'OF NEVER QUITE KNOWING WHAT I MIGHT BE': USING CHAOS COUNSELLING WITH UNIVERSITY STUDENTS

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This study examined the efficacy of video-based chaos counselling of university students. In this study, 42 university students watched a video that presented student case studies emphasising chaotic concepts. Career decision-making measures and measures of stress were taken one week prior, immediately after and one week after the video presentation. The chaos intervention had a positive impact on career decision-making self-efficacy and career exploration behaviours. Overall, the results support the use of a chaos video intervention. Implications for careers practice and future research are discussed.

The chaos theory of careers (Pryor & Bright, 2003a; 2003b) provides an alternative theoretical approach to the traditional trait-factor career counselling interventions. While there are many points of difference in terms of the characterisation of careers, the environment, and the processes of decision making between chaos and traditional approaches (see Bright & Pryor, in press; McKay, Bright & Pryor, in press), one fundamental difference is how uncertainty is treated in each approach. Traditional approaches to career counselling seek to reduce or eliminate uncertainty in career decision making by reducing so-called extraneous information and focusing on an individual's trait interests and matching these to a suitable job. In contrast, the chaos theory of careers incorporates uncertainty as an integral element in career decision making. Within the chaos approach, uncertainty provides opportunities for creativity and learning. Therefore, counselling must not only acknowledge uncertainty, but assist clients in developing strategies to survive and thrive on career uncertainty. Chen (2004) noted uncertainty is an issue facing many individuals and job seekers, particularly as they are exposed to changes

in the workplace. In dealing with this uncertainty, individuals have to make adjustments and be flexible about planning their working life and career.

The chaos theory of careers (Pryor & Bright, 2003a; 2003b) views an individual constructing their careers through purposeful action. The four cornerstones of the chaos approach are:

1. Complexity—of human experience and the range of potential influences on people's careers, in particular, the influences of objective and subjective context (Bright, Pryor, Wilkenfeld & Earl, in press; Patton & McMahon, 1999, Young & Valach, 2004);
2. Change— the dynamic, interactive and adaptive nature of human functioning in the world and in making career decisions and taking career action (Chen, 2004; Savickas & Baker, in press);
3. Constructiveness—the tendency of humans to construe and construct experiences and perceptions into meaningful and often unique interpretive structures for understanding themselves, their experiences and their world (Savickas, 1997); and
4. Chance—unplanned and unpredictable events and experiences that are often crucial and sometimes determinative in the narrative of people's careers (Bright, Pryor & Harpham, 2005; Krumboltz, 1998; Krumboltz & Levin 2004). Such a perspective is responsive to the changing nature of work and careers, and a post-modern view of careers. Individual's career development is characterised as being influenced by unplanned events, luck and serendipity. However, people are also able to respond and adapt to their environments, even if these unpredictable events have a profound effect (Pryor & Bright, 2004).

The chaos theory approach is the antithesis of what we have termed a 'deeply superficial' test-and-tell approach. Our mission is to develop the theory and research underpinning the chaos theory approach, but at the same time to develop practical instruments and processes to allow practitioners to work with it. In the university context, career counselling resources are sparse, and interventions requiring in-depth multiple sessions from highly trained counsellors is not a realistic prospect. McKay et al. (in press) reported promising results from an in-depth face-to-face chaos counselling approach with students, so the question we pose here is whether student–clients exposed to chaotic approaches through a short video has any positive effect on career-related behaviour. To this end, we produced a short video containing interviews with students describing chaotic concepts as they applied in their careers. Whitaker, Phillips and Tokar (2004) used a videotape intervention in their study about career counselling. The researchers discovered that video is an effective medium for information delivery and that it had a significant influence on the university students in their study. From another perspective, Krausz (2004) argued that film and the media have an important role in educating people about career choices and decisions. The purpose of this study is to determine the effect of a chaos theory intervention on career decision-making self-efficacy and career exploration behaviours and intentions.

'Showing students examples of fellow students capitalising on chance events and coping with uncertainty and change should serve to normalise such events'

Hypotheses

Showing students examples of fellow students capitalising on chance events and coping with uncertainty and change should serve to normalise such events, and illustrate how it is possible to make career decisions under such circumstances. From a chaos theory perspective, viewing a video intervention showing the influence of chaos, chance and unplanned events should lead to a significant increase in career decision-making self-efficacy. It is hypothesised that:

1. Participants should report higher career decision-making self-efficacy immediately after the intervention when compared to pre-intervention.
2. The chaos video intervention will significantly increase participants' reports of career exploration intentions and behaviours immediately post-intervention, as compared to pre-intervention.
3. Reports of career decision-making self-efficacy will have a significant positive relationship with reports of career exploration behaviour and intentions for participants in the study.

METHOD

Design

The study employs a single factor (chaos intervention) with repeated measures (time: pre-intervention, immediately after intervention, one week later) design. The dependent variables were career decision-making self-efficacy, career exploration intentions, career exploration behaviours and career stress.

Participants

Forty-two students from the University of New South Wales (UNSW) student population participated in this study. Students were recruited via advertisements placed on the UNSW Careers and Employment website, Careers and Employment email news list and other advertisements around the university campus. First-year psychology students who participated in the study were awarded two hours credit towards their course.

Materials

The chaos video contained information aimed at increasing participant awareness of four crucial chaos theory elements in career choice and development: complexity, change, constructiveness and chance (Pryor & Bright, 2003a; 2003b). The video was approximately 15 minutes in length and featured two actors (one male and one female) posing as recent graduates, who discussed their personal career decisions, experiences and development during their late adolescent and early adult years. The actors did not attempt to persuade viewers to their objectives and the content of the actors' conversations was based on profiles of real UNSW graduates.

The two graduates (a male with an engineering background, and a female with a psychology background) were shown each answering five different questions asked by an off-screen interviewer. Each graduate initially provided a brief overview of their career situation, and then responded to the questions, each of which was based on the reality checklist exercise developed by Pryor and Bright (2005). Chaos theory-related themes covered in the questioning included: the non-linearity of change, the necessity of taking risks, the unknown, the influence of unplanned events, the inevitable limitations of our current information, and the value of intuition versus rational thoughts in decision making. The chaos video production was edited so that the male and female graduates alternated their questions and responses, with the male speaking first. Each set of questions was preceded with a slide displaying one statement mirroring the chaos theory-related themes (mentioned above) covered in the questions.

To ensure consistency, the video displayed:

- graduates of similar age groups;
- native English-speaking graduates with high-level oral presentation skills;
- graduates wearing clothing of a neutral colour during the taping process; and
- consistent background conditions for all graduate testimonials.

Instruments

Career Decision-Making Self-Efficacy Scale – Short Form (CDMSE–SF)

The *Career Decision-Making Self-Efficacy Scale (CDMSE)* 'measures an individual's degree of belief that he/she can successfully complete tasks necessary to making career decisions' (Betz & Taylor, 2001, p. 6). The short form eliminates five of the ten items from each of the five *CDMSE* scales. These scales are: accurate self-appraisal; gathering occupational information; goal selection; making plans for the future; and problem solving. Five items reflect each competency area. The test authors recommend that the short form questionnaire is appropriate to use as a pre-post measure of an evaluation of career interventions. For this study, one amendment was made to the questions. The word 'major' was substituted for 'major/study plan' to make the content of the *CDMSE–SF* more culturally Australian.

Reliability for the *CDMSE–SF* is based on a US sample of students. Internal consistency reliability coefficients (alpha) range from 0.73 to 0.83 for the subscales and 0.94 for the total scale score (Betz, Klein & Taylor, 1996). In our study, the reliability coefficients (alpha) ranged from 0.64 (the next lowest being 0.76) to 0.87.

Career Exploration Survey (CES)

Stumpf, Colarelli and Hartman (1983) first developed the *Career Exploration Survey (CES)* for use with young adults. Using three career explo-

ration dimensions, the *CES* measures six beliefs about exploration, seven dimensions of the exploration process, and three reactions to exploration.

For the purposes of this study, only scales from the exploration process and reactions to exploration dimensions were used. Environmental exploration was measured using five items from the environment exploration scale of the *CES*. The scale measures reported behaviour over the past three months, for example 'investigated career possibilities'. Self-exploration was measured using four items from the self-exploration scale of the *CES*. Again, the scales measures reported behaviour over the past three months, for instance 'been retrospective in thinking about my career'. Exploration stress was assessed using three items from the exploration stress scale of the *CES*. The scale measures to what extent do certain career exploration issues lead to stress, for example 'looking for a job'. Exploration stress was measured on a seven-point Likert scale, where 1 = Insignificant compared to other issues with which I have to contend and 7 = One of the most stressful issues with which I have had to contend. Four items from the decisional stress scale of the *CES* measured decisional stress. Once more, the scale measures to what extent certain career decision issues lead to stress, such as 'deciding on a specific job'. The same Likert scale was used for decisional stress as exploration stress. Results from the studies support the reliability and construct validity of the *CES* (Blustein, 1989; Stumpf et al., 1983). Each of these variables has exhibited acceptable internal consistency (0.89 and 0.82 for the environmental and self exploration scales respectively). In another study, the internal consistency reliability coefficients (alpha) were 0.72 for exploration stress scale and 0.88 for decisional stress scale (Bartley & Robitschek, 2000). In this study, scale reliabilities (alpha) ranged from 0.73 to 0.91.

Career Exploratory Plans or Intentions Scale (CEPI)

The five-item *CEPI* scale was designed to measure an individual's intentions or plans to engage in behaviour relevant to career decision making. An example of one of the items is 'I plan to talk to lots of people about careers'. The scale is measured on a five-point Likert scale, where 1 = Strongly disagree and 5 = Strongly agree. Reliability for the *CEPI* is based on 350 psychology students from a large US university. The coefficient alpha for the scale was 0.73. In another study of high school students in the US (Ochs & Roessler, 2001), the reliability coefficients were 0.81 for a sample of 95 special education students and 0.72 for 99 general education students. In this study, the scale reliabilities ranged from 0.74 to 0.83.

Procedure

The participants were tested either individually or tested as a group and completed the outcome measures individually.

Time I. Students who volunteered to participate in the study were emailed the questionnaires (containing the outcome measures: *CDMSE–SF*, *CES* and *CEPI*) as an attachment, or downloaded the questionnaires from the UNSW Careers and Employment website or School of Psychology website. The participants completed the measures individually and either sent them back to the researcher or brought the questionnaires along in person to Time II. Participants were also provided written information about the study and given a consent form to sign. All participants who completed the measures were then invited to attend a session to watch a career education video.

Time II. Participants attended a session lasting approximately 30–40 minutes on campus. The participants were shown the chaos video. Immediately after the intervention, the participants completed the same measures they completed in the initial data collection stage. Participants were thanked for their participation and debriefed. They were then given a reply paid envelope with the same set of measures, with instructions to complete the questionnaires one week later.

Time III. After one week, participants were contacted via email and asked to complete the measures and send them back to the researcher in the envelope provided. The researcher then compared the measures at Time I, II and III.

Results

Prior to testing the hypotheses proposed for this study, the scores on all variables were calculated for the sample. These total scores were used to assess the effect of the intervention, watching the chaos video, on the career and career stress measures. Means and standard deviations relating to the pre- and post-

intervention measures of the chaos intervention are presented in Table 1.

In observing the mean totals across all times for all variables, it can be seen that no obvious intervention effect is present for all career measures. However, overall career decision-making self-efficacy appears to have increased post-intervention, as does environmental exploration. Considering the *CEPI*, it can be seen that *CEPI* levels are high (M = 20.21, SD = 3.32) in comparison to the total maximum score possible for this scale.

Planned within subjects comparisons were conducted to determine whether results were different between Time I and the post-intervention times for all career measures in the study. The alpha level was set at 0.025 to control for Type 1 error for the pairwise comparisons. Paired t-tests produced significant differences between overall career decision-making self-efficacy (*CDMSE*) ($t(41) = -2.47$, $p<0.025$, 95 per cent CI 0.61 to 6.1; $\eta^2 = 0.13$) from Time I to Time II. In addition, a significant difference was found between environmental exploration ($t(41) = -3.09$, SD = 14.07, $p<0.01$, 95 per cent CI 2.33 to 11.10; $\eta^2 = 0.19$) from Time II to Time III. No other significant results were calculated for the remaining measures of interest, indicating these measures stayed constant

TABLE 1: PRE-, POST- AND FOLLOW-UP INTERVENTION MEANS AND STANDARD DEVIATIONS FOR *CDMSE–SF*, *CES* AND *CEPI*.

	Time Phases					
	Pre-intervention		Post-intervention		Follow-up	
Scale	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
CDMSE–SF[1]	82.90	15.76	86.26	15.13	86.93	16.28
Self appraisal	17.33	3.49	18.10	3.48	18.21	3.73
Occupational information	15.90	3.11	16.83	3.82	16.62	4.09
Goal selection	16.62	3.64	17.29	3.53	17.62	3.55
Planning	16.45	3.86	16.81	3.88	17.29	3.92
Problem solving	16.60	3.89	17.24	3.54	17.19	3.78
CES[2]						
Environmental exploration	14.05	4.79	14.31	4.71	21.02	15.39
Self exploration	15.98	5.02	15.67	4.95	15.07	5.54
Exploration stress	10.67	4.44	11.36	4.67	10.31	4.57
Decisional stress	14.74	6.76	14.48	6.17	13.98	5.05
CEPI[3]	20.21	3.32	20.36	3.07	19.52	3.75

Note: CDMSE–SF = Career Decision-Making Self-Efficacy Scale–Short Form; CES = Career Exploration Survey; CEPI = Career Exploratory Plans and Intentions Scale.

1 Scores on each CDMSE–SF scale range from 5–25, where higher scores indicate higher degree of perceived self-efficacy in completing career decision-making tasks. The total overall possible scale score is 125.

2 Scores on the environmental exploration and self exploration scales can range from 6–30 and 5–25 respectively, with higher scores indicating more engagement in career exploration activities. Scores on the exploration stress and decisional stress scales range from 3–21 and 4–28 respectively, with higher scores indicating greater undesirable stress in relation to career and job decisions.

3 Scores on CEPI range from 5–25 where higher scores indicate greater intentions or plans to engage in behaviour relevant to career decision making.

over time. Thus, the primary prediction, that the chaos intervention would have a significant effect on all career measures, is not demonstrated by the comparison of means from the t-tests.

As part of exploring the relationship between the three career measures of the study, correlations were assessed to evaluate the relationship between the *CDMSE–SF*, *CES* (environmental and self exploration only) and *CEPI*. At Time I, *CDMSE* was significantly and positively correlated with self exploration ($r = 0.32$, $p<0.05$). At Time II, *CDMSE* was significantly and positively correlated with environmental exploration ($r = 0.34$, $p<0.05$) and self exploration ($r = 0.42$, $p<0.01$). At Time III, *CDMSE* was significantly and positively correlated with self exploration ($r = 0.38$, $p<0.05$) and *CEPI* ($r = 0.35$, $p<0.05$). These results meet the prediction that *CDMSE* has a positive relationship with engagement in the career exploration process.

To explore the relationship between the three stress measures and the *CDMSE–SF*, correlations were also assessed. At Time I, overall *CDMSE* had significant and negative correlation with exploration stress ($r = -0.34$, $p<0.05$) and decisional stress ($r = -0.32$, $p<0.05$). By comparison, at Time II and Time III, overall *CDMSE* was significantly and negatively correlated with exploration stress ($r = -0.32$, $p<0.05$) and decisional stress ($r = -0.39$, $p<0.05$) respectively. These correlations indicate that as *CDMSE* increases, career exploration stress decreases, meeting the predicted relationship between these factors.

'Participants reported greater belief in their ability to make career decisions after watching a chaos video'

Discussion

The results of this study support the expectation that exposure to a chaos career intervention would have a significant positive influence on the career decision-making self-efficacy of university students. The effectiveness of the intervention also continued to remain stable at the one week follow-up. Participants involved in this study reported greater belief in their ability to make career decisions after watching a chaos video depicting conversations from recent graduates. These results support the findings of McKay et al. (in press) in their study of the effectiveness of a chaos careers intervention. Furthermore, these results support the findings that career decision making is increased after a career intervention (Amundson, 2003; Luzzo & Day, 1999; Luzzo, Funk & Strang, 1996; Slaney & Lewis, 1986; Sullivan & Mahalik, 2000).

Stumpf et al. (1983) advise that in considering the career exploration factors, environmental exploration is most helpful for assisting people to focus on the job search process, while self exploration is more helpful in focusing people on making vocational decisions. One somewhat unexpected result is that environmental exploration increased between post-intervention and the one week follow-up. Hence, while the chaos intervention did not have a significant effect immediately, the intervention effect was present one week later. The result partially meets the hypothesis that the chaos intervention would have a positive effect on career exploration behaviour. Perhaps this increase in reported environmental exploration is related to the timing of the experiment. Conducted in the second session of the academic year, some students would have been actively seeking employment and exploring their career prospects in preparation for commencement of work and/or further study. Given the items in the *CES* environmental and self exploration scales require the respondents to be retrospective ('indicate to what extent you have behaved in the following ways over the last 3 months'), it may be that the intervention was influential. Possibly, having watched the video, the students were inspired to explore job and career options in the week following the intervention. Werbel (2000) reports from his study of graduating university students that environmental exploration had more impact on the amount of job seeking when compared to the influence of self exploration. He suggests that increased levels of environmental exploration have immediate benefits to students seeking work, as it may aid the job seeking process.

By comparison, the chaos intervention did not have a positive impact across all reports of career exploration behaviours and intentions. These results conflict with the expectation that a chaos intervention would have an equivalent effect on behaviours and intentions as it did on career decision-making self-efficacy. The fact that all reports of career

exploration behaviours and intentions were not significantly influenced by the chaos careers intervention may be due to a number of factors. Importantly, it is possible that because the chaos video focused mostly on how people make career decisions, this may explain why it had the greatest effect on career decision-making self-efficacy. Perhaps the video content was not broad enough to influence the students' overall career exploration. Building on this, students' career exploration intentions were already at a moderately high level prior to watching the chaos video. The chaos video would have needed to have a powerful influence on the students to increase their career exploration intentions further. Another possible explanation might be due to the shared variance between the predictors, as career exploration plans and intentions shared variance with career decision-making self-efficacy. As anticipated, career decision-making self-efficacy was found to have a significant positive relationship with career exploration behaviour and intentions. Thus, it can be observed that students believing they have the ability to make career decisions are also likely to report engagement in the career exploration process. These results support the findings of Blustein and colleagues (Blustein, 1989; Blustein et. al., 1994) and Betz and Klein (1997). Brown, Darden, Shelton and Dipoto (1999) assessed the relationship between career exploration and career decision-making self-efficacy, and discovered that beliefs about exploration behaviour were a significant predictor of career decision-making self-efficacy. The researchers surmise that an individual's beliefs about their ability to job search, or find work related to their career, indicates that they have some confidence in their capacity for career decision-making.

Implications for careers practice

Importantly, the results of this study demonstrate that a chaos theory of careers approach can be incorporated into an effective practical career intervention. In a careers setting, the concepts of chaos, chance and unplanned events may be used as another method to explore individuals' career decision making (Bright, 2003). Findings from this study show that using video in career practice can be an effective medium for encouraging change in students' career decision-making capabilities. Providing students with realistic excerpts of graduates discussing their career paths can be influential in increasing career decision-making self-efficacy. How much the influence of the chaos perspective of careers had in affecting students' thoughts and behaviours is unclear. However, it can be seen that even a brief intervention, such as the video used, can have an effect on students.

Results from this study also lend support to careers practitioners considering the links between career decision-making self-efficacy and the career exploration process. Assessing an individual's beliefs about their ability to make career decisions can help a practitioner to determine how to facilitate the career decision-making process and thus engage in career and job exploration. An undecided person may experience great difficulty in investigating their career options or exploring the world of work. Betz (2004) outlines a number of ways of integrating a self-efficacy approach to career counselling. Similar to the intervention used in this study, Betz recommends that real role models, or role models that appear in mediums such as television or film, may be helpful in increasing an individual's self-efficacy and exploring their career options.

Digital video is a practical tool as it can be viewed using a television or computer. Advances in technology also mean that digital videos can be hosted on a website and viewed online, giving students with access difficulties the chance to benefit from this intervention. Whitaker et. al. (2004) recommend that a video intervention may be integrated into information students view on a computer, without great difficulty. For practitioners, video is a cost-effective medium for delivering advice to clients. Although video does not replace the role of careers practitioners, it is a medium that is comparable to delivering workshops.

Limitations and suggestions for future research

There are some limitations to this research. Results from this study cannot be easily generalised due to the small sample size. Deeper investigation into potential demographic differences between the students was not explored, as this was not useful for such a small sample size. With a larger sample size, researchers could look to see whether issues such as stage of degree program or amount of work experience have any impact on career decision making or career exploration.

The fact that this present study did not use a control group to compare to the group of students exposed to the chaos career video affects interpretation about the effectiveness of the chaos intervention. The results support that there was an intervention effect using the chaos approach. However, it is not possible to be sure whether any careers focused video would have had the same effect.

Also, further research into the use of the video intervention would help establish the effectiveness of the video. Perhaps changing the demographics (i.e. ethnicity, study program, career path) of the people playing the role of the graduates to complement the background of the target population would help. Some people may be more open to influence if the role models have similar characteristics to themselves.

In summary, using a practical application of the chaos theory of careers effectively influences beliefs about the ability to make career decisions and engagement in the career exploration process. The concepts of chaos, chance, luck and unexpected events may help an individual to explore aspects of their career decision making and efforts towards job and career exploration. Recognising the influence of stress in relation to career exploration is also important and worthy of attention. Finally, employing video as a medium for the delivery of career information has its utility in a careers setting, particularly with the potential benefits of being a cost effective intervention.

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THEORY AND PRACTICE

This section is designed as a brief professional review of the article. It provides relevant study questions and answers for readers to test their knowledge of the article.

What did the chaos video depict?

Answer: The video contained interviews with two actors posing as graduate students. Chaos theory related themes covered in the questioning included: the non-linearity of change, the necessity of taking risks, the unknown, the influence of unplanned events, the inevitable limitations of our current information, and the value of intuition versus rational thoughts in decision making.

What were the main findings?

Answer: Consistent with previous work by McKay et al. (in press), it was found that the chaos video appeared to be successful in increasing the career-related self-efficacy of the students who watched it.

What are the implications of this finding?

Answer: Although on the face of it chaos theory approaches to careers appear to be complex and difficult to convey to a client, in fact clients readily understand the key tenets from a brief exposure to a simple video.