## Why we need a new measure

* Existing measures of needs in games do not include need frustration
* Attempts to use domain-general measures of basic needs in a video games context may not be appropriate
  + Kosa & Uysal (2021) needed to remove 3 items for low (< .5) factor loadings
    - Autonomy satisfaction: “I feel I have been doing what really interests me.”
    - Relatedness satisfaction: “I feel that the people I care about also care about me.”
    - Relatedness frustration: “I have the impression that people I spend time with dislike me.”
  + In their modification (adding [when I play video games] to the BPNSNF) Allen & Anderson (2018) find almost no correlation between need satisfaction and frustration in games; theory expects that these should at least be moderately negatively correlated
  + Ballou & Deterding (2022) find that certain types of need-frustrating situations are implicitly excluded from domain-general questionnaires (e.g., unfair situations, disconnection from game’s community)
* Existing measures of needs in games have validity problems
  + PENS
    - Competence and Intuitive Controls load onto a single factor [(Johnson et al., 2018)](http://doi.org/10.1016/j.ijhcs.2018.05.003)
    - Two items load onto both their intended construct, Presence/Immersion, as well as autonomy [(Johnson et al., 2018)](http://doi.org/10.1016/j.ijhcs.2018.05.003)
    - Unclear if Intuitive Controls and Presence/Immersion should be included in a basic needs scale (especially given multidimensionality of Immersion)
    - Some items may be repetitive (“I find the relationships I form in this game fulfilling / I find the relationships I form in this game important.”)
    - PENS is proprietary; despite Immersyve giving widespread permission for researchers, this nonetheless places constraints on transparency/reuse
  + UPEQ
    - Initial validation, despite large sample, was not very extensive—only PCA conducted, pruned item list was not validated on separate sample
      * Over-reliance on Cronbach’s ɑ, which has the well-established limitations that high values may obscure multidimensionality
    - 21 items tested, 21 items retained, potentially suggesting a lack of experimentation/item diversity
    - Only validated for the game-general context
    - Relatedness subscale was not found to be unidimensional in a recent study we did [(Ballou et al., 2022)](https://dl.acm.org/doi/abs/10.1145/3491102.3501858) - parasocial relationships and multiplayer relationships were separable
* Existing measures have weaknesses in face validity and theoretical coherence
  + PENS may conflate antecedents and experiences (e.g., “The game provides me with interesting options and choices” does not assess autonomy satisfaction itself, but an contextual feature that supports autonomy)
  + UPEQ has items that do not pass face validity tests “My actions had an impact on the game” does not describe anything autonomy-like; in fact, it is more closely related to competence
* Existing measures adopt potentially narrow views of needs
  + Relatedness satisfaction in particular does not apply only to other players, but also to players’ relationships with in-game characters/worlds, the shared community and group membership, and with the game as an object [(Tyack & Wyeth, 2017)](http://doi.org/10.1145/3152771.3156149)
* Existing questionnaires that cover satisfaction & frustration may be too long for certain contexts
* Existing questionnaires have not compared validity at the moment-to-moment vs. game-level vs. game-general levels
  + In item generation (and validation), lack of reflection about what the goal of the measure is vis a vis level of assessment

## What we want the measure to be

* 6 subscales (satisfaction and frustration of autonomy, competence, relatedness)
* 3–4 items per subscale (18–24 items total)
  + Possibility of short-form using genetic algorithms to select single items
    - Benefits: cheaper study fees, better usability in moment-to-moment playtesting, potential reduction in survey fatigue
* Usable in both a playtesting context and in a retrospective (**experience**, game, gaming as a hobby) context
  + Potentially requiring scale variants

## How need satisfaction and frustration are defined

* A few selected definitions are below
* If you want to know more about basic psychological needs theory beyond just games, I strongly recommend [Vansteenkiste et al. (2020)](http://doi.org/10.1007/s11031-019-09818-1)
* **Autonomy:** 
  + It refers to feeling willingness and volition with respect to one’s behaviors. The need for autonomy describes the need of individuals to experience self-endorsement and ownership of their actions—to be self-regulating in the technical sense of that term. The opposite of autonomy is heteronomy, as when one acts out of internal or external pressures that are experienced as controlling. Autonomy does *not*, as we use it, refer to independence. (Ryan & Deci, 2017, p. 86)
  + “Phenomenally, autonomy concerns the extent to which people experience their behavior as volitional or as fully self-endorsed, rather than being coerced, compelled, or seduced by forces external to the self. Actions that people fully ‘stand behind,’ that are experienced as congruent expressions of the the self, and that do not involve one part of the personality dominating others, are autonomous actions.” (97)
  + Autonomy refers to the experience of volition and willingness. When satisfied, one experiences a sense of integrity as when one’s actions, thoughts, and feelings are self-endorsed and authentic.
  + An “*internal perceived locus of causality* … actions for which one experiences oneself as the *origin* of action.” (66)
  + When frustrated, one experiences a sense of pressure and often conflict, such as feeling pushed in an unwanted direction. (Vansteenkiste et al., 2020, p. 3)
* **Competence:** 
  + Competence refers to feeling effective in one’s interactions with the social environment—that is, experiencing opportunities and supports for the exercise, expansion, and expression of one’s capacities and talents. Where individuals are prevented from developing skills, understanding, or mastery, the competence need will be unmet (Ryan & Deci, 2017, p. 86)
  + Competence concerns the experience of effectiveness and mastery. It becomes satisfied as one capably engages in activities and experiences opportunities for using and extending skills and expertise.
  + When frustrated, one experiences a sense of ineffectiveness or even failure and helplessness. (Vansteenkiste et al., 2020, p. 3)
* **Relatedness:** 
  + Relatedness refers to both experiencing others as responsive and sensitive and being able to be responsive and sensitive to them—that is, feeling connected and involved with others and having a sense of belonging. Relatedness is experienced both in being cared about and in caring. The need is satisfied when others show concern toward the individual, as well as when the individual has opportunities to be benevolent toward others, as both directions of caring enhance a sense of connectedness. (Ryan & Deci, 2017, p. 86)
  + Relatedness denotes the experience of warmth, bonding, and care, and is satisfied by connecting to and feeling significant to others.
  + Relatedness frustration comes with a sense of social alienation, exclusion, and loneliness. (Vansteenkiste et al., 2020, p. 3)

## How can games satisfy or frustrate needs?

### Relatedness

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| **Paper** | **Title** | **Summary** |
| [Tyack & Wyeth (2017)](http://doi.org/10.1145/3152771.3156149) | Exploring relatedness in single-player video game play | In-depth look on satisfaction of the need for relatedness in video games beyond interpersonal/dyadic relationships. Authors begin with a flagship, tripartite definition of relatedness: "A person's strivings to relate to and care for others, to feel that those others are relating authentically to one's self, and to feel a satisfying and coherent involvement with the social world more generally", characterized by:  1) reciprocal love and care  2) acceptance of one's true self by others  3) perceived membership to wider social or cultural groups  Authors then overview three ways they see that single-player games may yet satisfy the need for relatedness:   1. With virtual characters (i.e., parasocial relationships)    1. relatedness experienced when player identifies and empathises with characters and their experiences (this is also true of non-interactive forms of media like books) 2. Through culture - "habitus" (or "collective history") of video games    1. Developers draw on a shared cultural knowledge when creating games, and this may allow the player to perceive themselves as belonging to a cultural group that accepts and validates an aspect of their true self    2. Thus relatedness can also be thwarted when developers exhibit divergent habitus, for example the aggressive reactions to "walking simulators" 3. Through video games as an object    1. Games (as objects) may demonstrate involvement - devotion of "time, attention, and resources" towards players    2. People use social scripts when interacting with computers, without a corresponding belief in their humanity (e.g., ELIZA therapy chatbot, or in non-technical context with family antiques)    3. Authors cite Final Fantasy X’s Blitzball as an example, where the game forces the player through a lengthy and possibly undesirable detour, but players may be able to internalize that requirement for continued progress facilitated by a sense of \*\*trust\*\* that the game will continue to deliver positive experiences |
| [Cole (2022)](https://drive.google.com/file/d/1X0dQm8yF2hNgL51Ox9G7-VX8rObBXfX5/view) | “Know Thyself”: SDT, self-relatedness, and the single player gaming experience | Paper proposes—potentially controversially!—that relatedness need satisfaction might be the result not just of how an individual connects with those around them, but also of how they connect with themselves. Through playing games, players come to “know themselves better”, potentially in turn allowing them to relate with others better.  Paper essentially argues that players frequently seek out eudaimonic experiences in games, and ties this a distinction drawn between two types of escapism: self-expansion and self-suppression. In the self-expansion type of escapism (which seeks to explain the “sad film paradox”), players are oriented towards psychological growth and meaning. This, in turn, might be understandable through the lens of “relatedness as self-knowledge and self-reflection”. |
| [Grasse et al. (2022)](https://drive.google.com/file/d/11RzX3gMEHVeMgA6bse25VIa4rN8QnA1U/view) | Reevaluating the Role of Relatedness in Single-Player Roleplaying Games | Investigation of relatedness in single-player roleplaying games (SPRPGs) based on their experience with the educational interactive storytelling game *Academical*.  Authors hypothesize that SPRPG players are likely to experience a stronger sense of relatedness when two conditions are present:   * the modeling of game characters as social actors within the player’s mind, which may take the form of three distinct levels of “imaginative engagement”:   1. *Recognition;* in which spectators are presented with “legible and consistent” information about characters that lead them to model these characters as internally coherent others;   2. *alignment*, in which spectators are given access to a character’s subjectivity to facilitate   3. *perspective-taking*; and allegiance, in which spectators are led to “root for” (or against) characters on the basis of moral evaluation. * participation through roleplay in dyadic social interactions with these characters   1. Games can deepen potential for parasocial relationship via interaction   2. Role-play is an activity common to games that explicitly engages a person’s capacity to experience the world from another’s perspective as well as to experience alignment and allegiance with fictional characters. |
| [Depping, Johanson, & Mandryk (2018)](http://dl.acm.org/doi/abs/10.1145/3242671.3242702) | Designing for Friendship: Modeling Properties of Play, In-Game Social Capital, and Psychological Well-being | Only tangentially useful mixed-methods study looking at features of games that relate to social capital built in those games, and how social capital in games in turn relates to general social well-being. Authors adopts the social capital framework, which differentiates:  - bridging (tentative relationships lacking in depth but having significant breadth; exposing one to different views/opinions/resources), and  - bonding (strong relationships providing emotional/social support)  The main pathway that the data support finds that interdependence strongly relates to bridging social capital, and in turn to greater well-being, with large effect sizes. The most interesting finding, however, is that *cooperation* (working together towards the same goal) does **not** (uniquely) predict social capital—instead, it appears to be more important that players are *interdependent* (relying on each other to perform a task). Players can build meaningful social connections also when working towards different goals, or even when in direct competition with each other. |
| [Bopp et al. (2019)](https://doi.org/10.1145/3311350.3347169) | Exploring Emotional Attachment to Game Characters | Really nice qualitative survey study finding (via thematic analysis) 7 ways players become attached to characters in video games. For each, they describe both characteristics of the characters with whom players tend to form these emotional bonds, and emotional descriptors of how players feel when experiencing them.  In addition to the seven themes themselves, one useful part is a clear differentiation between attachment to the *player character* (e.g., identifying with the player character) and *attachment to NPCs*—showing that these have qualitatively different relationships and experiences associated with them. While all themes had instances of both attachment to PCs and NPCs, three leaned more toward being attached to the player character:  **Cool and Capable**  - Characteristics: characters liked for in-game capabilities, utility, power, entertainment, wanting to “just take them out for a beer and some laughs” - Feelings: happiness, excitement, amusement, empowerment  **Admired Paragon**  - Characteristics: Virtuous traits the players aspire to have: kindness, courageous; gameplay and mental strength: badassery - Feelings: admiration, awe, respect  **Sympathetic Alter Ego** - Characteristics: shared similarities with player - Feelings: being understood  And 4 leaned more toward attachment to NPCs:  **Respected Nemesis** - Characteristics: Charismatic appearance, some virtuous traits like fairness, strong and powerful in gameplay or narrative - Feelings: awe, respect, amazement  **Crush** – Characteristics: attractive appearance - Feelings: endearment  **Concern for one’s Protégé** - Characteristics: vulnerable and less experienced than PC but not helpless - Feelings: protection, care, worry, prideTrusted  **Close Friend** - Characteristics: Loyal and accommodating to other characters including PC - Feelings: worry, trust, gratitude |
| [Vella et al. (2019](https://journals.sagepub.com/doi/full/10.1177/1555412017719973)) | A Sense of Belonging: Pokémon GO and Social Connectedness | Thematic analysis of interviews and forum posts assessing the various social benefits of Pokemon Go for players. Some of the quotes are really touching, crediting the game for essentially dragging them out of their depression or social anxiety, for improving their physical health, and strengthening (sometimes broken) relationships.  **Social outcomes of playing**  - *strengthened ties* - spending more time with friends and family, participating in routine together, cross-generational play  - *icebreaker* - facilitating conversation about both in-game and extra-game topics  *- sense of belonging* - feeling part of community of players inhabiting both online and offline spaces; altruistic behaviors leading to social cohesion or shared goals; discovering new places  **These outcomes were facilitated by several features of the game or context:**  - *playing outside*  - *playing in a different setting to normal play*  - *convenience* - playing on readily accessible technology, playing in “gap moments” (e.g., waiting for public transport), playing while engaged in 2+ activities (e.g., walking dog)  - *shared passion with friends/family* |
| [Kaye and Bryce (2012)](https://research.edgehill.ac.uk/en/publications/putting-the-fun-factor-into-gaming-the-influence-of-social-contex-2) | Putting the fun factor into gaming: The influence of social contexts on the experiences of playing videogames | Focus group study lightly informed by SDT, trying to identify how social gaming affects player experience and the presence of “group flow”—experiences of flow where others are present and may also be experiencing flow.  **Relatedness-relevant social experiences:** - Exhilaration of seamless teamwork  - Discussion of tactics and narrative  - Facilitating social integration, games making social interactions easier and more successful  - Facilitating and maintaining friends, meeting new people  - Flow-like experiences supported by task-relevant skills, knowledge of the skills of other players, feedback from others and being seen  **Frustration—not need frustration, but colloquial—was heightened by:**  - Being beaten by known others  - Toxicity, spamming, unfriendly communities  - Ignorant others (e.g., asking to pause online games) |
| [Saksono et al. (2020)](https://doi.org/10.1145/3313831.3376686) | Storywell: Designing for Family Fitness App Motivation by Using Social Rewards and Reflection | Interview study with caretakers who played a gamified fitness together with their 3–8 year old children to support physical activity. App was designed specifically with relatedness satisfaction in mind. In the interviews, authors describe 3 types of relatedness-satisfying (experiences for the caretakers, not the children):  **Bonding moments** - immediate feeling of connectedness  - being in physical proximity (e.g., reading together, cuddling while using the app together)  - inducing family conversations (e.g., responding to reflection questions about something that was difficult)  - undermined by competing for hardware access (e.g., fighting over being able to see screen)  **Discovery moments** - observing childrens’ attitude or behavior  - Learning about child’s needs and motives (e.g., noticing that the child prefers solo physical activity)  - Facilitating opportunities to be open (e.g., the app  **Educating moments** - feeling that actions supported child’s attitudes or behaviors  - seeing positive effects of actions on others (e.g., noticing that using the app together led to more activity in the child)  - sharing life lessons (e.g., using the stories in the app to share personal difficulties)  - reinterpreting negative past events (e.g., themes in the app create opportunities to revisit challenges in the child’s life) |

### Autonomy

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| **Paper** | **Title** | **Summary** |
| [Tyack & Wyeth (2021)](https://doi.org/10.1145/3474709) | "The Small Decisions Are What Makes it Interesting": Autonomy, Control, and Restoration in Player Experience | Mixed-methods study involving interviews about autonomy-related experiences in games (though interview script is unclear). Authors find that while players largely consider the provision of in-game choices an essential quality of autonomy-supportive design, for some, play reflects a means to engage with concepts and alternative perspectives towards reality. Autonomy-satisfying themes included:   * Making choices with clear effects on the game state, “decisions “that really affect the story later on, like especially Mass Effect [6] is a big one for that, like things you do in the first game will affect what happens in the third one and stuff”. * Opportunities for choice that are seemingly valued for their own sake, regardless of their in-game outcomes * Authors interpretation: Choice supports autonomy only to the extent that it (re)produces a scene of conflict in the self, and provides the means to resolve it   Game-related autonomy frustration appears to emerge in internally-pressuring situations characterized by (perceived) ambiguity and risk, and externally-pressuring circumstances whereby others are seen to encroach on the scene of play. Autonomy-frustrating themes included:   * Being confronted with risk in ambiguous circumstances – internal pressure to not play “incorrectly”, that is, be unable to see the correct approach to the game. Players may feel pressured when optimal play behavior is indeterminately specified in the game design, or eschewed altogether   + For example, P8 described feeling overcome by the sheer range of activities, saying “it [Stardew Valley] doesn’t give you enough, sort of, push towards certain directions, so you’re left standing there being like ‘ah, I don’t know if what I’m doing is correct’. You’re not doing the secret sequence”. * Having one’s playtime limited by an authority, preventing desired play experience * Inner conflicts associated with play self-assessed as “obsessive” (P1), “like licking an ashtray” (P8), or “necessary” (P9), suggesting a form of controlled motivation |
| [Deterding (2016)](https://doi.org/10.1145/2858036.2858395) | Contextual autonomy support in video game play: a grounded theory | Interview study finding that autonomy is supported when play occurs in a conflict- and distraction-free environment, with choice over when, how, and what to play. In contrast, autonomy-thwarting play may be engaged in somewhat unwillingly (e.g., to meet review deadlines), or subject to interruption.  "In sum, leisure play contexts support autonomy by socio-materially affording a *relaxed spatio-temporal field* shielded from non-play demands, and a *meta-process of configuration and (dis)engagement* in which players can fit the situation to their interests and needs thanks to *minimized consequence*.”  Contextual elements differentiating leisure (autonomy-supportive) gaming from from non-leisure play:   * freedom to (dis)engage at will   + this was limited by social participation obligations, as with the example of WoW raids   + this is *effortful*, earned after attending to responsibilities for work and family * freedom to autonomously choose which game to play * freedom to choose playstyle in-game * requires relaxed temporal and spatial fields * lesser consequences compared to non-leisure gaming, which necessarily must further some instrumental purpose |

### Competence

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| **Paper** | **Title** | **Summary** |
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### All Needs

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| **Paper** | **Title** | **Summary** |
| [Ballou & Deterding (2022)](https://psyarxiv.com/zehgr/) | ‘I Just Wanted to Get it Over and Done With’: A Grounded Theory of Psychological Need Frustration in Video Games | Interview study specifically about need frustration, finding that need frustration is a common and impactful experience in games, and that it has important effects on (dis)engagement and potentially well-being. Broadly, we find 3 categories of need-frustrating situations for each of the three needs (summarized below). Importantly, however, we find that the experience of need frustration is occasioned not by a need-frustrating situation per se, but rather by unexpectedly salient or intense need-frustrating situations.   * **Autonomy-frustrating situations:**    + *Desired playstyle is constrained*: something prevented players from playing how they wanted to play at that moment—e.g., playing a particular character, using particular equipment or abilities, or taking certain in-game decisions.   + *Ability to play is constrained*: constraints on their schedule, hardware availability, finances, or similar prevent them playing a game (when) they want to   + *Compelled play:* players do not want to be playing a game at this time, but feel they need to for some other reason (extrinsic motivation) * **Competence-frustrating situations:**   + *Stagnation*: players feel unable to complete a desired or required action, stifling their progression   + *Unfair situations*: external forces make a desired action or goal attainment practically impossible in a way that violates players’ expectations of being given equal or sufficient means to make winning or losing an expression of their skill   + *Meaningless actions:* game allows players to make decisions, but these do not have the expected scale of impact, or no impact at all * **Relatedness-frustrating situations:**   + *Disconnected from other players*: situations where players had disagreements with their teammates, felt that a skill mismatch made for unequal in-game status, and—most commonly—when players were harassed by other player   + *Disconnected from game’s community*: feelings that the player is unwelcome by other players of the game, even those with whom they have not had direct contact; feelings of repulsion or dislike towards other players   + *Disconnected from game’s world*: game’s characters or environment made a player feel alienated, uninterested, or disappointed |
| [Pusey et al. (2021)](https://doi.org/10.1177/15554120211056126) | Using Case Studies to Explore Need Satisfaction and Frustration in Puzzle Video Games | Authors essentially describe individual differences in need strength, with each case participant valuing one or the other need more highly. They argue that different genres can satisfy each need more or less well, using this to explain why the players each gravitated toward their respective favorite genres. Further evidence that NF leads to disengagement, and that NS leads to more constructive problem solving.  Three example participants (“case studies”) examined:   * #1 Terry describes AF (not having freedom to choose how to approach puzzle), with a hint of CF (skill-based as opposed to cognitive challenges can feel unfair) - instead, he tends to play strategy and FPS games where perceived agency is high * #2 Arthur describes high CS from solving a challenging puzzle * #3 Daisy describes CF from a lack of effectiveness felt from solving puzzles in The Witness (minimal effect on world); for her, the motivation to persist through difficult puzzles is carried by relatedness satisfaction, cooperation with others |
| [Spiel & Gerling (2021)](https://doi.org/10.1145/3432245) | The Purpose of Play: How HCI Games Research Fails Neurodivergent Populations | Systematic review + thematic analysis investigating how HCI research understands the relationships between neurodivergent people and games. Most (all?) of the reviewed literature is based on (custom/pilot) games as potential interventions, rather than understanding how neurodivergent people interact with commercial games. SDT is used at the end as a lens of interpretation; although it is not the focus of results, the authors describe 3 ways that games may be frustrating the needs of neurodivergent players:  **Competence frustration:** games treating players as “deficient” or incompetent; challenging them in areas where they experience difficulty, rather than playing to strengths  **Relatedness frustration:** (Neurodivergent) players not being invited to relate to their environment and create connections on their own terms but rather further reminded of how they are different to a dominant norm, how their neurotypical environment fails to relate to them as peers  **Autonomy frustration:** Playing in (diagnostic or therapeutic) contexts where refusal to play may not be comfortable or possible; gaming becomes a “have to do” |
| [Karhulati et al. (2022)](https://doi.org/10.1007/s12144-022-03586-x) | Eight Hypotheses on Technology Use and Psychosocial Wellbeing: A Bicultural Phenomenological Study of Gaming during the COVID-19 Pandemic | Interpretative Phenomenological Analysis interview study that, as a byproduct of its analysis rather than the main target, outlines several ways that players experience positive and negative (need-satisfying and -frustrating) effects of gaming on their day to day life during the pandemic. For satisfaction, these include:   * **Relatedness:** social joy, meeting new people, social satisfaction, social exploration, romantic fantasy, absorbed in stories/development, bonding with family, sharing good moments with others, cooperation * **Competence**: accomplishing and learning things, feelings of achievement, daily routine/progress, completing tasks * **Autonomy:** agency in a private space, explorative freedom and planning, self-initiated play as exercise of own’s agency   For frustration:   * **Relatedness**: Harassed by toxicity * **Autonomy**: Guilt, low valuation of gaming—gaming when not wanting to |
| [Ballou et al. (2022)](https://doi.org/10.1145/3491102.3501858) | Do People Use Games to Compensate for Psychological Needs During Crises? A Mixed-Methods Study of Gaming During COVID-19 Lockdowns | Mixed-methods study during Covid showing that people use games to compensate for thwarted needs in daily life through need-satisfying experiences in games—but that this is not universal, showing up clearly in the qualitative data but not the quantitative data. Authors describe the following themes of need-satisfying gaming experiences:  **Autonomy**   * Through in-game actions — being able to play at one’s own pace, or undertake self-directed exploration * Through the act of play — having the ability to freely (dis)engage, by being playable anywhere (mobile games or portable board games) or any time, thanks to short session lengths * 😫 Can be frustrated by the perception of having no perceived alternatives to gaming, foregrounding the lack of willingness, volition, and control in gaming   **Competence**   * Source of challenge and achievement – having opportunity to test physical and/or cognitive skills, overcoming challenges, being able to invest effortful practice into improving * A sense of progress/momentum - providing structure and momentum throughout the day, even without any challenge present (e.g., progressing in Idle games)   **Relatedness**   * **Excuse for interaction -** games as a technological mediating environment for people to interact; and as a socially accepted occasion to socialise. In other words, gaming became a means to the end of interacting with others, with players not necessarily invested in the game itself (or in winning it) * **As a social lubricant -** gaming as improving the quality of interactions with others, and thus, relatedness satisfaction; games serving as a source of shared stimulation, attention, and structure * **Source of connection -** by being a member of a group or community of players with a shared interest, be it by virtue of playing a game they knew or saw others play, or by participating in online discourse about the game |
| [Finke et al. (2018)](https://pubs.asha.org/doi/10.1044/2017_AJSLP-17-0073) | “To Be Quite Honest, If It Wasn't for Videogames I Wouldn't Have a Social Life at All”: Motivations of Young Adults With Autism Spectrum Disorder for Playing Videogames as Leisure | Interview study of video game players with autism spectrum disorder. Not SDT focused, but includes a handful of themes that are need-relevant:  **Relatedness satisfaction:**   * Playing with new people; not well known * Playing with established friends * Something to talk about with new friends * Conversations with friends about a shared interest * Talking with friends while playing a videogame together * Meeting new people and having the opportunity to gain new friends   **Competence frustration:**   * Not doing well in the game * Not accomplishing something desired   **Autonomy frustration:**   * Playing a game you do not really like |