 60%

Analysis 100%

Publication 80%

6. Kotera, Y., Green, P., & Sheffield, D. (2018). Mental health attitudes, self-criticism, compassion, and role identity among UK social work students. *British Journal of Social Work*. doi: 10.1093/bjsw/bcy072.

Ethical approval reference: 011017YKDSPG

Extent of the intellectual and practical input by me;

Formulation (e.g., research design, ethics application) 90%

Execution (e.g., data collection) 60%

Analysis 100%

Publication 80%

7. Kotera, Y., Conway, E., & Van Gordon, W. (2019) Mental health of UK university business students: Relationship with shame, motivation and self-compassion. *Journal of Education for Business*, 94(1), 11-20. doi: 10.1080/08832323.2018.1496898

Ethical approval reference: 030717YKEC

Extent of the intellectual and practical input by me;

Formulation (e.g., research design, ethics application) 90%

Execution (e.g., data collection) 10%

Analysis 100%

Publication 80%

8. Kotera, Y., Sheffield, D., & Van Gordon, W. (2018) The applications of neuro-linguistic programming in organisational settings: A systematic review of psychological outcomes. *Human Resource Development Quarterly*. doi: 10.1002/hrdq.21334

Ethical approval reference: NA as it is a review

Extent of the intellectual and practical input by me;

Formulation (e.g., research design) 80%

Execution (e.g., data collection) 90%

Analysis 80%

Publication 80%

9. Kotera, Y., Conway, E. & Van Gordon, W. (2018). Ethical judgement in UK business students: Relationship with motivation, self-compassion and mental health. *International Journal of Mental Health and Addiction*. doi: 10.1007/s11469-018-0034-2

Ethical approval reference: 030717YKEC

Extent of the intellectual and practical input by me;

Formulation (e.g., research design) 90%

Execution (e.g., data collection) 10%

Analysis 100%

Publication 80%

10. Kotera, Y., Gilbert, P., Asano, K., Ishimura, I. & Sheffield, D. (2018). Self-criticism and self-reassurance as mediators between mental health attitudes and symptoms: Attitudes towards mental health problems in Japanese workers. *Asian Journal of Social Psychology*. doi: 10.1111/ajsp.12355

Ethical approval reference: 88-14-YK

Extent of the intellectual and practical input by me;



Formulation (e.g., research design) 80%

Execution (e.g., data collection) 90%

Analysis 80%

Publication 70%

### **Annex 2: Status and referee arrangements for each journal.**

All of these papers are published in peer-reviewed academic journals. Their scopes include mental health, social psychology, cross-cultural psychology, and occupational/organisational psychology, targeting international audiences. I chose those journals in order to appeal to a wide range of audience, as discussed in my appraisal. Referees were arranged from the editorial boards or invited expert reviewers by the editorial boards.