

Competitive Orientations and the Type A Behavior Pattern

Bill Thornton¹, Richard M. Ryckman², Joel A. Gold²

¹Department of Psychology, University of Southern Maine, Portland, USA;

²University of Maine, Orono, USA.

Email: thornton@usm.maine.edu

Received March 23rd, 2011; revised May 16th, 2011; accepted June 21st, 2011.

Differences in competitive orientations were examined in relation to two components of the Type A behavior pattern, Achievement Strivings and Impatience-Irritability, that have differential implications for achievement performance and health. As expected, *hypercompetitiveness* was not related to Achievement Strivings, but positively correlated with Impatience-Irritability. In contrast, *personal development competitiveness* related positively to Achievement Strivings, but was not related to Impatience-Irritability. Hypercompetitiveness was not related to actual academic achievement either, but personal development competitiveness was positively correlated. Hypercompetitiveness was associated with greater self-reported health problems, whereas personal development competitiveness was associated with fewer health problems. Results further corroborate the discriminant validity of the hypercompetitive and personal development competitive construct and suggest negative psychosomatic implications for the hypercompetitive individual.

Keywords: Competition, Hypercompetitiveness, Type A, Health, Achievement

Introduction

The Type A behavior pattern is characterized by exaggerated achievement strivings, a heightened degree of competitiveness and hostility, and impatience associated with an aggressive struggle to achieve more in less time (Friedman & Rosenman, 1974). Although the Type A behavior pattern may be associated with greater achievement and success (Glass, 1977; Matthews, Helmreich, Beane, & Lucker, 1980; Waldron et al., 1980), it may also increase the risk for general health problems and illness, including hypertension and coronary heart disease (Byrne, 1992; Friedman & Booth-Kewley, 1987; Friedman & Rosenman, 1974; Jenkins, Zyzanski, & Rosenman, 1971; Price, 1982; Rosenman, 1993; Rosenman, Swan, & Carmelli, 1988; Suls & Marco, 1990).

Separate independent components within the Type A behavior pattern may contribute differentially to either positive or negative consequences where achievement and health are concerned (Booth-Kewley & Friedman, 1987; Helmreich, Spence, & Pred, 1988; Jex, Adams, Elacqua, & Bachrach, 2002; Palmero, Diez, & Asensio, 2001; Rosenman, 1991; Spence, Helmreich, & Pred, 1987; Spielberger et al., 1985). In particular, the predisposing factor for health-related problems seems to consist of excessive competitiveness, impatience, anger, hostility, and aggressiveness (Booth-Kewley & Friedman, 1987; Johnson, 1990; Rosenman, 1991). For example, utilizing the Jenkins' Activity Survey (Jenkins et al., 1971, 1979), Spence and her colleagues (Spence et al., 1987; Spence, Pred & Helmreich, 1989; Pred, Helmreich, & Spence, 1987) identified two separate components within the Type A behavior pattern: *Achievement Striving*, characterized by a hard-driving task orientation, taking one's work seriously, and expending effort to achieve; and *Impatience-Irritability*, reflecting time urgency, anger, hostility, and aggressiveness. The Impatient-Irritability component is comparable to the JAS-S (Speed-Impatience)

factor that is associated with cardiac reactivity and characteristic of people prone to cardiovascular disorders (e.g., Palmero et al., 2001). Research indicates Achievement Striving is positively associated with academic and occupational performance, but not related to health problems; in contrast, Impatience-Irritability is positively associated with health problems, but unrelated to performance (Barling & Boswell, 1995; Barling & Charbonneau, 1992; Bluen, Barling, & Burns, 1990; Chidester, 1990; Conte, Mathieu, & Landy, 1998; Day & Jriege, 2002; Spence et al., 1987, 1989).

Spence et al. (1987) focused particular attention on the role of interpersonal competitiveness as it is often an inherent component to many achievement situations, and one of the three dimensions included in their assessment of intrinsic achievement motivation (see Helmreich & Spence, 1978; Spence & Helmreich, 1983). Although their conception of competitiveness was generally a healthy enjoyment of competition and a desire to win, such competitiveness was positively correlated with both Achievement Striving and Impatience-Irritability and was a correlate of poor health (Spence et al., 1987) and poor performance on achievement tasks (Spence & Helmreich, 1983; Spence et al., 1987). Whereas some degree of competitiveness may be normal and inherent in achievement strivings, excessive competitiveness may be unwarranted and perhaps would prove particularly counterproductive. Spence et al. (1987) observed that competitiveness might sometimes have a "hostile, aggressive tinge to it" that may negatively impact on both health and performance (p. 527). Indeed, Rosenman (1991) suggested that it was this inappropriate or excessive competitiveness associated with the Type A behavior pattern that was the "toxic factor" as far as increased risk for coronary heart disease was concerned (i.e., the "hard-driving competitiveness" of Booth-Kewley & Friedman, 1987).

Karen Horney's (1937) notion of *hypercompetitiveness*, a neurotic need to compete indiscriminately and to win at any or

all cost, is conceptually consistent with the inappropriately excessive, hostile, hard-driving competitiveness associated with the toxic component of the Type A behavior pattern (i.e., Birks & Roger, 2000; Booth-Kewley & Friedman, 1987; Rosenman, 1991). A hypercompetitive orientation is characterized by behavior that is not only hostile and aggressive toward others, but also manipulative and exploitive of them. Further, Horney considered such excessive competitive strivings to be a maladaptive means of maintaining and enhancing feelings of self-worth. Consistent with her contention that hypercompetitiveness is based in neurosis and would detrimentally impact on personality and behavior, there is considerable research evidence that hypercompetitive individuals are indeed less psychologically healthy than those not so hypercompetitive. For example, hypercompetitive individuals tend to be low in self-esteem, self-actualization, interpersonal trust, and forgiveness of others and also are high in destructive narcissism, Machiavellianism, authoritarianism, dogmatism, and the need to control and dominate others (Collier, Ryckman, Thornton, & Gold, 2010; Dru, 2003; Ryckman, Hammer, Kaczor, & Gold, 1990; Ryckman, Libby, Van Den Borne, Gold, & Lindner, 1997; Ryckman, Thornton, & Butler, 1994; Ryckman, Thornton, Gold, & Burckle, 2002; Watson, Morris, & Miller, 1998). Moreover, research has indicated that hypercompetitive individuals are indeed highly neurotic and, in particular, their neurotic tendencies are grounded in anger and hostility toward others (Ross, Rausch, & Canada, 2003).

In stark contrast to hypercompetitiveness, *personal development competitiveness* reflects an alternative healthy, positive competitive orientation (Ryckman & Hamel, 1992; Ryckman et al., 1996, 1997). Similar to Spence et al.'s general notion of competitiveness as a healthy enjoyment of competition and a desire to win, those characterized by this competitive orientation are indeed highly motivated to win and succeed. However, such individuals have learned to compete *with* (rather than against) others in order to achieve their personal goals. And, while they may certainly desire to win and be successful, it would not be at any cost or at the expense of others. Moreover, they may focus less on the task outcome (i.e., win or lose) and more on the enjoyment inherent in the task itself (i.e., task mastery and the self-discovery, self-improvement, and personal growth gained through competition). This personal development competitive orientation is associated with various indicators of social and psychological health, correlating positively with self-esteem, achievement, affiliation, forgiveness, concern for the welfare of others, while negatively correlated with neuroticism, dominance, and aggressiveness (Collier et al., 2010; Ryckman & Hamel, 1992; Ryckman, Hammer, Kaczor, & Gold, 1996; Ryckman, Libby, Van Den Borne, Gold, & Lindner, 1997).

The present research sought to explore further the distinction between these two competitive orientations and, in particular, their respective associations with the Achievement Striving and Impatience-Irritability components of the Type A behavior pattern. In particular, it was expected that hypercompetitiveness would not be related to Achievement Striving, but positively correlate with Impatience-Irritability. In contrast, personal development competitiveness would be positively correlated with Achievement Strivings, but not related to Impatience-Irritability. Of additional interest was to see whether the two competitive

strivings would differentially relate to actual academic achievement and physical health reports as well. Considering the maladaptive nature of hypercompetitiveness, it was expected to be negatively associated with actual academic achievement and positively associated with health-related complaints. Personal development competitiveness was expected to have an opposite pattern of relationships.

Method

Participants and Procedure

Undergraduate students, 140 men (*M*_{age} = 23.8) and 166 women (*M*_{age} = 24.4), volunteered to participate in this study in exchange for extra credit in their psychology course at a public university in the northeast. Group sessions were held during which the students completed a set of questionnaires ostensibly to obtain baseline data for comparison purposes in subsequent research. Upon completion, students were thanked for their participation and provided an explanation of the research purpose and contact information should they desire further information.

Assessment Instruments

Hypercompetitive Attitude Scale. Ryckman et al.'s (1990) 26-item scale provided for a reliable and valid assessment of individual differences in hypercompetitive attitudes. Sample items include "Winning in competition makes me feel more powerful as a person" and "I find myself being competitive even in situations that do not call for competition." Item responses are made on a five-point scale, "never true of me" (1) to "always true of me" (5) with higher total scores reflecting a greater hypercompetitive orientation. The internal consistency of this scale in the present study was .87.

Personal Development Competitive Attitude. This is a reliable and valid 15-item assessment of a psychologically healthy competitive orientation concerned more with personal growth and development than individual attainment (Ryckman et al., 1996). Individual items are responded to on a five-point scale, *strongly disagree* (1) to *strongly agree* (5). Sample items include: "Competition helps me develop my abilities more" and "I value competition because it helps me to be the best that I can be." Higher scores are indicative of a greater personal development competitive attitude. The internal consistency of this scale in the present study was .90.

Type A Behavior Pattern. Spence et al.'s (1987) adaptation of the Jenkin's Activity Scale provided for separate assessments of the two components of the Type A behavior pattern previously discussed. The seven-item *Achievement Strivings* factor focuses on achievement-related attitudes and behavior. Sample items are "Nowadays, do you consider yourself to be: very hard-driving or very relaxed and easy going?" and "How seriously do you take your work?" The five-item *Impatience-Irritability* factor is concerned with anger, impatience, and irritability. Sample items are "Do you tend to do things in a hurry?" and "Typically, how easily do you get irritated?" All items are responded to using a five-point scale with appropriately labeled end-values (e.g., 1 = never, 5 = always). Scoring was such that higher scores reflected greater Achievement Strivings and Impatience-Irritability; internal consistencies of the two scales in

the present study were .76 and .70, respectively.

Academic Achievement. Actual academic achievement was assessed using the cumulative grade-point average (GPA) of the participants a year following the semester in which data for the present study was collected. The number of semesters included in the students' GPA varied among students; the modal number of semesters completed by participants in the present study was four; median credit hours completed was 35.

Health Survey. Included in the questionnaire set was the 22-item "health survey" used by Spence and Helmreich (1987). Among the health events listed were headaches, backaches, feeling down or depressed, fatigue or exhaustion, rashes, tightness in the chest, indigestion, constipation, colds and flu, and substance abuse. Participants indicated how often each specific physical health event had occurred during the past year using a five-point scale, "never" (1) to "very frequently" (5). Item responses are summed so that higher total scores indicated greater self-reported health problems. Internal consistency for this assessment in the present study was .89.

Social Desirability Scale. A short form of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) was used to assess an individual's tendency to seek approval by responding to statements in a socially desirable manner. This was included as a possible control for social desirability response bias. Sample items from the 13-item scale are "I'm always willing to admit when I make a mistake" and "I sometimes feel resentful when I don't get my way." Each item is responded to as either "true" or "false" with points accumulated for every item responded to in a socially desirable manner. Thus, higher scores would reflect greater predisposition to respond in a socially desirable manner; internal consistency of these items in the present study was .86.

Results and Discussion

Social Desirability Response Bias. Initial correlational analyses indicated significant relationships between social desirability and other individual difference assessments. In particular, individuals predisposed to present themselves in a socially desirable manner expressed higher Achievement Striving ($r = .20$), less Impatience-Irritability ($r = -.34$), less hypercompetitiveness ($r = -.41$), and more personal development competitiveness ($r = .17$; all $ps < .05$ or better). Partial correlation analyses were conducted in order to control statistically for the influence of social desirability response bias, however, this did not appreciably alter the strength of relationships among the different assessments. As such, it is the zero-order correlation coefficients that are presented in Table 1 and discussed here.

Competitive Orientation and Type A Behavior. Achievement Strivings and Impatience-Irritability components of the Type A behavior pattern were not highly correlated with one another ($r = .14$, $p < .05$), and were related on a magnitude similar to that previously observed (e.g., Pred et al., 1987; Spence et al., 1987). As expected, hypercompetitiveness was not associated with Achievement Strivings ($r = .08$, *ns*), but was positively correlated with Impatience-Irritability ($r = .36$, $p < .01$), the Type A component implicated in increased risk for coronary heart disease. In contrast to hypercompetitiveness, and consistent with expectations, the personal development competitive orientation was positively associated with Achievement Strivings ($r = .24$,

Table 1.

Correlation coefficients among assessment scales.

	AS	I-I	HC	PDC	HP	GPA
Achievement Strivings	-	.14 ^a	.08	.24 ^c	.05	.30 ^c
Impatience-Irritability		-	.36 ^c	.04	.32 ^c	.08
Hypercompetitiveness			-	-.05	.21 ^c	.09
Personal Development Competitiveness				-	-.36 ^c	.23 ^c
Health Problems					-	-.08

Note: $n = 306$; ^a $p < .05$; ^b $p < .01$; ^c $p < .001$.

$p < .001$), but not correlated with Impatience-Irritability ($r = .04$).

Actual Academic Achievement. The Achievement Striving component of Type A behavior was positively related to students' grade-point average ($r = .30$, $p < .001$), whereas Impatience-Irritability was not ($r = .08$). This pattern is similar to that of previous research (e.g., Spence et al., 1987, 1989). Consistent with a desire to succeed along with a concern for personal growth, personal development competitiveness was positively associated with actual academic performance ($r = .23$, $p < .001$). Hypercompetitiveness was not significantly related to actual achievement ($r = -.08$) and suggests that both hypercompetitive and non-hypercompetitive individuals may demonstrate comparable academic performance. As previously noted, the hypercompetitive person is more likely to be engaged in academic pursuits for extrinsic, rather than intrinsic, reasons (e.g., Ryckman et al., 1990). Specifically, while hypercompetitive individuals may value working hard to achieve success (Ryckman et al., 1997), they strive for success primarily to win recognition and praise from others (Horney, 1937). When such attention is not forthcoming, their motivation to pursue a goal may diminish rapidly, resulting in deep disappointment and even depression (Ryckman et al., 1990). Thus, their motivation to succeed through consistent pursuit of a goal is variable and may keep them from being as successful as they want or could be in many situations.

Health Problems. The Impatience-Irritability component of the Type A behavior pattern correlated positively with self-reported health problems ($r = .32$, $p < .001$), but Achievement Strivings did not ($r = .05$). This is consistent with previous research (e.g., Spence et al., 1987, 1989). Personal development competitiveness was negatively associated with reported health problems ($r = -.36$, $p < .001$). In contrast, hypercompetitiveness was positively associated with health problems ($r = .21$, $p < .001$). The negative health implications associated with the Type A behavior pattern are not associated with Achievement Strivings, but instead relate consistently to another component of Type A, whether it be characterized as Impatience-Irritability (Spence & Helmreich, 1987), Speed-Impatience (Furnham, 1990; Palmero et al., 2001), anger, hostility and aggressiveness (Gray, 1990; Johnson, 1990; Swan, Carmelli, & Rosenman, 1991), or hard-driving competitiveness (Booth-Kewley & Friedman, 1987). Any and all of these characterizations are embodied in the hypercompetitive personality construct (Horney, 1937), but are atypical of personal development competitiveness (Ryckman et al., 1996). And common to them all may be the fast activation, heightened reactivity, and slow recovery of the autonomic nervous system in response to cognitive and psychomotor activity that is characteristically associated with

the Type A personality's poor prognosis for hypertension and coronary heart disease (Gray, 1990; Harbin, 1989; Palermo et al., 2001; Pffiffner, 1989).

General Conclusion

Overall, the present results provide further support for the independent distinction between the Type A behavior components, Achievement Striving and Impatience-Irritability. These results also provide further support for the concurrent and discriminant validity of the hypercompetitiveness and personal development competitiveness constructs. Hypercompetitiveness was not related to Achievement Strivings, but did correlate positively with Impatience-Irritability, the Type A behavior component implicated in increased risk for hypertension and coronary heart disease. In addition, this psychologically unhealthy competitive orientation did not relate to actual academic achievement, but was associated with greater self-reported health problems. In contrast, personal development competitiveness related positively to Achievement Strivings while having no association with Impatience-Irritability. This healthy competitive orientation was associated with greater actual academic achievement and fewer reported health problems.

In addition to continuing to examine the personality and behavioral correlates of these two competitive orientations, future research should also direct attention to the psychosomatic implications for the hypercompetitive personality. In particular, whereas the present study relied on self-reported health problems, subsequent research may utilize other, more objective, assessments of health-related problems in general (e.g., medical records) and risk-factors for hypertension and coronary heart disease in particular. And, in consideration of the Type A personality's highly reactive and slow-to-recover autonomic nervous system, it would be interesting to see whether hypercompetitive individuals have the same physiological propensity.

References

- Adams, J., Priest, R. F., & Prince, H. T. (1985). Achievement motive: Analyzing the validity of the WOFO. *Psychology of Women Quarterly*, 9, 357-370. doi:10.1111/j.1471-6402.1985.tb00886.x
- Barling, J., & Boswell, R. (1995). Work performance and the achievement strivings and impatience-irritability dimensions of Type A behaviour. *Applied Psychology: An International Review*, 44, 143-153. doi:10.1111/j.1464-0597.1995.tb01071.x
- Barling, J., & Charbonneau, D. (1992). Disentangling the relationship between the achievement striving and impatience-irritability dimensions of Type A behavior, performance, and health. *Journal of Organizational Behavior*, 13, 369-377. doi:10.1002/job.4030130405
- Birks, Y., & Roger, D. (2000). Identifying components of type-A behaviour: "Toxic" and "non-toxic" achieving. *Personality and Individual Differences*, 28, 1093-1105. doi:10.1016/S0191-8869(99)00159-2
- Bluen, S. D., Barling, J., & Burns, W. (1990). Predicting sales performance, job satisfaction, and depression by using the achievement strivings and impatience-irritability dimensions of Type A behavior. *Journal of Applied Psychology*, 75, 212-216. doi:10.1037/0021-9010.75.2.212
- Booth-Kewley, S., & Friedman, H. S. (1987). Psychological predictors of heart disease: A quantitative review. *Psychological Bulletin*, 101, 343-362. doi:10.1037/0033-2909.101.3.343
- Byrne, D. G. (1992). The Type A behavior pattern and coronary heart disease. In D. G. Byrne and G. R. Caddy (Eds.), *Behavioral medicine: International perspectives, Volume 1. Developments in clinical psychology* (pp. 63-92). Westport, CT: Ablex Publishing.
- Chidester, T. R. (1990). Trends and individual differences in response to short-haul flight operations. *Aviation, Space, and Environmental Medicine*, 61, 132-138.
- Collier, S., Ryckman, R. M., Thornton, B., & Gold, J. A. (2010). Competitive personality attitudes and forgiveness of others. *Journal of Psychology*, 144, 535-543. doi:10.1080/00223980.2010.511305
- Conte, J. M., Mathieu, J. E., & Landy, F. J. (1998). The nomological and predictive validity of time urgency. *Journal of Organizational Behavior*, 19, 1-13. doi:10.1002/(SICI)1099-1379(199801)19:1<1::AID-JOB815>3.0.CO;2-E
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334. doi:10.1007/BF02310555
- Day, A. L., & Jreige, S. (2002). Examining Type A behavior pattern to explain the relationship between job stressors and psychosocial outcomes. *Journal of Occupational Health Psychology*, 7, 109-120. doi:10.1037/1076-8998.7.2.109
- Dru, V. (2003). Relationships between an ego orientation scale and a hypercompetitive scale: Their correlates with dogmatism and authoritarianism factors. *Personality and Individual Differences*, 35, 1509-1524. doi:10.1016/S0191-8869(02)00366-5
- Friedman, H. S., & Booth-Kewley, S. (1987). The "disease-prone personality": A meta-analytic view of the construct. *American Psychologist*, 42, 539-555. doi:10.1037/0003-066X.42.6.539
- Friedman, M., & Rosenman, R. H. (1974). *Type A behavior and your heart*. New York, NY: Knopf.
- Furnham, A. (1990). The Type A behaviour pattern and the perception of self. *Personality and Individual Differences*, 11, 841-851. doi:10.1016/0191-8869(90)90194-V
- Glass, D. C. (1977). *Behavior patterns, stress, and coronary diseases*. Hillsdale, NJ: Erlbaum.
- Gray, A. (1990). Individual differences in Type A behavior and cardiovascular responses to stress. *Personality and Individual Differences*, 11, 1213-1219. doi:10.1016/0191-8869(90)90147-J
- Harbin, T. J. (1989). The relationship between the Type A behavior pattern and physiological responsivity: A quantitative review. *Psychophysiology*, 26, 110-119. doi:10.1111/j.1469-8986.1989.tb03138.x
- Helmreich, R. L., & Spence, J. T. (1978). The work and family orientation questionnaire: An objective instrument to assess components of achievement motivation and attitudes toward family and career. *JSA Catalog of Selected Documents in Psychology*, 8, 35.
- Helmreich, R. L., Spence, J. T., & Pred, R. S. (1988). Making it without losing it: Type A, achievement motivation, and scientific attainment revisited. *Personality and Social Psychology Bulletin*, 14, 495-504. doi:10.1177/0146167288143008
- Horney, K. (1937). *The neurotic personality of our time*. New York, NY: Norton.
- Jenkins, C. D., Zyzanski, S. J., & Rosenman, R. H. (1971). Progress toward validation of a computer scored test for the Type A coronary prone behavior pattern. *Psychosomatic Medicine*, 33, 193-202.
- Jenkins, C. D., Zyzanski, S. J., & Rosenman, R. H. (1979). *JAS manual*. New York, NY: The Psychological Corp.
- Jex, S. M., Adams, G. A., Elacqua, T. C., & Bachrack, D. G. (2002). Type A as a moderator of stressors and job complexity: A comparison of achievement strivings and impatience-irritability. *Journal of Applied Social Psychology*, 32, 977-996. doi:10.1111/j.1559-1816.2002.tb00251.x
- Johnson, E. H. (1990). *The deadly emotions: The role of anger, hostility, and aggression in health and emotional well-being*. New York, NY: Praeger.
- Matthews, K. A., Helmreich, R. L., Beane, W. E., & Lucker, G. W. (1980). Pattern A, achievement striving, and scientific merit: Does pattern A help or hinder? *Journal of Personality and Social Psychology*, 39, 962-967. doi:10.1037/0022-3514.39.5.962
- Palmero, F., Diez, J. L., & Asensio, A. B. (2001). Type A behavior pattern today: Relevance of the JAS-S factor to predict heart rate re-

- activity. *Behavioral Medicine*, 27, 28-36.
doi:10.1080/08964280109595769
- Pfiffner, D. (1989). Type A behavior and its relations to psychophysiological reactivity: A review. *Activitas nervosa superior*, 31, 183-208.
- Pred, R. S., Helmreich, R. L., & Spence, J. T. (1987). The development of new scales for the Jenkins Activity Survey measure of the Type A construct. *Social and behavioral science documents*, 16, 51-52.
- Price, V. A. (1982). *Type A behavior pattern: A model for research and practice*. New York, NY: Academic Press.
- Reynolds, W. M. (1982). Development of reliable and valid short forms of the marlowe-crowne social desirability scale. *Journal of Clinical Psychology*, 38, 119-125.
doi:10.1002/1097-4679(198201)38:1<119::AID-JCLP2270380118>3.0.CO;2-I
- Rosenman, R. H. (1991). Type A behavior pattern and coronary heart disease: The hostility factor? *Stress Medicine*, 7, 245-253.
doi:10.1002/smi.2460070407
- Rosenman, R. H. (1993). Relationships of the Type A behavior pattern with coronary heart disease. In L. Goldberger and S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 449-476). New York, NY: Free Press.
- Rosenman, R. H., Swan, G. E., & Carmelli, D. (1988). Some recent findings relative to the relationship of Type A behavior pattern to coronary heart disease. In S. Maes, C. D. Spielberger, P. B. Defares and I. G. Sarason (Eds.), *Topics in health psychology*. Oxford: John Wiley & Sons.
- Ross, S. R., Stewart, J., Mugge, M., & Fultz, B. (2001). The imposter phenomenon, achievement dispositions, and the five-factor model. *Personality and Individual Differences*, 31, 1347-1355.
doi:10.1016/S0191-8869(00)00228-2
- Ryckman, R. M., & Hamel, J. (1992). Female adolescents' motives related to involvement in organized team sports. *International Journal of Sport Psychology*, 23, 147-160.
- Ryckman, R. M., Hammer, M., Kaczor, L. M., & Gold, J. A. (1990). Construction of a hypercompetitive attitude scale. *Journal of Personality Assessment*, 55, 630-639.
doi:10.1207/s15327752jpa5503&4_19
- Ryckman, R. M., Hammer, M., Kaczor, L. M., & Gold, J. A. (1996). Construction of a personal development competitive attitude scale. *Journal of Personality Assessment*, 66, 374-385.
doi:10.1207/s15327752jpa6602_15
- Ryckman, R. M., Libby, C. R., Van Den Borne, B., Gold, J. A., & Lindner, M. A. (1997). Values of hypercompetitive and personal development competitive individuals. *Journal of Personality Assessment*, 62, 84-94. doi:10.1207/s15327752jpa6201_8
- Ryckman, R. M., Thornton, B., & Butler, J. C. (1994). Personality correlates of the hypercompetitive attitude scale: Validity tests of Horney's theory of neurosis. *Journal of Personality Assessment*, 62, 84-94. doi:10.1207/s15327752jpa6201_8
- Ryckman, R. M., Thornton, B., Gold, J. A., & Burckle, M. A. (2002). Romantic relationships of hypercompetitive individuals. *Journal of Social and Clinical Psychology*, 21, 517-530.
doi:10.1521/jscp.21.5.517.22619
- Schroth, M. L. (1987). Relationships between achievement-related motives, extrinsic conditions, and task performance. *Journal of Social Psychology*, 127, 39-48.
- Spence, J. T., & Helmreich, R. L. (1978). *Masculinity and femininity: Their psychological dimensions, correlates, and antecedents*. Austin, TX: University of Texas Press.
- Spence, J. T., & Helmreich, R. L. (1983). Achievement-related motives and behavior. In J. T. Spence (Ed.), *Achievement and achievement motives: Psychological and sociological approaches* (pp. 10-74). San Francisco, CA: Freeman.
- Spence, J. T., Helmreich, R. L., & Pred, R. S. (1987). Impatience versus achievement strivings in the Type A pattern: Differential effects on students' health and academic achievement. *Journal of Applied Psychology*, 72, 522-528.
doi:10.1037/0021-9010.72.4.522
- Spence, J. T., Pred, R. S., & Helmreich, R. L. (1989). Achievement strivings, scholastic aptitude, and academic performance: A follow-up to "impatience versus achievement strivings in the Type A pattern." *Journal of Applied Psychology*, 74, 176-178.
doi:10.1037/0021-9010.74.1.176
- Spielberger, C. D., Johnson, E. H., Russell, S. F., Crane, R. J., Jacobs, G. A., & Worden, T. J. (1985). The experience and expression of anger: Construction and validation of an anger expression scale. In M. A. Chesney and R. H. Rosenman (Eds.), *Anger and hostility in cardiovascular and behavioral disorders* (pp. 5-30). New York, NY: Hemisphere/McGraw-Hill.
- Suls, J., & Marco, C. A. (1990). Relationship between JAS- and FTAS-Type A behavior and non-CHD illness: A prospective study controlling for negative affectivity. *Health Psychology*, 9, 479-492.
doi:10.1037/0278-6133.9.4.479
- Swan, G.E., Carmelli, D., & Rosenman, R.H. (1991). Cook and Medley Hostility and the Type A behavior pattern: Psychological correlates of two coronary-prone behaviors. In M. J. Strube (Ed.), *Type A behavior* (pp. 89-106). Thousand Oaks, CA: Sage Publications, Inc.
- Waldron, I., Hickey, A., McPherson, C., Butensky, A., Gruss, L., Overall, K., Schmader, A., & Wohlmuth, D. (1980). Type A behavior pattern: Relationship to variation in blood pressure, parental characteristics, and academic and social activities of students. *Journal of Human Stress*, 6, 16-27.
- Watson, P. J., Morris, R. J., & Miller, L. (1998). Narcissism and the self as continuum: Correlations with assertiveness and hypercompetitiveness. *Imagination, Cognition, and Personality*, 17, 249-259.