Cultural Differences in the Levels of Rewards between Adolescents from America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain

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Abstract

The intent of this study is to determine what items are reinforcing for high school students from different regions of the world including America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain. Additionally, the researchers sought to determine if there is a difference in the levels of rewards between individuals from America and individuals from these other countries.

Seven hundred and fifty high school students from seven countries participated in this study. The only requirement for inclusion in the study was current enrollment in high school in their native country. Subject ages ranged from 12 to 19 years, with a mean of 15.52 years. Students were administered a 63-item survey of reward preference called the SORT-2. The SORT-2 is in English (SORT-2-EV), Spanish (SORT-2-SV), and Korean (SORT-2-KV) versions.

Multiple between-subjects analysis of variance (ANOVA) was performed on data reflecting the effects of region. The ANOVA was significant for region in 24 of the 25 items in the sports domain, 22 of the 30 items in the activity domain, and in all of the eight items in the school activity domain. The bivariate analysis indicated that participants from America were most different from those in Honduras, Tanzania, and Spain. The least amount of difference was noted in comparisons with Australia and Denmark.

Keywords: rewards, reinforcing, high school, SORT-2

1. Introduction

According to operant conditioning theory, learning occurs when an association is formed between a stimulus and response (Skinner, 1984). The stimulus is any behavior that enhances the overall fitness of an organism while a response is an activity that affects the stimuli's occurrence or, simply, the consequence. A positive association between the stimulus and the response indicates that an organism's behavior was changed following the addition of a stimulus to the environment. The stimulus, in this case, can either be an event that was initiated or an item that was introduced that caused change in the organism's behavior. If this association is reinforcing, the response that follows the stimulus will increase the probability that the response will be repeated in the future (Baum, 2005). In operant conditioning theory, the combination of these two associations is called positive reinforcement. Positive reinforcement occurs when the addition of the stimulus increases the probability of a behavior occurring in the future (Skinner, 1984). The identification of naturally occurring contingencies capable of influencing behaviors (e.g., compliance) has been noted as an important early step in behavioral interventions (Bertsch, Houlihan, Lenz, & Patten, 2009).

Behavioral therapists apply the concept of positive reinforcement frequently during the course of behavioral change programs to shape new responses (Cautela & Kastenbaum, 1967). In order to affect behavior by manipulating its consequences, it is of great importance to accurately identify stimuli that could potentially be reinforcing (Kazdin, 1979). In shaping new responses, the reinforcing stimuli must be accurately identified or the behavioral change program will not work (Cautela & Kastenbaum, 1967). Properly identifying reinforcing

stimuli for a specific individual can be challenging and time consuming (Cautela & Kastenbaum, 1967; Houlihan, Jesse, Levine, & Sombke, 1991). This problem is compounded when one tries to identify specific rewarding stimuli for a group of individuals rather than for a single individual.

As a result, reinforcement surveys have been designed for specific populations in order to identify reinforcing stimuli for groups of similar individuals in an efficient and time effective manner (Cautela & Brion-Meisesls, 1979). The reinforcement surveys target normally developing children (Cautela & Brion-Meisels, 1979; Phillips, Fischer, & Singh, 1977), special needs children (Dewhurst & Cautela, 1980), inpatient psychiatric children (Jones, Latkowski, Kircher, & McMahon, 1988), autistic children (Atkinson, Jenson, Rovner, Cameron, VanWagenen, & Peterson, 1984), high school students (Houlihan, Jesse, Levine, & Sombke, 1991), and adults (Cautela & Kastenbaum, 1967).

In this study, the focus will be on reinforcer surveys for high school students. Past research has indicated that there is difficulty in determining which reinforcers are most rewarding for high school students for a variety of reasons. These reasons include high school students' developmental level, the difficulty in identifying cost-efficient rewards for high school students, their tendency to satiate quickly, and the reality that more powerful rewards are located outside of the school system (Houlihan et al., 1991). As a result, the Survey of Rewards for Teens (SORT; Houlihan et al.) was developed to identify which items are the most reinforcing for high school adolescents in an effective and time-efficient manner. The SORT is a 56-item self-report questionnaire that asks participants to rate the various items (i.e., sports, food, entertainment, excursions, music/crafts/hobbies, social activities, school-related activities) based on how rewarding each item would be to them.

In addition to the challenges posed when attempting to determine which reinforcers are most rewarding for high school students, further problems arise when one seeks to identify which reinforcers are most rewarding for individuals from different regions around the world. Individuals from similar regions of the world share a common culture or set of beliefs, customs, and skills. A stimulus that is most rewarding for one group of regionally or culturally similar individuals may not be the same as another group even if the individuals from both of the groups are the same age (Landrine, Richardson, Klonoff, & Flay, 1994). As a result, an item rated as highly reinforcing for a group of individuals from one region of the world may not be reinforcing for a group of individuals from another region of the world.

The intent of this current study is to determine what items are reinforcing for high school students from different regions of the world including America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain. Additionally, the researchers are interested in determining if there is a difference in the levels of rewards between individuals from America and individuals from Australia, Tanzania, Denmark, Honduras, Korea, and Spain. It was hypothesized that the greatest differences in the levels of rewards would be found between individuals from America and individuals from third-world countries (i.e., Tanzania, Honduras).

2. Method

2.1 Sample and Participant Selection

Seven hundred and fifty high school students from seven countries participated in this study. All of the subjects were selected to participate from their respective high schools. The only requirement for inclusion of the study was current enrollment in high school in their native country. Participation is this study was voluntary. Ages ranged from 12 to 19 years, with a mean age of 15.52 years. Fifty four point five percent were female (n = 409), 43.7 percent were male (n = 328), and 1.7 percent did not report their gender (n = 13).

Three hundred and twelve students from America completed the Survey of Rewards for Teens-2-English Version (SORT-2-EV) in the spring of 2008. Ages ranged from 13 to 19, with a mean of 16.2 years. Twenty-four students from Australia completed the SORT-2-EV in the spring of 2008. Ages ranged from 12 to 18, with a mean of 15.8 years. Ninety-eight students from Tanzania completed the SORT-2-EV in the fall of 2008. Ages ranged from 13 to 19, with a mean of 15.2 years. Thirty students from Denmark completed the SORT-2-EV in the spring of 2008. Ages ranged from 13 to 19, with a mean of 16.8 years. One hundred students from Honduras completed the Survey of Rewards for Teens-2-Spanish Version (SORT-2-SV) in the spring of 2008. Ages ranged from 12 to 19, with a mean of 13.7 years. One hundred students from Korea completed the Survey of Rewards for Teens-2-Korean Version (SORT-2-KV) in the spring of 2009. Ages ranged from 13 to 17, with a mean of 15.3 years. Eighty-six students from Spain completed the SORT-2-SV in the spring of 2009. Ages ranged from 13 to 19, with a mean of 15.29 years.

2.2 Materials

The SORT-2-EV was adapted from the Survey of Rewards for Teens (SORT; Houlihan et al., 1991). The original survey consisted of a 56-item self-report questionnaire in which participants rated items based on how rewarding each item would be to them based on a 5-point Likert scale. For the purpose of the current paper, the SORT was modified to capture the current preferences and interests of students in the different regions. The changes that were made were based on the results of a small pilot study. The pilot study indicated that 24 items were out-of date and should be omitted. It also provided a basis for updating the out-of date items and indicated that 31 new items needed to be included in the questionnaire. The final revised version of the questionnaire included 63 items. The SORT-2-EV was then translated into Spanish (SORT-2-SV) and Korean (SORT-2-KV) by a native speaker from each of the respective countries. Demographic information including age, gender, native country, and current residence was also collected from each participant.

2.3 Procedure

The SORT-2-EV was then administered to individuals from America, Australia, Tanzania, and Denmark. The SORT-2-SV was administered to individuals from Honduras and Spain. The SORT-2-KV was administered to individuals from Korea. Instructions directed participants to rate each item according to how rewarding each item would be to them based on a 5-point Likert scale.

3. Results

Multiple between-subjects analysis of variance (ANOVA) were performed on data reflecting the effects of region (i.e., America, Australia, Tanzania, Denmark, Honduras, Korea, Spain) on each item from the SORT-2. The estimated marginal means from the ANOVA were used to rank each individual survey item in the sport domain, activities domain, and school activities domain. The participants were classified according to region. The ten most rewarding sports domain items according to the participant's region is displayed in Table 1. The ten most rewarding activity domain items according to the participant's region is displayed in Table 2. The eight most rewarding school activity domain items according to the participant's region is displayed in Table 3.

Table 1. Ten most rewarding sport domain items from the SORT-2 for participants from America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain

Rank	America Item *M*	Australia Item *M*	Tanzania Item *M*	Demark Item *M*	Honduras Item *M*	Korea Item *M*	Spain Item *M*
1	Bike riding 3.41	Dancing 3.54	Exercising 3.34	Downhill ski 3.63	Bike riding 3.26	Bike riding 2.92	Bike riding 3.41
2	Swimming 3.39	Soccer 3.52	Running 2.89	Soccer 3.34	Soccer 3.14	Rollerblade 2.81	Exercising 3.20
3	Am football 3.27	Exercising 3.33	Tennis 2.74	Water skiing 3.20	Running 2.28	Soccer 2.72	Swimming 3.03
4	Exercising 3.27	Bike riding 3.22	Bike riding 2.66	Snorkeling 3.07	Exercising 2.19	Horseback 2.58	Soccer 2.75
5	Fishing 3.04	Swimming 3.22	Basketball 2.61	Ice skating 3.00	Flying a kite 2.10	Swimming 2.46	Basketball 2.43
6	Water skiing 3.09	Tennis 3.09	Dancing 2.60	Diving 3.00	Horseback 2.06	Dancing 2.35	Tennis 2.41
7	Weight lifting 2.98	Running 3.04	Flying a kite 2.44	Swimming 2.87	Basketball 2.04	Ice skating 2.25	Rollerblade 2.29
8	Ice skating 2.92	Horseback 2.92	Ice skating 2.31	Dancing Rollerblade 2.80	Fishing 1.66	Fishing 2.21	Running 2.25
9	Basketball 2.92	Snorkeling 2.83	Mini golf 2.21	Bike riding 2.79	Diving 1.41	Downhill ski 2.15	Dancing 1.49
10	Rollerblade 2.87	Basketball 2.79	Soccer 2.23	Basketball 2.72	Snorkeling 1.00	Tennis 2.06	Diving 1.48

Table 2. Ten most rewarding activity domain items from the SORT-2 for participants from America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain

Rank	America	Australia	Tanzania	Demark	Honduras	Korea	Spain
	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*
1	Friends 4.61	Friends 4.42	Shopping 4.85	Friends 4.73	Music 4.33	Movie 4.40	Music 4.60
2	Vacation 4.46	Movie Concert 4.13	Reading 4.16	Party Music 4.67	Visit relatives 3.90	Out to eat 4.30	Vacation 4.30
3	Party 4.41	Vacation 4.04	Party 4.07	Sleeping extra 4.57	Watching TV 3.80	Watching TV 4.28	Party 4.28
4	Longer curfew 4.39	Music 4.00	Out to eat 3.96	Vacation 4.40	Vacation 3.72	Music 4.11	Internet time 4.29
5	Sleeping extra 4.26	Party 3.96	Games/cards 3.90	Movie 4.21	Cell phone 3.71	Internet time 3.99	Friends 4.18
6	Movie 4.20	Sporting event 3.79	Music 3.86	Out to eat 4.07	Friends 3.40	Vacation 3.95	Movie 4.13
7	Going on aDate 4.20	Internet time 3.75	Picnic 3.78	Watching TV 4.03	Sporting event 3.40	Sleeping extra 3.84	Watching TV 4.11
8	Music 4.18	Shopping 3.63	Watching TV 3.64	Club Concert 3.97	Shopping 3.39	Shopping 3.74	Out to eat 3.76
9	Out to Eat 3.99	Sleeping extra Watching TV Longer curfew 3.61	Visit relatives 3.57	Cell Phone 3.96	Reading 3.35	Friends 3.72	Cell phone 3.69
10	Shopping 3.95	Out to eat 3.58	Taking photos 3.49	Internet time 3.86	Movie 3.03	Picnic 3.67	Club 3.64

Table 3. Eight most rewarding school activity domain items from the SORT-2 for participants from America, Australia, Tanzania, Denmark, Honduras, Korea, and Spain

Rank	America	Australia	Tanzania	Demark	Honduras	Korea	Spain
	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*	Item *M*
1	High grade 4.33	High grade 3.96	Class trip 4.03	High grade 4.00	High grade 3.47	Class trip 4.51	Open lunch 4.12
2	Skip day 4.23	Skip day 3.86	Study hall 3.71	Class trip 3.63	Study hall 3.30	High grade 4.38	Class trip 3.88
3	Open lunch 3.98	Open lunch 3.67	High grade 3.71	Open lunch 3.48	Class trip 3.02	Award 4.07	High grade 3.46
4	Award 3.99	Class trip 3.43	Praise 3.66	Skip day 3.48	Praise 2.46	Open lunch 3.87	Award 2.95
5	Study hall 3.92	Award 3.32	Award 3.53	Award 3.47	Award 2.44	Praise 3.46	Missing class 2.89
6	Class trip 3.47	Praise 3.29	Open lunch 3.48	Praise 3.14	Open lunch 1.99	Missing class 3.07	Study hall 2.69
7	Missing class 3.34	Study hall 3.09	Skip day 2.32	Missing class 2.87	Missing class 1.67	Skip day 3.02	Praise 2.66
8	Praise 3.29	Missing class 2.65	Missing class 0.88	Study hall 2.67	Skip day 1.03	Study hall 2.49	Skip day 2.64

Multiple between-subjects analysis of variance (ANOVA) were performed on data reflecting the effects of region (i.e., America, Australia, Tanzania, Denmark, Honduras, Korea, Spain) on each item from the SORT-2. The ANOVA was significant for region in 24 of the 25 items in the sports domain, 22 of the 30 items in the activity domain, and in all of the eight items in the school activity domain. Post hoc comparisons using the Tukey HSD test were then performed on the data to determine the difference in the levels of rewards between individuals from America and individuals from Australia, Tanzania, Denmark, Honduras, Korea, and Spain. A summary of these results are displayed in Table 4 for the sports domain items, in Table 5 for the activities domain items, and in Table 6 for the school activities domain items.

Table 4. Summary of the differences comparing participants from America to participants from Australia, Tanzania, Denmark, Honduras, Korea, and Spain on the dports fomain items

	Australia	Tanzania	Demark	Honduras	Korea	Spain
Dancing	1.003*	1.955	1.821	1.000*	1.996	1.000*
Soccer	1.000*	1.000	1.001*	1.000*	1.028*	1.028*
Running	1.978	1.996	1.963	1.032*	1.000*	1.026*
Bike riding	1.996	1.000*	1.279	1.976	1.044*	1.000
Swimming	1.998	1.000*	1.475	1.000*	1.000*	1.401
Exercising	1.000	1.999	1.172	1.000*	1.000*	1.000
Weight lifting	1.673	1.000*	1.009*	1.000*	1.000*	1.000*
Snorkeling	1.000	1.000*	1.875	-----	1.000*	1.000*
Diving	-----	1.000*	1.905	1.000*	1.000*	1.000*
Hunting	1.175	1.000*	1.078	1.000*	1.000*	1.000*
Fishing	-----	1.000*	1.031*	1.000*	1.021*	1.000*
Horseback riding	1.998	1.000*	1.465	1.004*	1.978	1.000*
Tennis	1.430	1.673	1.993	1.000*	1.131	1.000
Flying a kite	1.161	1.045*	1.997	1.959	1.997	1.000*
Frisbee	-----	1.000*	1.866	1.000*	1.000*	1.000*
Golf	-----	1.580	1.163	1.000*	1.002*	1.000*
Mini golf	-----	1.075	1.794	1.000*	1.000*	1.000*
Downhill skiing	-----	1.004*	1.250	1.000*	1.124	1.000*
Water skiing	-----	1.000*	1.000	1.000*	1.000*	1.000*
Skateboarding	-----	1.002*	1.827	-----	1.178	-----
Ice skating	-----	1.118	1.997	-----	1.069	-----
Rollerblading	-----	1.000*	1.000	1.000*	1.000	1.129
Am football	-----	1.000*	1.347	1.000*	1.000*	1.000*
Lacrosse	1.000*	1.422	1.000*	1.000*	1.000*	1.000*

Table 5. Summary of the differences comparing participants from America to participants from Australia, Tanzania, Denmark, Honduras, Korea, and Spain on the activities domain items

	Australia	Tanzania	Demark	Honduras	Korea	Spain
Listen to music	1.988	1.180	1.222	1.875	1.998	1.022*
Going out to eat	1.639	1.000	1.000	1.000*	1.249	1.630
Reading a book	1.000	1.000*	1.000	1.001*	1.980	1.000
Going on a date	1.141	1.000*	1.014*	1.000*	1.000*	1.000*
Going shopping	1.853	1.000*	1.310	1.001*	1.712	1.036*
Going to a party	1.648	1.272	1.940	1.000*	1.000*	1.985
Games/cards	1.995	1.000*	1.809	1.000*	1.003*	1.282
Driving around	-----	1.000	1.935	1.000*	1.441	1.000*
Sporting event	1.000	1.004*	1.114	1.093	1.000*	1.000*
MySpace	-----	1.000*	1.054	1.000*	1.315	1.109
Visit relatives	1.000	1.955	1.000	1.028*	1.000*	1.357
Going to a dance	1.000	1.018*	1.822	1.000*	1.000*	1.036*
Hang with friends	1.985	1.000*	1.997	1.000*	1.000*	1.029*
Going on a picnic	1.000	1.000*	1.997	1.000*	1.005*	1.000*
Going to a club	1.369	1.023*	1.995	1.000*	1.000*	1.987
Going to concert	1.980	1.016*	1.000	1.000*	1.000*	1.026*
Facebook	1.122	-----	1.927	-----	1.004*	1.316
Internet time	1.000	1.000*	1.990	1.000*	1.394	1.000*
Sleeping extra	1.357	1.000*	1.928	1.000*	1.145	1.000*
Watching TV	1.929	1.301	1.032*	1.012*	1.000*	1.000*
Going to a movie	1.000	1.000*	1.000	1.000*	1.772	1.999
YouTube	-----	1.000*	1.988	-----	1.048*	-----
Extended curfew	1.189	1.000*	1.027*	1.000*	1.000*	1.000*
Vacation	1.775	1.000*	1.000	1.000*	1.015*	1.961

Table 6. Summary of the differences comparing participants from America to participants from Australia, Tanzania, Denmark, Honduras, Korea, and Spain on the school activities domain items

	Australia	Tanzania	Demark	Honduras	Korea	Spain
Praise	1.000	1.310	1.998	1.000*	1.944	1.008*
Extra study hall	1.096	1.888	1.000*	1.003*	1.000*	1.000*
Open lunch	1.923	1.028*	1.458	1.000*	1.991	1.979
Skip day	1.930	1.000*	1.143	1.000*	1.000*	1.000*
Missing class	1.549	1.000*	1.754	1.000*	1.801	1.309
Award	1.332	1.090	1.472	1.000*	1.998	1.000*
High grade	1.846	1.001*	1.867	1.000*	1.000	1.000*
Class trip	1.000	1.006*	1.995	1.075	1.000*	1.170

4. Discussion

The intent of the current study is to determine if there is a difference in the levels of rewards between individuals from America and individuals from Australia, Tanzania, Denmark, Honduras, Korea, and Spain. The researchers expected to find the greatest differences in the levels of rewards between individuals from America and individuals from third-world countries (i.e., Tanzania, Honduras). The bivariate analysis indicated that participants from America were significantly different from participants from Tanzania on 59.7 percent of the survey items and were significantly different from participants from Honduras on 79.3 percent of the survey items. Additionally, the results indicated participants from America were only significantly different from participants from Australia on 6.1 percent of the survey items, significantly different from participants from Denmark on 12.7 percent of the survey items, and significantly different from participants from Korea on 28.6 percent of the survey items. Finally, although the researchers hypothesized that responses from American participants would be similar to participants from Spain on the majority of the items, participants from America and Spain significantly differed on 55.7 percent of the survey items. This finding may reveal the great diversity between the two cultures rather than simply their similarity in world power.

5. Limitations of the Present Study

Several potential limitations of our study need to be noted. First, the results of the study might not be able to be generalized to the general population. This is especially true in such nations such as Tanzania where there are many different tribal groups with separate value systems and traditions. The results of our study are based on data collected from a sample of these tribes and it would be erroneous to assume that they could be generalized to the entire population. Another major limitation lies in the selection of participants. The non-random selection of participants for the study could produce a bias outcome. Participants were chosen from classrooms where the teachers agreed to participate in this study. Random assignment of participants could eliminate this threat. Another limitation lies in the unequal sample size of participants from each country. In this study, there are a large number of participants from America and a small number of participants from Australia and Denmark. These unequal sample sizes, especially the countries with the small numbers could lead to a greater chance of *y* variability. An additional concern lies in the limitations of self-report questionnaires in general. The SORT-2 relies entirely on the self-report of the individuals completing the survey. This is a limitation as individuals who complete the questionnaire may not respond truthfully for any number of reasons. The likelihood that the participants in our study, especially those from the third would countries, were from the upper class of their region could be another limitation. In countries such as Tanzania and Honduras, attending school is a privilege that is not afforded to every individual. Thus, it is possible that we only captured the interests of the upper class from these countries. Finally, the rating scales consist of indistinct or unclear descriptors like poor, fair, moderate, very good, and excellent, which may force individuals to answer in a way which does not entirely accord with their views.

6. Conclusions and Future Prospects

Further research should examine whether there are significant differences among individuals who are native and individuals who are immigrants to the country in which they are living. Similarly, it would be interesting to determine if there are significant differences among individuals who are native to the country in which they are living and individuals who emigrated from that county. Finally, further research should be conducted to follow

up on these individuals to determine how these individual's preference for reinforcers change over time.

In summary, the SORT-2 can aid in the success of behavioral change programs goal of shaping new responses by accurately identifying stimuli that could potentially be reinforcing.

As a result, the SORT-2 can be used in a variety of different settings including clinical, academic, and residential to provide therapists, teachers, and parents the ability to efficiently and effectively determine which items are most reinforcing for the majority of adolescents from different regions of the world.

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