An Examination of Generalized-Conditioned Reinforcers in Stimulus Preference Assessments

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RESEARCH REPORT

An Examination of Generalized-Conditioned Reinforcers in Stimulus Preference Assessments

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Generalized-conditioned reinforcers (GCRs) are advocated for by practitioners when possible because of their ability to function as reinforcers across a wide array of motivative operations. In organizational behavior management 2 common GCRs are praise and money. Although many studies have demonstrated their usefulness, no prior study has compared relative preferences for GCRs (specifically money) and other potentially reinforcing items. A total of 24 direct care employees from a group home setting completed assessments for potential reinforcers. All participants in the current study identified items other than money as high-preference items, suggesting that some items may serve as alternatives to money in terms of preference.

KEYWORDS preference assessments, generalized-conditioned reinforcers, survey assessment, ranking assessment

Cooper, Heron, and Heward (2007) defined a *generalized-conditioned reinforcer* (GCR) as "a conditioned reinforcer that as a result of having been paired with many unconditioned and conditioned reinforcers does not

depend on a current Establishing Operation (EO) for any particular form of reinforcement for its efficacy" (p. 270). This definition suggests the benefits of using a GCR in the reinforcement component of a behavior change program. Having been paired with many different motivative operations, the GCR is less likely to lose its reinforcing capabilities, unlike primary or nongeneralized secondary reinforcers that could quickly lose their efficacy once the singular motivative operation is no longer in place (e.g., water deprivation). Given that managers do not have to rely on any one motivative operation to be in place, it may be that GCRs are more reliable as reinforcers in behavior change programs.

Two common examples of GCRs include praise and money. The use of praise is well documented in the organizational behavior management literature (Gaetani & Johnson, 1983; Loewy & Bailey, 2007; Silva, Duncan, & Doudna, 1981). Similarly, the use of money is found in both applied (Gaetani, Hoxeng, & Austin, 1986; George & Hopkins, 1989) and analog (Oah & Lee, 2011; Slowiak, Dickinson, & Huitema, 2011) research. Given that the vast majority of employees receive monetary compensation for completing work, money is likely considered to be a key motivating factor in organizational settings.

However, despite the ubiquity of money and assumptions of its power, it is possible that other items function as well as or better than money to change behavior. Some items that may be substituted for money in reinforcement plans may be less expensive or may be delivered when money is not available. Money may not be available, for example, when work environments have union rules that prevent the use of tangible incentives. In addition, it may be easier to store or deliver some items or events than to keep large amounts of money on hand. If other items function as effective reinforcers in lieu of money, it may be possible to substitute these items and decrease the cost and/or ensure the implementation of a behavior change program. The current study assessed preferences for money relative to other potential reinforcers.

METHOD

Participants

A total of 24 direct care staff members working in a group home setting participated in the current study. The participants ranged in age from 20 to 37 and represented various cultures and ethnicities. Twelve of the participants were women. All participants had been working at the company a minimum of 6 months before data collection began.

Procedure

Two assessments were used to gauge participants' preference for two sets of nine items. The items in both sets were identified by nonparticipating

employees as part of a larger behavior change program. Employees not participating in the current study listed items that they would prefer to receive for work completion. The items were split into two sets. The first set included items or activities nominated by staff members that did not have discrete values; all of these items were compared to money. Items in the first set included $10 cash with eight other items: accessing candy, leaving work 40 min early, skipping preshift meetings, taking an extra 20-min break during a shift, picking one's work location for a day, picking one's assigned duties for the day, taking clients on an outing, and choosing a preferred parking spot for a day. Items in the second set could be assigned specific monetary values. Items in the second set included $10 cash with eight other items all worth $10: movie rental gift card, music gift card, convenience store gift card, donut shop gift card, sweets of the participant's choice, fast food gift card, lottery tickets, and electronics gift card. The sweets of the participant's choice option was developed in response to several nominations for specific sweet snacks requested by staff members.

The first assessment was derived from Daniels (1989). The survey assessment required participants to score each item from 0 (*do not like the item at all*) to 4 (*like the item very much*). Items scored as 3 or 4 were considered high-preference items. All participants met with an experimenter individually and completed the assessment for both sets of items.

The second assessment was a stimulus-ranking procedure described by Waldvogel and Dixon (2008). This assessment required participants to rank items from 1 (*best*) to 9 (*worst*). Although the survey assessment has been demonstrated to be effective in selecting items that function as reinforcers (Wilder, Therrien, & Wine, 2005), it does not necessarily provide a rank order of preferences among highly preferred items. The ranking procedure was used to provide a discrete order of preferences for additional analysis. Seventeen participants—seven of the original participants were unavailable at the time of the assessment—who completed the survey assessment met a second time and completed the ranking assessment for both sets of items.

RESULTS

The survey assessment results for the first set of items indicated that across 24 participants, 119 items were marked as 3 or 4 on the assessment, indicating a high-preference designation. The number of high-preference designations was calculated by summing the "Number of 3 or 4 designations" column for the first set of items in Table 1.

Taking clients on an outing received the highest number of high-preference designations, with a total of 21. Ten dollars in cash was identified by 19 participants as a high-preference item. The mean number

TABLE 1 Survey Preference Assessments

Item set	Number of 3 or 4 designations
Item Set 1	
Take clients on outing	21
$10 in cash	19
Leave 40 min early	18
Extra 20-min break	16
Picking work location for a day	14
Picking assigned duties for a day	10
Skipping preshift meeting	9
Preferred parking spot for a day	9
Access to candy	3
Item Set 2	
$10 convenience store gift card	23
$10 in cash	23
$10 worth of lottery tickets	21
$10 donut store gift card	20
$10 electronics store gift card	17
$10 fast food gift certificate	14
$10 movie rental gift certificate	13
$10 music store gift certificate	11
$10 worth of sweets of your choice	6

of high-preference designation items per person was 4.88 (out of 9), and no participants ranked money as their only potential reinforcer.

The survey assessment results for the second set of items indicated that 149 items were marked as 3 or 4 on the assessment, indicating a high-preference designation (see Table 1). Ten dollars cash and $10 at a convenience store both received 23 high-preference designations. The mean number of high-preference items per person was 6.13 (out of 9), and no participants ranked money as their only potential reinforcer.

Results from the ranking assessment are presented in Table 2. The table presents the mean rank for each item across all 17 participants for both sets of items. A rank of 1 denotes the most preferred item and 9 the least preferred item; therefore, higher preference is signified by a lower mean score. Table 2 also lists the number of times an item was ranked in the top 3 or the top 2 and the number of times each item was ranked number 1. The results for the first set of items indicated that all items except the option to select assigned duties for a day were selected by at least one staff member as most preferred. In fact, despite being ranked slightly worse than $10 in cash, leaving work early was chosen more often than the money as the most preferred item. The results from the second set of items demonstrated that $10 in cash received by far the most high-preference designations; however, several participants selected other items as most preferred.

TABLE 2 Ranking Preference Assessments

Item set	M	Number of rankings in top 3	Number of rankings in top 2	Number of times ranked 1
Item Set 1				
$10 in cash	5.1	10	6	3
Leave 40 min early	5.48	12	10	6
Extra 20-min break	6	7	4	2
Picking work location for a day	6	8	4	1
Take clients on an outing	6.88	5	3	1
Skipping preshift meeting	7.29	4	1	1
Preferred parking spot for a day	7.29	2	2	1
Picking assigned duties for a day	7.41	1	1	0
Access to candy	8.71	2	2	2
Item Set 2				
$10 electronics store gift card	5.18	9	7	2
$10 convenience store gift card	5.48	4	2	1
$10 in cash	5.59	12	11	8
$10 donut store gift card	6.65	2	0	0
$10 music store gift card	6.88	5	2	1
$10 worth of lottery tickets	7	10	6	2
$10 movie rental gift card	7.06	4	2	1
$10 fast food gift card	7.59	2	0	0
$10 worth of sweets of your choice	7.82	3	3	2

Note. Lower means indicate higher preference.

DISCUSSION

For all staff members in the current study, items and activities other than money were identified as potential reinforcers. The first item set included several items that were rated as high-preference items and that would cost a company little or no money to implement (e.g., preferred parking, being the staff member to take clients on a planned outing). The implications for business could be profound in terms of cost savings. Some researchers have expressed concern about the sustainability of organizational behavior management interventions (Sigurdsson & Austin, 2006). A significant barrier to sustainable interventions may be cost over time and the availability of reinforcers. When an organization uses reinforcing components that are low cost and available within the organization, the cost of interventions could be reduced and the ease of implementation increased.

The second assessment required participants to rank items in both sets. By ranking items participants were forced to assign relative values instead of rating each item individually on a continuum of preference. The survey assessments suggest that the participants selected many different items as reinforcers, but the ranking assessments suggest that, for some participants, some items may be preferred over the monetary option.

Staff members preferring items or activities more than money seems counterintuitive at first glance, but a number of explanations are possible. The items in the first set, aside from the $10 cash, had no discrete monetary value. Even the few potential reinforcers that could have monetary values (e.g., leaving work early) are not available for purchase in the organization. Access to these normally unavailable activities may overpower money for a variety of reasons, possibly even reasons that are financial in nature. For example, leaving work 40 min early may have a monetary value worth less than $10, depending upon wage, but it may allow an employee to pick a child up early from day care and thus avoid a $40 late charge.

The results from the second set of items are even more interesting. Because the values for all of the items were held constant and money was the most generalized option, $10 in cash should have been the most pre-ferred item, but this was not the case for all participants. At first glance it is unclear why money, which can be exchanged almost anywhere for almost anything, would be rivaled by an item of equal monetary value that can be redeemed only at specific locations for items available only within that setting. A possibility is that items found within that location hold reinforc-ing potential, and the money obtained in cash incentive programs will be used for items that are not reinforcing (e.g., parking tickets). That is, money is good, but not when one uses it to pay a fine. However, a donut store gift certificate, for example, can only be exchanged for something appeal-ing. Future research could examine how employees spend cash bonuses. An examination of how cash bonuses are spent in various staff popula-tions may inform reinforcer selection. For example, if upper management spends cash bonuses on leisure items, whereas frontline employees spend cash bonuses on bills, a cash bonus may affect behavior differently in these populations.

This study is limited in that a reinforcer assessment was not conducted after the preference assessments. A reinforcer assessment is a procedure to evaluate the stimuli selected in a preference assessment by making the selected stimuli available contingent upon completing work. If access to a stimulus increases performance above baseline levels it could be said to be a reinforcer. Although research has shown the survey method to be effective in identifying reinforcers (Wilder et al., 2005), the results of these assessments should still be regarded with caution.

A needed extension of this research would be determining the degree to which employees find items or activities that do not have a monetary value reinforcing over time. It is unlikely that money delivered as a reinforcer would cease to be effective as a reinforcer; however, this is less clear with other items, such as a preferred parking spot. Future research could make access to various items or activities contingent upon completing work over time. By comparing the long-term delivery of these items and activities to

the long-term delivery of money, researchers could assess the utility of these reinforcers over time.

Lastly, two items in the first set warrant examination. The different time values of an additional 20-min break and leaving work 40 min early introduce a potential confound. The different time values were selected because of overlapping shifts (i.e., staff coming in for the next shift arrive 40 min early and could have theoretically relieved the participant at that time). Nonparticipating staff members assisting in the selection of assessment items suggested 40 min as opposed to 20 because it "made more sense," but it nevertheless could have influenced the results.

This study calls into question the often-accepted assumption that GCRs in general, and money in particular, are the best motivator in business settings. On the assessments, money was consistently rated as a potent potential reinforcer, but other items may function as well as money for some employees; this could be useful for times when offering money is not feasible (i.e., when there is an unwillingness to keep large amounts of cash on hand for reinforcers) or when money is unavailable (i.e., because of a union agreement). This research also suggests the need for preference assessments in organizational behavior management. Given recent research suggesting the moderate abilities of managers to predict employees' preferences (Wilder, Harris, Casella, Wine, & Postma, 2011; Wilder, Rost, & McMahon, 2007) and the present research suggesting the utility of items or activities other than money, preference assessments seem warranted.

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