Playing Work, or Gamification as Stultification

Dr Chris Bateman

*School of Creative Technology, University of Bolton, Manchester, United Kingdom*

Award-winning game designer and philosopher Dr Chris Bateman was the first person in the world to attain a doctorate in the aesthetics of play and games, and has worked on nearly fifty published games. His 'imaginative investigations' trilogy won praise from Mary Midgley, Kendall Walton, Allen Wood, and Michael Moorcock. The first book, *Imaginary Games* (2011) examines imagination in games and art, asking if games can be art or whether all art is a kind of game. *The Mythology of Evolution* (2012), explores the role of imagination in the sciences, asking if it possible to present the story of life without distorting it. Finally, *Chaos Ethics* (2014), considers the role of imagination in morality, and defends a concept of moral chaos. His latest book is *The Virtuous Cyborg*, which asks what the good life might be for humans who are as intimately enmeshed with technology as we all have become.
Playing Work, or Gamification as Stultification

The contrast between work and play as activities collapses if play is seen, following anthropologist Thomas Malaby, as a disposition towards the indeterminate. Once play is positioned as a state of mind, activities that constitute work need not be disjunct from playful behaviour. Yet for most workers, work is rarely if ever playful, and attempts to import play behaviour into the workplace (‘gamification’) do not result in greater playfulness. Part of this problem results from specific aesthetic values for games having dominating both work and play.

As Roger Caillois warned half a century ago, sport-like values have increasingly saturated the culture of the overdeveloped world. Meanwhile, gamification processes have only been able to export task-focused reward structures from the domain of play – practices that descend from *Dungeon & Dragons*, but that have been denuded of their playful qualities. In parallel to the gamification of work has been the gamification of games, namely an increasing emphasis on tasks to structure videogame play (e.g. achievements), and thus make them more compelling yet less playful. In so much as this entails forcing particular patterns of understanding onto both players and workers, this makes gamification a parallel to Jacques Rancière's stultification in education: a binding of wills instead of an emancipation. If we want a world where work could be more playful, we must begin by breaking the cultural dominance of sport-like and task-like aesthetics of play, and endeavour to overcome the underlying fears that prevent work from being played.

Keywords: play; games; digital games; gamification; stultification; Huizinga; Caillois; Rancière; cybervirtue

The Power of Games?

In 2014, the gamification company &Ranj implemented an incidents and stoppages dashboard for the Dutch steel company Wupperman Staal. This system amounted to a scoreboard showing the performance metrics for different teams inside the company, logging everything that interfered with production. This was intended to motivate workers to perform better in the workplace, through the application of a competitive game-like system whereby teams would be measured according to how well they
avoided disrupting production. According to a version of &Ranj's website available until late 2016, "Ranj deployed gamification principles with great success to show the employees the heartbeat of the company and increase involvement" (&Ranj, 2016). However, it transpired that the employees of Wupperman Staal found the system 'depressing', since it constantly reminded them of what had gone wrong. Furthermore, teams began leaving problems for the next team to sort out in order to maintain their own high scores (van den Berg, 2015).

A few years earlier on the other side of the Atlantic, Disneyland's Paradise Pier Hotel had implemented a not entirely dissimilar scoreboard for their housekeeping staff. As reported by Los Angeles Times correspondent Steve Lopez (2011), performance metrics had long been used in the hotel business to measure productivity and up until this point the Disneyland hotel had used paper tallies. The new digital system could be seen in the laundry rooms, where the leaderboard would show not only the rankings, but also the staff's percentage productivity – in green for numbers close to or above the expected '100%', and in red for lower numbers. The purpose of the leaderboard was, as with the Wupperman Staal system, to provoke 'friendly competition', and thus boost productivity. Employees of the hotel, Lopez reports, called it 'the digital whip', leading the reporter to ponder whether Disney chief executive Bob Iger (who makes 781 times as much as the housekeepers) has a digital whip in his office...

These examples are well-known by people working in the field of gamification, a relatively new industry that hopes to take the intrinsic motivation associated with entertainment games and merge this into workplaces with a goal of improving productivity. Gamification is a divisive subject: game studies scholar Ian Bogost (2015) famously dismissed it as 'bullshit', in reference to Harry Frankfurt's (2005) treatise on that subject. Others, such as Jane McGonigal, defend the benefits of taking lessons from
videogames and applying them to a reality that can appear to be fundamentally 'broken' (McGonigal, 2011). But regardless of any assessment of the current trends in or towards 'gamification', this desire to harness the implicit power of play experiences is far from new.

The anthropologist Thomas Malaby (2009), in a detailed examination of the relationship between rituals, seen as attempts to stabilize the uncertainty of life, and games, seen as reveling in their contingent indeterminacy, notes that there is a long history of institutions attempting to harness something of the 'power' of games for their own benefits – with the Berlin Olympics of 1936 being a particularly notable example, and another instance of the attempt backfiring. Far from Hitler's Nazi regime reinforcing their propaganda of racial purity through the sporting contest, the black athlete Jess Owens took home four gold medals and broke five world records in just 45 minutes (Olympic.org, no date). Malaby's analysis is rooted in Heidegger's philosophy, and builds upon earlier work in which he notes the way games produce a "socially legitimate domain of contrived contingency that generates interpretable outcomes" (Malaby, 2007, p3).

For Malaby, play is not an activity but rather a state of mind, a "dispositional stance towards the indeterminate" (Malaby, 2009, p209), a position expressly intended to reconfigure the presumed contrast between work and play – as well as the association between games and play. If play is a disposition, there is no guarantee a game will produce or encourage it, and thus the coupling of systems developed from the practices of game design with workplaces in 'gamification' ceases to have any guarantee of involving play at all. As Malaby notes, drawing against fellow anthropologist David Lancy (1980), work and play are not necessarily opposites, and some cultures are unable to distinguish work and play at all: the Kpelle of West Africa, when challenged
to understand what these English words meant, suggested they must be present in
everything humans do.

When the Dutch historian Johan Huizinga wrote in 1938 that "culture ceased to
be 'played'" by the 19th century (Huizinga, 1949, p192), and lamented that the 'play-
element' in culture had been on the wane since the 18th century, he was drawing
attention to an issue that is frequently recognized in play studies but largely ignored in
game studies, despite both subject areas claiming Huizinga as a foundational figure. The
French intellectual Roger Caillois, picking up Huizinga's work with his own study in
1958, pursued this diagnosis further by identifying specific patterns of play and making
a sociological assessment of the relationship between contemporary culture and those
patterns (Caillois, 1961). Caillois' conclusions revolved around the idea that the decline
of the 'play-element in culture' discussed by Huizinga can be coupled with the rise of
competition (agon in Caillois' terminology) as a dominant social and economic force.

Callois laments of this cultural obsession with the competitive that it results in a
destruction of the virtues of courteous rivalry that had once been associated with sport
and competition. He warns: "Transposed to reality, the only goal of agon is success...
Implacable competition becomes the rule" (Caillois, 1961, p54). This is a much more
specific accusation than that offered by Huizinga, but the critique is part of the same
thread – what Huizinga saw as the decline of the play-element in culture, Caillois
diagnoses as the supplanting of other aspects of playful experience with competition.
Malaby's idea of play as a disposition explains why this would amount to a voiding of
play from culture, for there is no acceptance or surrender to indeterminacy involved in
Caillois' cultural contagion of 'implacable competition': victory must be sought at any
and all costs. Play itself is destroyed, ironically by the 'gamification' of society brought
about in part by 19th century ideology, captured all too accurately in Herbert Spencer's misleading and tautological phrase 'survival of the fittest'.

**The Gamification of Games**

In 2007, game developer and publisher Valve added to their popular Steam platform 'Steam Achievements'. This system was integrated into each and every game distributed via Steam, and indeed it is a requirement for a game's inclusion in those on sale on Valve's platform that it provides achievements. In adding this system, Valve was mimicking a rival platform, Microsoft's Xbox, which in 2005 had implemented a system-wide achievement system, known as GamerScore (Jakobsson, 2011). Another rival platform, Sony's Playstation, added its own trophies the year after Steam, and made it mandatory for all games in 2009 (Gamespot, 2008). Similarly, the hugely popular massively multiplayer online role-playing game *World of Warcraft* (Blizzard, 2004) added an achievement system in 2008 (Blizzard, 2008), and when Zynga launched its popular viral game *FarmVille* in 2009, it came with Ribbons that formed an achievement system in all but name.

Although Microsoft's GamerScore system was certainly the spur for other companies to implement similar design features into their games or platforms, it was not the first of its kind. The Atari 2600 in the late 70s and early 80s encouraged players to take photos proving the completion of certain challenges which they could use to claim patches, akin to the earning of badges in scouting organizations (Jakobsson, 2011). Indeed, we could point to Baden Powell's 1907 youth organization as an example of an even older achievement system, modelled upon the army tradition of giving medals, which might be taken as the stepping point for these kinds of practices. Of course, as Sony's preferred name, 'Trophy', makes clear, achievement systems are at their heart related to the concept of tournament wins in sports, which replaced the 'spoils of war'
with a prize object commemorating victory, such as the olive wreath in the ancient Olympic games.

There is another strand to the historical precedent for Microsoft's GameScore: the creation of advancement systems in the original tabletop role-playing game (RPG) *Dungeons & Dragons* (Gygax and Arneson, 1974). The player practices of early RPGs invented ways for characters in the fictional world of the game to progress in power by accumulating either experience points (as in *Dungeons & Dragons*) or affording other means of 'levelling up' (such as advancing scores relating to skills). GamerScore, as a point total representing the player's achievements totalized in a number, can be seen as yet another instance of these kinds of advancement systems, which can now be found throughout digital games (Bateman, 2011). Indeed, we might speculate that it was this kind of player practice that GamerScore was modelled upon (since it was already well established that advancement systems were compelling long before 2007 when GamerScore appeared), while the explicit 'achievement' element of the design was merely the required mechanism for mounting such a system at the meta-level of a platform rather than an individual game.

If the earlier examples of competitive leaderboards added to the workplace mark the attempted 'gamification of work', and Huizinga and Caillois' concerns mark an even earlier 'gamification of culture', the rise of achievement systems can perhaps be understood as the 'gamification of games'. This phrase sounds oxymoronic, but not if Malaby's understanding of play is taken into account. Gamification here is marking the phenomena of the decline of Huizinga's play-element, which Caillois takes as the imposition of mandatory competition and I have connected to Malaby's play as disposition – the acceptance and subsequent enjoyment of indeterminacy. 'Gamification' takes from games structural elements that organize the play in a manner that can be
compared to ritual, that is, to managing contingency, construed in this context expressly as challenge. The player whose experience is conditioned by achievements can no longer be assumed free to exercise their autonomy (Detarding, 2016): their play is instead dictated by the specific challenges the game's developer has specified for them. This has a parallel with what psychologists have termed overjustification: the paradoxical undermining of motivation by the adding of explicit rewards to inherently enjoyable activities (Deci, Koestner, and Ryan, 1999).

Note, however, the gap between Caillois' concerns about culture coming to be dominated by competition, thus destroying the play-element within culture, and the domination of achievement in the context of digital games: competition is not necessarily in evidence in the achievement system, which consists of discrete challenges rather than an imperative to seek victory at any cost. Competition may still apply – and the GamerScore system, which provides specific numbers allowing players to compare their performance, is a tangible example of this – but it need not. A player could simply be privately engaged in overcoming the challenges set for them, something that might at first blush be considered central to digital games.

Suppose it is correct to claim that the contexts that people tend to label 'play' can be understood as the experience of exercising autonomy (Detarding, 2016). Is that autonomy not also available in the context of achievements, in so much as it is up to the player to decide whether to pay attention to the challenges being offered in the first place? Studies of players' views of achievement systems suggest that this impression of freedom to participate is entirely undermined by the platforms establishing them as mandatory – both in terms of the developers having to include achievements, and in terms of players having no capacity to opt out of them. This leads some players to exhibit outright disgust in connection with achievement systems, and produces the
The common ground between competition and achievement is the pursuit of what emotion researcher Paul Ekman (2003) called *fiero*, but which we can equally term triumph, that hot and powerful emotion that causes us to punch the air or raise both hands aloft and let lose a 'barbaric yomp'. Fiero is central to sports – but it is also intimately connected to task completion, even though it will not always be attained through the completion of any given challenge (this depends in part upon how much of a struggle was required in order to attain success, since fiero essentially requires adversity to be overcome if it is to experienced). In both sport and task-completion, situations that would cause fiero under some circumstances will instead produce satisfaction, or relief – but the pursuit of the goal state in either case remains the conditions under which the motivation to do so is maintained. Recasting this issue as a matter of the emotional tenor of the experience aligns achievements with Caillois' *agon* (Bateman, 2015), and thus connects the 'gamification of games' to the 'gamification of culture' opposed by Huizinga and Caillois. In all cases, Malaby's conception of play as a disposition marks gamification, of any and all kinds, as a suppression, supplanting, or subversion of autonomous play.

**Gamification as Stultification**

Autonomy is a concept intimately tied up with the Enlightenment, and with Kant's philosophy in particular (Demenchonok, 2009), and we can take our contemporary valorization of autonomy as grounded in the transformation of norms of thought from this time. Given the increasing recognition of autonomy as a human need or at least as a desirable norm, there seems to be an inherent contradiction in Huizinga and Caillois' resistance to the 'gamification of culture’, which Huizinga expressly sees as growing in
force and influence in the centuries after the Enlightenment (typically taken as concluded by the close of the 18th century). How can we be simultaneously valorizing autonomy and yet pragmatically suppressing play through the application of programs of ‘gamification’ acting in culture, the workplace, and even in games?

One answer to this can be found by exploring the thought of someone who lived through and was greatly influenced by the Enlightenment, Joseph Jacotot. The French philosophy Jacques Rancière adapted Jacotot’s notebooks into a work of philosophy, *The Ignorant Schoolmaster* (Rancière, 1991) that perhaps ought to be understood as a co-production between Jacotot and Rancière, and which offers an alternative understanding of ‘gamification’ that bears directly onto this problem. Jacotot had discovered – quite by accident! – that teaching could occur even in situations where the teacher did not know the subject material. This, Rancière explains, was possible because teaching was not necessarily about the transmission of the same understanding between instructor and student, but only about the common agreement to undertake a project of learning. Teacher and student could bind together their wills in the common task of learning a particular skill, without ever having to bind together the specifics of their intelligence, that is, the specifics of their individual methods for understanding the topic in question.

Rancière, drawing against Jacotot, suggests that learning can be understood as the translation of thought, and that this translation occurs differently for different individuals. A teacher who insists in teaching their students to enact a skill or knowledge in the exact same manner as they themselves thus limits their students, effectively making success in the teaching experience dependent not upon merely learning but upon learning in the same manner. This inherently sabotages the possibilities to learn. Jacotot, using a conception that owes a debt to Descartes, talks of
humans as "a will served by an intelligence" (Rancière, 1991, p51). The will here can be associated with autonomy, in that freedom to pursue what is willed can be taken (after Kant, at least) as a hallmark of what we now term autonomy (despite this term having a subtly different meaning for Kant himself).

Rancière, following Jacotot, suggests there are two possible ways that teacher and student can be bound together in the experience of learning. In the first place, they can be bound together by will: both seek the same end (or outcome) in terms of the student having mastered the skill or knowledge being taught. This is termed *emancipation* (Rancière, 1991, p13). Alternatively, they can be bound together by intelligence: the teacher attempts to instill upon the student *the same understanding* of the knowledge or skill in question. This is termed *stultification* (ibid). Note that 'emancipation' here, as might be expected, aligns with a common exercise of autonomy; the two people are joined by their will (their autonomy) in a mutual end. Conversely, 'stultification' represents a situation whereby the means of learning and method of understanding is constrained to match between teacher and student: the student is not, therefore, learning the skill or knowledge freely, but rather is constrained to learn *solely in the same manner as the teacher*. The student in such a situation lacks autonomy, but more significantly, the possible ways in which they can learn the skill or knowledge being taught has been artificially constrained – that is what is meant here by stultification.

This general understanding for the learning of anything can be applied to the specific domain of digital games without necessarily needing to make wider claims about the relationship between their play and learning as some game designers have asserted (e.g. Koster, 2005). The implied 'contract' for education implied by Jacotot and Rancière's contrast between emancipation and stultification is mirrored in the contract
for play between a game's developers and the eventual player. If that contract permits the player to exercise their autonomy, we can describe the play as emancipated (using 'play' here in a more general sense than Malaby's). If, however, that contract constrains the player to play in a manner prescribed by the developer, that experience is stultified. It follows from this construal that the 'gamification of games' is also the stultification of games, and thus that gamification can be understood as Jacotot and Rancière's stultification. This is because the specification of achievements can, and typically does, constrain player autonomy in a manner parallel to the teacher who insists their students must learn in the same manner as themselves. The player loses their autonomy and are stultified by the contraction of the possibilities for play into those already prescribed by those who made the game.

Furthermore, we can see in Jacotot's story precisely the relevant wrong turn in regarding the philosophical goals of the Enlightenment. Jacotot's frustration was with a schooling system that thought education was about superior intelligences imparting the explication of their knowledge to 'inferior' intelligences through the inculcation of their systems of understanding. Such schools, which emerged as a consequence of a particular way of interpreting the ideals of the Enlightenment, produced enforced stultification. Jacotot, by contrast, as Rancière puts the matter, recognized that understanding was never more than translation, and thus that the emancipation that was the transformative goal of the Enlightenment could not be achieved by this means of schooling. First, a common will had to be forged. Only then could education be emancipation. The pursuit of a mutual autonomy, as codified in 1785 by Kant (2002) in his second and third formulation of the categorical imperative, meant a building of a 'realm of ends' on mutual respect: an alignment of wills, not of intelligences.
The deployment of mandatory achievements in games offers a binding of intelligences and not will – a stultifying play contract that limits players in how they approach the game, and in effect denies the possibilities of Malaby's play as a disposition by pre-empting the possible ways to play. It is not that play in Malaby's sense has become impossible, it is merely endangered, and this enforced limitation is Jacotot and Rancière's stultification. Against that is the possible (and actual) creation of games that join the will of the creators to that of the players in an emancipated play contract, the possibilities of which exceed the scope of this discussion. The important point is the recognition that workplace gamification risks stultification in the terms discussed here – and as such there can be no possibility of enriching human life through any kind of gamification that imposes its goals upon its 'players', which is to say, the workers subjected to it.

**The Cybervirtue of Games**

The idea of gamification as stultification, along with the expanded concept of gamification that links Huizinga and Caillois to Steam's achievements via *Dungeons & Dragons* is inherently pejorative, but it does not entirely align with Bogost's dismissal of gamification as bullshit i.e. as a marketing-driven intention to deceive. No doubt there are situations where this critique applies, but as the preceding discussion attempts to draw out gamification (in the broader sense developed here) can indeed be effective at modifying player behavior, a point successfully drawn out by Mikael Jakobsson in his interviews with players participating with Microsoft's GamerScore system. Indeed, many are taking enjoyment from their participation. Once the concept of gamification is widened to represent an application of sport-like or task-driven aesthetics to the culture of what might be termed the overdeveloped world, we are not in a position to dismiss it as hot air. Rather, we are in a better position to understand Huizinga and Caillois'
concerns, and also to recognize that their critique will survive any undermining of the assumed division between work and play. Indeed, it could be argued that Huizinga and Caillois already laid the foundation for such an undermining.

If gamification in this sense is effective but problematic, there remains the question of the possibilities raised by Jane McGonigal as to the use of game design techniques to improve upon a 'broken' reality we are all living in. This aligns with Sebastian Detarding's (2014) attempted rescue of the gamification concept grounded in a reconfiguring of what gamification *might* be. He suggests moving away from the ethical standard of avoiding harm and coercion (views descended from Kant's moral philosophy and that of the utilitarians, the other 'branch' of Enlightenment thinking on ethics) and instead focusing on "facilitating the good life" (ibid, p307) which he terms, in reference to the ancient Greek moral philosophy that inspired it, *eudaimonic design* (cf. Aristotle, 2009). In effect, this marks a transition from thinking in terms of the moral systems of the Enlightenment in favor of virtue ethics, which in both Europe and China represents a far older means of engaging in moral thought.

Yet this is not a return to an earlier way of thinking, since applying virtue ethics to our contemporary situation requires taking into account the influence and effect of technology on our situation. Detarding makes this point via reference to the work of Peter-Paul Verbeek (2006), but it could equally be made via Bruno Latour (2002) or Isabelle Stengers (2012), or indeed from Alfred North Whitehead (1929), whose influence lies behind all those reconsidering the role of things in the moral lives of beings. The problem in understanding virtue ethics in this way is that it means breaking with the deeply engrained assumption that morality is a question only for beings.

One way of conceptualizing our situation with respect to both gamification (in the negative) or eudaimonic design (in the positive) is in terms of *cybervirtue* (Bateman,
in press). Aristotle uses the concept *hexis*, that is, a disposition acquired through the repetition of certain actions – which can be either an excellence or an aberration, depending on the nature of the habit thus acquired (Zhu 2017). This leads to the moral concept of virtue and vice that was widespread in Europe prior to the Enlightenment, and which has a parallel development in China and other parts of the world (e.g. Bretzke, 1995).

If virtue is a term that marks the positive qualities of beings such as humans, cybervirtue marks the positive qualities of a system of beings and things, which is to say, a cyborg – not in the sci-fi sense of a fusing of metal and flesh, but in Donna Harraway's sense that we were always cyborgs because our worlds have always been conditioned by the relationship with our tools (1991). The problem of eudaimonic design – of how to use game design to facilitate the good life – becomes the wider problem of cybervirtue – how do we design things to facilitate the good life, and perhaps just as critically, what are the cybervirtues that we might possess as cyborgs i.e. as beings living intimately with things that possess the power over our behavior that the preceding critique of gamification makes explicit. The scope of this investigation exceeds this discussion, but a few final remarks are worth considering.

McGonigal's call to use game design techniques to fix a 'broken' reality that we are living within can be understood as parallel to the call for eudaimonic design, or the possibilities implied by thinking in terms of cybervirtue, of designing for the good life in the light of the recognition of the imbrications of things into the life of beings. McGonigal's career advanced thanks in part to her involvement in the creation of high profile Alternative Reality Games (ARGs), a form of play that also descends from the tabletop RPGs but that generally reject the narrow focus upon advancement systems that leads to achievements and gamification in favor of a more narrative play. This kind
of narrative play also had its genesis with *Dungeons & Dragons*, and there are in effect two significant game design lineages (Bateman and Zagal, 2017) branching from that game, one that develops around advancement systems and one that is more focused on narrative play.

The kind of narrative play associated with the narrative RPG lineages is built fundamentally upon a collective agreement of a group of players to develop a story together, and this can be seen as an example of an emancipating play contract – one where the players (and the systems, and thus the developers of the game) are engaged in practices that have, at the least, the potential to be transformative. This is a situation that can also be associated with another descendent from tabletop RPGs, the MUDs (Bateman, in press), and might potentially be extended even to the kind of advancement systems critiqued previously in the context of the 'gamification of games' provided the player can manage to walk the thin line between the dogmatic pursuit of pre-specified goals and their own potential towards aesthetic practices of the self (Zhu, 2017). This is another take on the concept of cybervirtue specifically focused upon the context of games.

The original motive for the kind of 'gamification of work' outlined at the beginning of this discussion was to try to harness the assumed power of games in order to get more out of workers by allowing them to 'play work'. But following Malaby's understanding, it becomes clear that forcing competition into the workplace was in no way allowing workers to play. On the contrary, it intensifies the constraints upon their work that they were already enduring as a result of McGongial's 'broken' reality, which is to say, culture denuded of its play-element, as Huizinga and Caillois warned. To invite play into the workplace is to ask for *less* controlled circumstances, such that people feel able and willing to embrace the uncertainties inherent to playful living.
If we want a world where work could be more playful, we cannot begin by simply layering mandatory challenges upon an already demanding work situation. Instead, we must begin by challenging the cultural dominance of sport-like and task-like aesthetics for games and play, and endeavoring to overcome the underlying fears that prevent work from being played. Rancière's (2014) work suggests another possible name for the kind of workplace where such uncertainties could be embraced: *democracy*. This is not at all the system of government we already have (i.e. States of oligarchic law) but the very possibility of power being possessed by absolutely anybody at all. Gamification makes democracy impossible, although it is by no means the only barrier to this kind of political equality. Playing work is implausible without first creating space for the kind of anarchic freedom democracy implies – and this may be more challenging than continuing to live the way we are. The power of games may well be found not merely in their potential for disciplinary control, but in their potential for emancipation.

References


Bateman, Chris (in press). *The Virtuous Cyborg*, author manuscript shared prior to publication.
Bateman, Chris and Zagal, José (2017). Game Design Lineages: Minecraft’s Inventory, DiGRA UK (Salford).


van den Berg, Chris (2015). Gamification: 8 voorbeelden van hoe het vooral níét moet. Retrieved from


