

## Research Note

# Year 11 Pupils' Education and Employment Possible Selves: The methodological challenges of measuring representational constructs

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## Contextualisation

Educational research commonly uses psychological constructs to measure people's perceptions. Descriptions of constructs are often drawn from prior research, such as 'self-esteem' or 'self-efficacy', yet some studies develop constructs inductively to suit their purpose, sample and setting. The current study used the established concept of possible selves to gather information on Year 11 pupils' employment aspirations, hopes and fears, in an investigation of how their impending school leaving examinations might affect the self-concept. Possible selves are "individuals' ideas about what they might become, what they would like to become, and what they are afraid of becoming" (Markus and Nurius, 1986, p 954). As future-oriented constructions created by our knowledge, values and motives, possible selves fit psychologist George A. Kelly's description of 'representational constructs' (1955) or personally held interpretations of the world. This paper is a methodological account of a selection of the challenges imposed by representational constructs in operationalisation and measurement.

**Abstract:** *For many pupils, the pressures of sitting the General Certificate in Secondary Education (GCSE) examinations and of making a career choice coalesce during the final year of English compulsory schooling (Year 11). This observation, made whilst teaching, prompted a survey of 200 Year 11 pupils in Derby city to investigate their choice and evaluations of post-16 destinations in comparison to their most hoped and feared for future selves. The survey was informed by a combination of vocational and self-concept psychological theories. From the latter, of particular importance was the notion of possible selves and a coding scheme developed for these by Oyserman and colleagues, as reported in Unemori et al (2004). In their form as representational constructs, possible selves present various practical and epistemological challenges to researchers. This paper explores these in relation to the design and administration of the survey and to the analysis and reporting of the survey data. The results are discussed in comparison to prior possible selves research, revealing that when achieving an 'agreed objective standard' of definition, the construct of possible selves yields data that aligns to the environmental context of the research, hence improving its status as a valid construct for future use.*

## Operationalising Constructs

The initial constructs of *employment*, *hopes* and *fears* were chosen for use in a survey of 200 pupils of school leaving age (15-16). These constructs needed to be clearly defined before they could be operationalised, which is to bring into being, through the survey. They were initially thought to be part of the self-concept, following prior research that perceives this as the seat of career choice (Ginzberg *et al*, 1951; Super, 1953; Holland, 1985) and the internalised form of potential educational anxieties or pressures (Shapka and Keating, 2005; Zanobini and Usai, 2002). As pupils' employment focuses were situated for after Year 11, they entailed an element of future orientation and in this were recognized as aspirations, or

'things I want to achieve'. Hopes fitted easily into this description, as did fears as an 'inverse' construct. Ginzberg *et al* (1951) perceive career aspirations as the product of imagining oneself in a future role. This concept of aspiration as a 'self-definition' closely aligns with Markus and Nurius' (1986) description of possible selves as "individuals' ideas about what they might become, what they would like to become, and what they are afraid of becoming" (p 954). It was decided that possible selves were a more appropriate construct for use in the study than aspirations as their form made implicit that future-oriented conceptions be centred around the self, hence producing results that focused more closely on the self-concept.

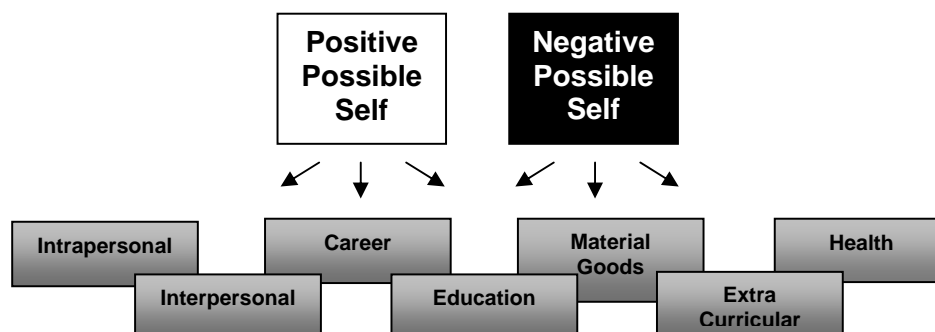
Since their conception in 1986 by psychologists Hazel Rose Markus and Paula Nurius, possible selves have been used to investigate various manifestations of adolescent behaviour such as delinquency (Oyserman and Saltz, 1993; Oyserman and Markus, 1990), academic achievement and engagement (Oyserman *et al*, 2005; 2002), ethnicity (Kao, 2000), self-regulation (Oyserman *et al*, 2004) and career choice (Packard and Nguyen, 2003). When studied, possible selves are often separated into positive self-conceptions that are aspired to and negative images of self that the person wishes to avoid. An example of a hoped for, or 'positive' possible self is the girl who envisions herself rewarded with a desired college placement after securing good results in her GCSE examinations. A feared for or 'negative' self could be the boy who imagines himself unable to play football over summer because of an old injury that is threatening to reoccur. Their original description by Markus and Nurius in 1986 is commonly cited when introducing the concept in possible selves research, in an approach towards achieving some standardisation in definition. In some cases this outline has been extended to "cognitive manifestations of enduring goals, aspirations, motives, fears, and threats" (Markus and Nurius, 1987, p 158), or simplified to "positive and negative images of the self already in a future state" (Oyserman *et al* in press). The current study's constructs of hopes or aspirations were felt to be well described by what people "would like to become" and fears or inverse aspirations by "what they are afraid of becoming" (Markus and Nurius, 1986, p 954). As possible selves in prior studies had been coded by their primary content into seven categories that included 'career', it was felt that job related possible selves were a strong enough domain for independent analysis. Therefore the employment construct was operationalised as pupils' choice of realistic job for the future, and in this became an 'employment' possible self. By refining the fairly broad construct of aspiration into that of 'possible selves', a more specific examination of career choice, hopes and fears as part of the self-concept ensued.

After deciding which selves to use, a challenge lay in further operationalising them through the survey. Here, choices had to be made about how to distinguish their exact shape in relation to the sample and to the purposes of the study. In prior research, possible selves had been measured in structured interviews, semi-structured interviews and in open-ended and close-ended questionnaires, without the existence of a standard measure. The lack of standard measure has prompted several key possible selves researchers to publish methodological excerpts (open-ended question formats and coding schemes) in journal articles (Unemori *et al*, 2004; Oyserman *et al*, 2004; Waid and Frazier, 2003), to promote an 'agreed objective standard' (Coolican, 2004). The current research decided to use the most common method of measuring possible selves: the written open-ended question, in order to gather results that would achieve this benchmark. Another issue was that previous research only prompted reports of positive and negative possible selves, without asking for selves in particular domains such as employment. Hence it was necessary for this research to use novel wording for the employment selves. Pupils were asked to '*please choose one job that you think you will realistically go into after finishing education*' then to write this job in the space provided. Here, information was gathered that could be compared to local *Connexions* data. (*Connexions* is England's careers education guidance and advice service which operates primarily with young people.) Pupils' job choices were coded into a 19 category occupational sector coding frame, compiled from the 14 specialised diplomas to be introduced into the British education system in 2008. Several diplomas such as 'creative arts

and media' were split into two separate items to allow a more refined response. Additional categories of 'police and armed forces' and 'administrative' were included. This frame achieved an inter-rater coder agreement of 100% when coding 25% of responses and was therefore highly reliable.

For pupils' hopes and fears, the wording from Oyserman *et al*'s measure (2004) was used in the first design of the survey. Pupils were asked 'Who will you be next year? Each of us has some image or picture of what we will be like and what we want to avoid being like in the future. Think about next year -- imagine what you'll be like, and what you'll be doing next year. In the lines below, write what you expect you will be like and what you expect to be doing next year'. The suitability of the question wording was assessed in a pilot study conducted with one class of 30 pupils. All pupils were asked to annotate the questionnaire alongside filling it in, to indicate which questions (if any) were difficult to understand. In addition, pupils of low to high achievement, including a pupil stated for dyslexia, were prompted to explain their understanding of the questions through rephrasing them to the researcher. No pupils reported or were observed to have difficulty answering the possible selves prompts, however a few commented that the questions were too lengthy. Hence the wording for the final questionnaire was simplified and included the terms positive and negative to operationalise the construct more closely with the expressions used in the literature. The positive possible self prompt (transposed into the negative for the fears section) was altered to read: 'We all spend time thinking or daydreaming about the future. What **positive** or happy thing that might happen after Year 11, do you honestly daydream or think about the most? Please write a brief description of this thing in the box below'.

This modification of wording may have reduced the comparability of findings with that of Oyserman *et al* (2004). It also stands that the current survey took place in England with 15 and 16 year olds, whereas Oyserman surveyed in the USA with 13 and 14 year olds, hence her results may have differed in cultural context from my own. To account for these potential variations, the responses from the final questionnaire were ordered into an inductive coding scheme which was then compared to an established scheme as developed for American adolescents by Oyserman and colleagues (1990, 1995, 2004) and used in Unemori *et al* (2004). The inductive coding scheme was formed from 25% of responses (*total sample N* = 200, *School A* (25%) *n* = 23, *School B* (25%) *n* = 27) and included the categories of *recognition, partner/sex/love, family/children, employment, education and lifestyle quality*. These were deemed to be similar or as the same to the established categories of *intrapersonal, interpersonal, career, education, extracurricular, attainment of material goods and health-related* therefore the established scheme was selected in order to improve comparability.



**Figure 1.** Content of Positive and Negative Possible Selves  
Adapted from Unemori *et al* (2004)

The scheme's relevance to the data was tested on 25% of responses drawn randomly from the total questionnaire pool by two coders who reached an inter-rater coder agreement of 97%. This figure was taken to indicate that the possible selves construct used in my study approached the 'agreed objective standard' of international research. In hindsight, a comparison of inter-rater coder agreement ratings between both schemes should have occurred. Furthermore, it is worth mentioning that the responses were more than likely to fit the system of coding as firstly, the survey questions were designed around an existing measure and secondly, the established codes' exhaustive powers were likely to originate from their broad scope. Hence in any study, constructs are likely to be *part researcher, part participant* constructed.

## Constructs as Representations

Following George Kelly's (1955) logic, possible selves entail the combination of self-oriented knowledge and estimate phenomena that is based on observation, hence they are representational. Unlike a physical phenomenon such as the movement of water, possible selves cannot be seen or touched or directly measured as they exist within the mind. Possible selves are made available to researchers when a person communicates their self-conceptions. Here, possible selves are subject to two layers of representation: the first in their construction and the second in their externalisation as self-reports. Hypothetically, self-reports may prompt the creation of a possible self that was previously undistinguished in thought. Therefore we must be aware that when measuring and discussing possible selves, their true form lies somewhere between their initial construction and their representation to us, as appropriate to each participant and research scenario. These representation issues present serious challenges to researchers.

A quick fix solution to this problem is to advise researchers to interpret their findings subjectively, only ever commenting on these as possibilities and not as standard truths. However, the current study used explicit techniques to assist the generation of authentic responses, as well as following the above advice. The first was developed to address concerns that participants may not have formed their reported possible self prior to the survey. To assess this, a tick box was given under each possible self open-ended question, that asked 'did you ever think about this thing before today?: answer yes or no'. This technique extends Oyserman and Markus' (1990) three week test-retest reliability study where 90% of respondents reported at least two of the three possible selves reported three weeks earlier. The majority of my participants replied that they had previously considered their realistic job (94%), hopes (92%) and fears (80%) before filling in the questionnaire. A further item '*time spent thinking about this possible self*' was included in a series of items designed to assess pupils' feelings about their possible selves. Using ANOVA, the means of this item were compared across selves to show that pupils were significantly less likely to spend less time *thinking* about their fears than any of their other possible selves ( $p < 0.011$ ), hence partially explaining its lower construct validity. This may derive from the 'negative' psychological affects of dwelling on fears, as the self-concept tends to be positively oriented (Markus and Wurf, 1986) and activities that cause harm to the self-concept are often avoided (Oyserman, in press). A further issue lay in whether the employment possible selves prompt would bias pupils' hopes and fears through its placement at the beginning of the survey. To address this, the positive and negative prompts included '*This does not have to have anything to do with a job, although it can do*'. It is suggested that further examinations (when possible) administer their research tools in a variety of settings, times and orders to prevent this from occurring.

## Comparing Representational Constructs

A final challenge lay in making adequate comparisons between the possible selves. As representational constructs, logic would determine their composition as that of varying sense data (observations), ordered by values and motives. The overall ‘form’ of the selves had already been compared by content, however this resulted in frequency data which did not satisfy the aim of discovering ‘the extent’ to which pupils were focused on their future-oriented employment, hopes and fears. Using theory from James (1897) and Markus and Wurf (1987), a hierarchy of multiple-self conceptions was seen to exist within the self-concept. To discover the position of selves in relation to each other within individuals and across the self-concepts of the sample, variables representing pupils’ evaluation of the possible selves were included in the survey. The first variable of *likelihood* was based on prior possible selves studies which used the concept of ‘likelihood’ to come true (Dunkel, 2000; Knox *et al*, 2000). This and the second variable of *value* were indicated in Oyserman and Markus’ seminal work on possible selves and delinquency (1990), where Oyserman remarked that to incur motivation, a pupil “must come not only to *value* this end-state, but also to *believe* he is capable of it” (p 122). Aligning with the notion that possible selves impel motivation (a feature also of Markus and Nurius’ 1987 article), and drawing from Oyserman *et al*’s (2004) study into possible selves as self-regulators, it was thought important to include a third variable of *self-regulation* to partially indicate motivation through pupils’ reported actions towards achieving or avoiding a possible self. The resulting contents and evaluations of selves were combined in the discussion to create a more holistic picture of the findings. In this instance, both measurement and analysis employed triangulation, as multiple forms are seen to be more reliable than one in representing a construct (Openheim, 2004).

## Results

The final section of this paper will report the results of the hopes and fears in relation to studies from Oyserman *et al* (2004), Oyserman and Markus (1990) and Dunkel (2000). A summary of these studies along with my own is given in Table 1. Here, possible selves are abbreviated into PPS for positive and NPS for negative.

**Table 1.** Summary of Results used in Comparison

Study	Age Rang	Sample Size and Setting	PPS	NPS	Likelihood by Gender
Symonds (2007)	15-16 years	200 State school England	20% education <b>50%</b> employment	<b>48%</b> education 9% employment	PPS $M = 5.1, F = 6.4^*$ NPS $M = 6.1, F = 6.4$
Oyserman <i>et al</i> (2004)	12-13 years	168 State school USA	<b>82%</b> education	<b>36%</b> education	NA
Oyserman and Markus (1990)	13-16 years	108 State school youth only (4 samples) USA	<b>32%</b> education 14% employment	<b>23%</b> education	NA
Dunkel (2000)	17-25 years	227 University USA	Mean number of selves by gender $M = 38.87$ $F = 37.66$	Mean number of selves by gender $M = 14.83$ $F = 14.87$	PPS $M=3.8, F=3.8$ NPS $M= 3.5, F=3.6$

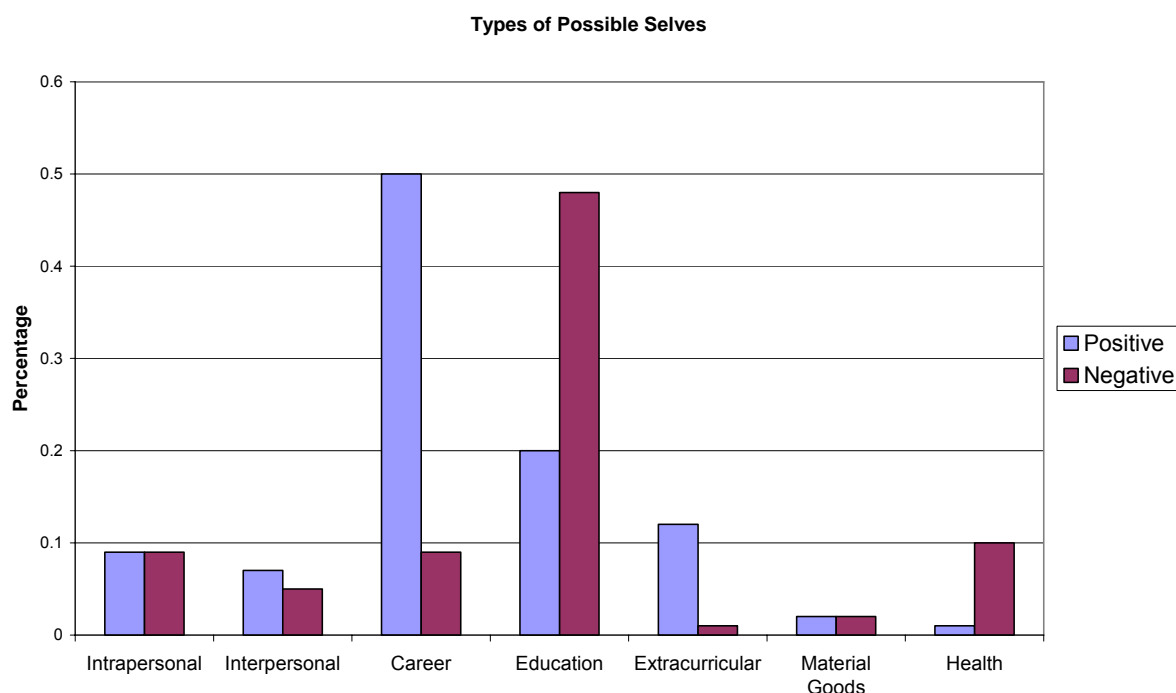
Percentages in bold represent the most commonly reported possible self for each valence.

Percentages rounded to one decimal place.

\* =  $p. <0.05$ .

*Patterns of findings.* The table shows us that education is the most reported type of negative possible self amongst the first three studies. However, its appearance as most popular dwindles as the samples increase in age. In Oyserman *et al* (2004), pupils have at least three further years of compulsory schooling and potentially relating to this, 82% of their hopes surround education. The sample of 13-16 year olds in Oyserman and Markus (1990) include those of school leaving age, hence potentially explaining their choice of 32% educational and 14% employment oriented positive possible selves as job opportunities may have increased in relevance. In my study of potential school leavers (aged 15-16) the choice of positive employment selves increases to 50% whereas education surrounds only 20% of their hopes. This comparison of findings suggests that as pupils get closer to school leaving age they extend their positive self-conceptions towards employment yet that perhaps due to their current position as school pupils, their fears remain education centred.

In the current study, no group differences were observed for gender, ethnicity, socioeconomic status, level of achievement or type of school in the reporting of possible selves. Chi square analysis revealed significant differences between the types of possible selves that were reported within hopes (PPS) ( $\chi^2 = 218.124$ ,  $df = 6$ ,  $p < 0.001$ ) and fears (NPS) ( $\chi^2 = 215.337$ ,  $df = 6$ ,  $p < 0.001$ ).



**Figure 2.** Percentages of Positive and Negative Possible Selves in the Current Study

When combining the percentages of education (20%) and employment (50%) within hopes, and respectively within fears (9% and 48%), the figures for most common positive (70%) and negative (57%) possible selves become more comparable to Oyserman *et al* (2004), (*education* = 82% hopes and 36% fears). This may suggest that pupils' educational and occupational successes and failures can be considered as part of their overall 'career', when considering prior descriptions of the term as a 'life process' (Chen, 1998, p 437) or a person's 'course through life' (Bloomer and Hodkinson, 2000, p 590). As previously stated, the current sample most feared educational failure (48%) and most hoped to achieve their employment aspirations (50%). Their high amount of educational fears compared to Oyserman *et al* and Oyserman and Markus' samples might relate to the pressure of having to sit their school leaving examinations in two months time. The emphasis on having to

choose a post-16 education, employment or training destination for after Year 11 might therefore explain their likelihood to have an employment focused hope. However, a further contributor to may have been the arrangement of the survey prompts where the realistic job self was requested immediately before pupils' hopes and fears, hence biasing pupils towards hoping for employment.

When analysing hopes and fears through the evaluation variables, these were held to be similar in value (PPS = 7.2, NPS = 7.1) yet pupils were more motivated by their fears (PPS = 6.1, NPS = 6.9) which they held as being more likely to occur (PPS = 5.7, NPS = 6.2). Using the content findings of possible selves as discussed above, it can be said that pupils equally valued getting good grades in their GCSE examinations and finding a job yet were more motivated towards job seeking, a scenario which they attached more realism to. Dunkel (2000) also tested possible selves for likelihood yet did not find any significant differences between the perceived likelihood of positive and negative selves to come true. Dunkel does not report the content of selves so it is impossible to speculate on why this was. There were no gender differences in Dunkel's study, however in my study, girls rated their hopes as more valuable ( $M = 8.2$  vs.  $M = 6.6$ ,  $F = 14.033$ ,  $df = 1$ ,  $p < 0.001$ ), more likely to occur ( $M = 6.4$  vs.  $M = 5.1$ ,  $F = 9.964$ ,  $df = 1$ ,  $p < 0.001$ ), and as incurring more motivation ( $M = 6.7$  vs.  $M = 5.7$ ,  $F = 6.192$ ,  $df = 1$ ,  $p = 0.014$ ), than boys. My suggestion is that in 'strongly' valuing their possible selves and believing that they can occur, girls may be more likely to formulate behaviours towards achieving or avoiding them. This subject would be an interesting line of research into boys' underachievement. A final observation on Dunkel's study is that his sample generated more positive selves than negative, a finding that is potentially in line with my discovery of fears being thought about the least.

## Conclusion

As the evaluation items were developed uniquely for the current survey, they did not yield data that was able to be tested for statistical significance compared with other studies, hence only approximate comparisons were made. However, when analysing my findings alongside those of Oyserman *et al* (2004) and Oyserman and Markus' (1990), a trend in education and employment possible selves was indicated in relation to the different cultural and age-specific contexts of the investigations. This suggests that the representational construct of possible selves used in the current study is reasonably valid, as it fits a pattern existing in other research. However, it remains a challenge to improve methods of testing the construct's validity, and of doing so with different methods of data gathering. In this or in any type of approach, the detail with which one describes a representational construct will operationalise it and determine the data collection and analysis. Hence in order to test established representational constructs, this paper advises researchers to consider approaching 'agreed objective standards' by using pre-established definitions in the first instance of data collection. The final conclusion of this paper is to use subjectivism in interpretation, as no matter which attempts at securing validity are used, representational constructs will always be relative by nature.

## References

- Bloomer, M. and Hodkinson, P. (2000) Learning Careers: continuity and change in young people's dispositions to learning. *British Educational Research Journal* 26, 5, 583-597.
- Chen, C. (1998) Understanding Career Development: a convergence of perspectives. *Journal of Vocational Education and Training* 50, 3, 437-461.

- Coolican, H. (2004) *Research Methods and Statistics in Psychology*, (4<sup>th</sup> edition) London: Hodder Arnold.
- Dunkel, C. S. (2000) Possible Selves as a Mechanism for Identity Exploration. *Journal of Adolescence* 23, 5, 519-529.
- Ginzberg, E. and Ginzberg, S. W., Axelrad, S. and Herma, J. (1951) *Occupational Choice: an approach to a general theory*. New York: Columbia University Press.
- Holland, J. (1985) *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments* (2<sup>nd</sup> Edition). Prentice-Hall, NJ: Englewood Cliffs.
- Kao, G. (2000) Group Images and Possible Selves Among Adolescents: Linking Stereotypes to Expectations by Race and Ethnicity. *Sociological Forum* 15, 407-430.
- Kelly, G. A. (1955) *The Psychology of Personal Constructs*, Norton: New York.
- Knox, M., Funk, J., Elliot, R. and Bush, E. (2000) Gender Differences in Adolescent's Possible Selves. *Youth and Society* 31, 3, 287-309.
- Markus, H. and Wurf, E. (1986) The Dynamic Self-Concept: A Social Psychological Perspective. *Annual Review of Psychology* 38, 299-337.
- Markus, H. and Nurius, P. (1986) Possible Selves. *American Psychologist* 41, 954-969.
- Markus, H. and Nurius, P. (1987) Possible Selves: The Interface Between Motivation and Self-Concept, in K. Yardley and T. Honess (eds) *Self and Identity: Psychological Perspectives*. New York: Wiley and Sons.
- Mead, G. H. (1934) *Mind Self and Society*. Chicago: University of Chicago Press.
- Oppenheim, A. N. (2004) *Questionnaire Design, Interviewing and Attitude Measurement, New Edition*. London, New York: Continuum.
- Oyserman, D. and Markus, H. R. (1990) Possible selves and delinquency. *Journal of Personality and Social Psychology* 59, 1, 112-125.
- Oyserman, D. and Saltz, E. (1993) Competence, Delinquency and Attempts to Attain Possible Selves. *Journal of Personality and Social Psychology* 65, 2, 360-374.
- Oyserman, D., Terry, K. and Bybee, D. (2002) Possible Selves – Intervention to Enhance School Involvement. *Journal of Adolescence* 25, 3, 313-326.
- Oyserman, D., Bybee, D., Terry, K. and Hart-Johnson, T. (2004) Possible selves as roadmaps. *Journal of Research in Personality* 38, 130-149.
- Oyserman, D. and Fryberg, S. (2006) The Possible Selves of Diverse Adolescents: content and function across gender, race and national origin, in C. Dunkel and J. Kerpelman (eds) *Possible Selves: Theory, Research and Applications*. New York: Nova Science Publishers.
- Oyserman, D. and Fryberg, S. (2006). The possible selves of diverse adolescents: Content and function across gender, race and national origin. In C. Franklin, M. Harris, and P. Allen-Meares (eds) *School Social Work and Mental Health Worker's Training and Resource Manual*. Oxford: Oxford Press.



- Oyserman, D., Bybee, D. and Terry, K. (in press) Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*.
- Packard, B. W-L. and Nguyen, D. (2003) Science Career-Related Possible Selves of Adolescent Girls: A Longitudinal Study. *Journal of Career Development* 29,4, 251-263
- Shapka, J. D. and Keating, D. P. (2005) Structure and change in self-concept during adolescence. *Canadian Journal of Behavioural Science* 37, 2, 83-96.
- Super, D. (1953) 'A Theory of Vocational Development', *American Psychologist*, 8, 185-190.
- Waid, L. D. and Frazier, L. D. (2003) Cultural differences in possible selves during later life. *Journal of Aging Studies* 17, 3, 251-268.
- Unemori, P., Omeregic, H., and Markus, H. R. (2004) Self-Portraits: Possible Selves in European-American, Chilean, Japanese and Japanese-American Cultural Contexts. *Self and Identity* 3, 321-338.
- Zanobini, M. and Usai, C. (2002) Domain specific self-concept and achievement motivation in the transition from primary to low middle school. *Educational Psychology* 22, 2, 203-217.